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HARRINGTON SQUARE, CAMDEN

FLOOD RISK ASSESSMENT

Project No: 2202-03
June 2023
HSC-REN-XX-XX-RP-C-00001
Rev: P03

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1.0 INTRODUCTION

1.1 Purpose of this report

This Site-Specific Flood Risk Assessment (FRA) has been prepared for the proposed development at Harrington Square, Camden. The assessment investigates the potential flood risk impacts of the proposed development in accordance with the National Planning Policy Framework (NPPF) and supporting Planning Practice Guidance.

This FRA is considered proportionate to the degree of flood risk and to the scale, nature and location of the development. This FRA has been prepared in accordance with non-statutory technical standards for sustainable drainage and NPPF climate change allowances.

2.0 THE SITE

2.1 Site Location

The proposed development site is located at the Land adjacent to Hurdwick House, Harrington Square, Camden.

The site location is described below:

- Post Code NW1 2JJ
- OS X (Easting) 529212
- OS Y (Northing) 183240
- Nat. Grid TQ 29212 83240

The site location is illustrated in Figure 2.1 below.

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Figure 2.1: Indicative Site Location

2.1 Site Description

The site is circa 0.05 hectares and was historically used as a car parking area for the adjacent residential buildings. The site comprises 66% impermeable hard standing and is bounded by residential buildings to the north and southeast, and Harrington Square to the southwest.

Access to the site can be gained from Harrington Square to the south.

The topographical survey (Appendix A) indicates that the site lies approximately between 24.22 AOD at the eastern boundary and 23.65m to the east.

A Thames Water Combined Sewer is present to the south of the site within Harrington Square and a Thames Water Surface Water Sewer is present to the east of the site within the private access road. Refer to Appendix B for Thames Water Sewer Records.

2.2 Existing Site Drainage

The site is 66% impermeable with associated existing drainage. A CCTV survey has been carried out to trace the onsite drainage and is included in Appendix C for reference.

Upon review of the survey information, surface water from the site is indicated to be collected by gullies before discharging into the Thames Water surface water Sewer to the east of the site which then ultimately discharges into the Thames Water Combined Sewer to the south of the site which is assumed to connect into the main combined sewer beneath Harrington Square.

The CCTV information indicates surface water drainage to the east of the site and that surface water from the site currently drains into it before discharging into the combined sewer downstream.

2.3 Geology

British Geological Survey mapping does not display any made ground deposits on site, however based on the historical mapping and the development that has taken place, made ground deposits are likely to be present. Information from the Geo-Environmental Data Report also indicates no made ground on site, however worked ground has been identified 20m west of this site.

No superficial deposits are mapped onsite. BGS mapping indicates the Langley Slit Member, which typically consists of silt to clay, is located approximately 725m to the south of the site.

The deeper solid geology is indicated to be part of the London Clay Formation which typically comprises of clay, silt and sand.

No faults are shown on or within an influencing distance of the site.

For further details, reference should be made to the phase 1 geo-environmental report by renaissance.

2.4 Hydrology

The nearest watercourse to the site is the Regents Canal which is located 740m to the north east of the site.

BGS mapping indicates the site to be underlain by the London Clay formation which has low permeability and a negligible significance for water supply or river base flow.

The site is not within a groundwater Source Protection Zone. There is one active licensed groundwater abstraction site, located 978m north west of the site.

2.5 Proposed Development

The scheme for the proposed development comprises a four story residential building including a single storey basement. For the purposes of this report the basement floor depth is assumed at 20.295mOD, A bored piled solution is currently being proposed.

Minimal soft-landscaping is incorporated as part of the proposed development plans in the form of grass to the west and southwest corner of the site and hedging is present along the southern boundary of the site.

The proposals are to work within the existing site levels on the site.

Refer to Appendix D for the proposed development plans.

3.0 SUITABILITY OF DEVELOPMENT PROPOSALS

3.1 National Planning Policy

The National Planning Policy Framework (NPPF) and the accompanying Planning Practice Guidance (PPG) aim to ensure that flood risk is taken into consideration at all stages of the planning process and advocates the use of a risk-based 'Sequential Test' to preferentially locate development in areas with a low risk of flooding. Where development is necessary in high-risk areas, the NPPF aims to ensure that the development is safe without increasing flood risk through the application of the Exception Test.

The PPG, defines the levels of flood risk within England as follows:

- Flood Zone 1 - Low Probability - Land having less than a 1 in 1,000 annual probability of river or sea flooding.
- Flood Zone 2 - Medium Probability - Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
- Flood Zone 3a - High Probability - Land having a 1 in 100 or greater annual probability of river flooding; or having a 1 in 200 or greater annual probability of sea flooding.
- Flood Zone 3b - Functional Floodplain - Land where water has to flow or be stored in times of flood.

The PPG states that a site-specific FRA is required for all new development proposals located in Flood Zones 2 and 3, and for any proposal of 1 hectare or greater regardless of its flood zone classification. The flood zones as described above are shown on the Environment Agency's Flood Map for Planning, available online.

Table 2 of the PPG classifies development types based on their vulnerability to flooding, ranging from 'Essential Infrastructure' which has to be operational in times of flood, through 'Highly Vulnerable' (e.g. emergency service stations), 'More Vulnerable' (e.g. residential dwellings and establishments), 'Less Vulnerable' (e.g. offices/retail), to 'Water Compatible' development (e.g. open space, docks, marinas and wharves).

Table 3 of the PPG indicates which 'vulnerability classes' are acceptable in each of the Flood Zones, and when the Exception Test should be applied. This is reproduced as Table 3.1 below.

3.2 Flood Risk Vulnerability

The Flood Risk Vulnerability Classification has been determined in accordance with Planning Practice Guidance, Flood Risk and Coastal Change. For multi-occupancy sites, the Flood Risk Vulnerability should be based upon the most vulnerable part of the site. The Flood Risk Vulnerability Classification is 'More Vulnerable', which includes 'Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels'.

3.3 Flood Zone Compatibility

The Flood Zone Compatibility has been reviewed in accordance with Planning Practice Guidance, Flood Risk and Coastal Change, paragraph 067.

FLOOD ZONES	FLOOD RISK VULNERABILITY CLASSIFICATION				
	Essential infrastructure	Highly vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test Required	✓	✓	✓
Zone 3a	Exception Test Required	✗	Exception Test Required	✓	✓
Zone 3b	Exception Test Required	✗	✗	✗	✓*

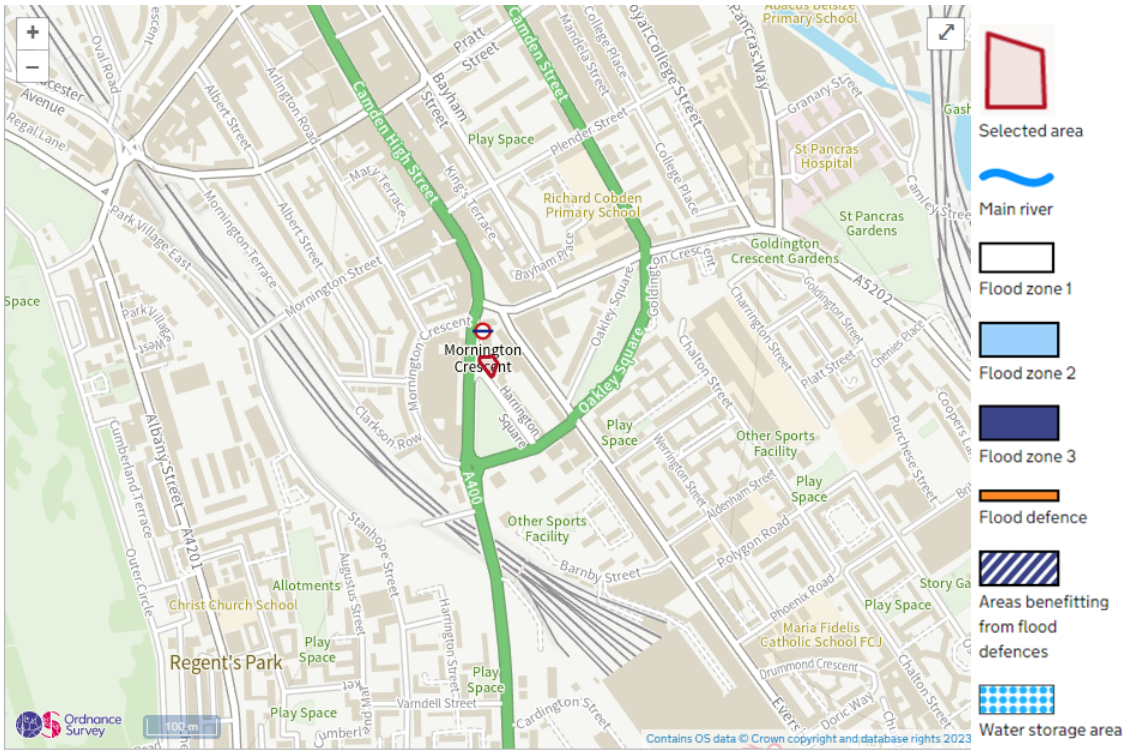
Table 3.1: Flood Risk Vulnerability and Flood Zone Compatibility Key

Key:
✓ Development is appropriate
✗ Development should not be permitted

The above, Table 3.1, indicates which 'vulnerability classes' are acceptable in each of the Flood Zones, and when the Exception Test should be applied.

The site is shown on the Environment Agency's Flood Map for Planning to be located within Flood Zone 1. (Refer to Figure 3.1 for map). Based on the guidance presented in Table 3.1 above, the Sequential Test is deemed to have been passed.

According to Environment Agency flood maps, the site is located predominantly within Flood Zone 1. The vulnerability classification is 'More vulnerable'. Therefore, based on the guidance presented in Table 3.1 above, the proposal is considered to be appropriate in accordance with Planning Practice Guidance.



OS data @ Crown copyright and database rights 2022

Figure 3.1: Environment Agency Flood Map for planning

3.4 Application of Sequential and Exception Test

The above Table 3.1 indicates which 'vulnerability classes' are acceptable in each of the Flood Zones, and when the Exception Test should be applied.

The Sequential Test, as set out in the NPPF, aims to steer developments to areas with the lowest risk of flooding (i.e. to steer developments to Flood Zone 1 areas where possible). Since the proposed development area is located wholly within Flood Zone 1, based on the guidance presented in Table 3.1 above, the Sequential Test is deemed to have been passed.

The Exception Test, as detailed in paragraph 159 of the NPPF, is applied after the Sequential Test has been undertaken and, in the circumstances, when 'More Vulnerable' development and 'Essential Infrastructure' cannot be located within Flood Zones 1 or 2, or 'Highly Vulnerable' development cannot be located within Flood Zone 1. The proposed land use at Harrington Square is classified as a 'More Vulnerable' development in accordance with Table 2 of the NPPF. Table 3.1, shows that a 'More Vulnerable' development is appropriate within Flood Zone 1 and it is not necessary to apply the Exception Test.

4.0 SOURCES OF FLOODING

4.1 Flood Map for Planning (Rivers and Seas)

Fluvial flooding occurs when high flows exceed the capacity of the river channel and spill out onto the floodplain, usually after a period of prolonged or heavy rainfall.

The EA Flood Map for planning (rivers and sea) has been reviewed (Figure 4.1). The site falls wholly within Flood Zone 1. The risk of flooding from Rivers and Sea across the site is very low. It means that each year the land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%).

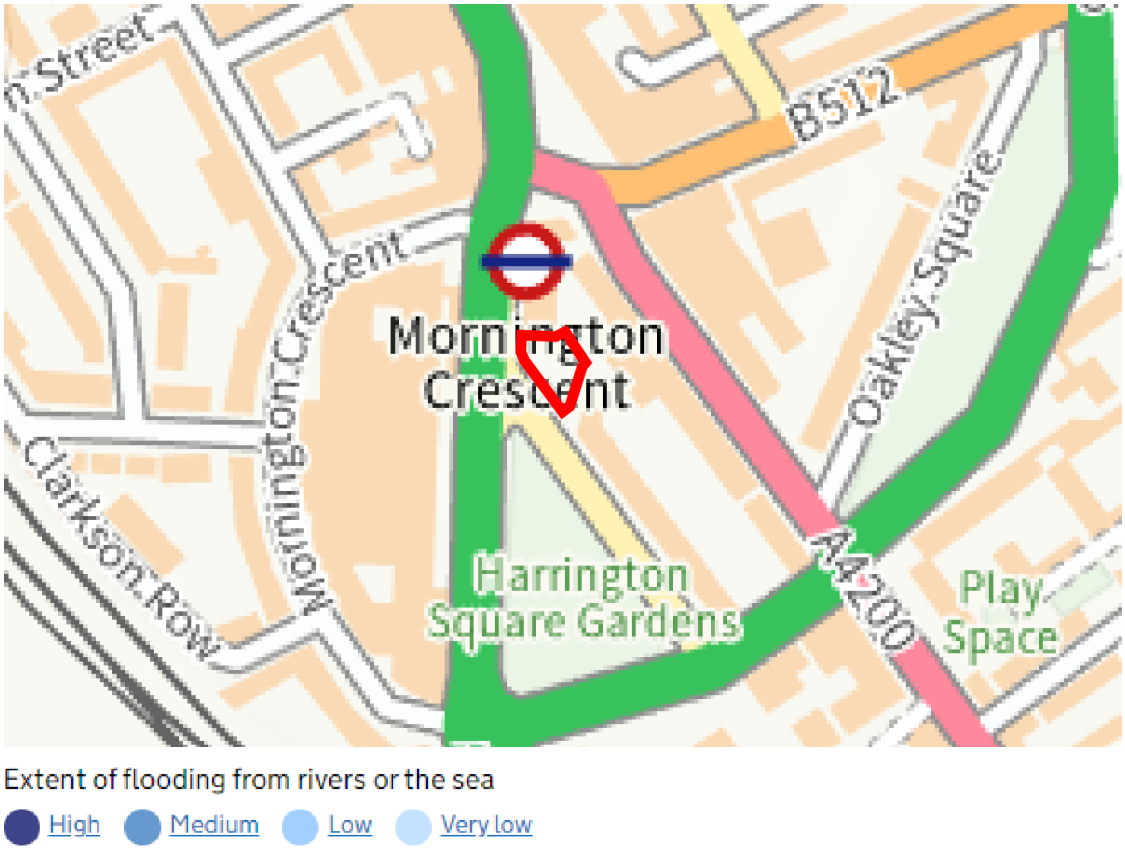


Figure 4.1: Risk of flooding from Rivers and Seas

4.2 Flooding from Land (Pluvial Flooding)

The Environment Agency Map showing risk of flooding from surface water is presented in Figure 4.2. This type of flooding can be difficult to predict, much more so than river or sea flooding as it is hard to forecast exactly where or how much rain will fall in any storm.

As illustrated in figure 4.2, the site is typically at very low (<0.1%) risk of surface water flooding; however, a small area of low risk exists to the east and north of the site within the private car park.

This map is not definitive and is based on the best information available to the Environment Agency, such as ground levels and drainage.

To mitigate any risk associated with surface water flooding, the building is to be set back from the highway with appropriate falls to mitigate any issues.

Figure 4.2: Risk of Flooding from Surface Water

4.3 Flooding from Groundwater

Groundwater flooding tends to occur sporadically in both location and time. When groundwater flooding does occur, it tends to mostly affect low-lying areas, below surface infrastructure and buildings (for example, tunnels, basements, and car parks) underlain by permeable rocks (aquifers). The site is not indicated to be underlain by permeable rocks.

The Increased Susceptibility to elevated groundwater map produced by Camden Council as part of their Phase 2 Strategic Flood Risk Assessment indicates that the site is not at risk of elevated groundwater.

Based on the above, the site is not considered to be at risk from groundwater flooding.

4.4 Flooding from Sewers

Sewer flooding occurs when urban drainage networks become overwhelmed and maximum capacity is reached. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. This type of flooding tends to occur sporadically in both location and time. The majority of sewers are built to the guidelines within Sewers for Adoption. These sewers have a design standard to the 1 in 30-year flood event and therefore it is likely that most sewer systems will surcharge during rainstorm events with a return period greater than 30 years.

Thames Water Sewer flooding records contained within Appendix E show no incidents of flooding in the site as a result of surcharging of public sewers.

The development proposals also intend to reduce the rate of surface water discharge from the site and accommodate the balance of flows up to and including the 1 in 100-year critical event plus climate change allowance. This restriction, attenuation of flows and discharge to watercourse will have a positive impact on the surrounding existing drainage and hence work to mitigate the long-term risk of flooding from sewers.

4.5 Flooding from Reservoirs

The Environment Agency Reservoir flood risk map indicates the site to be outside of the maximum flood extent of a breach to any local reservoir.

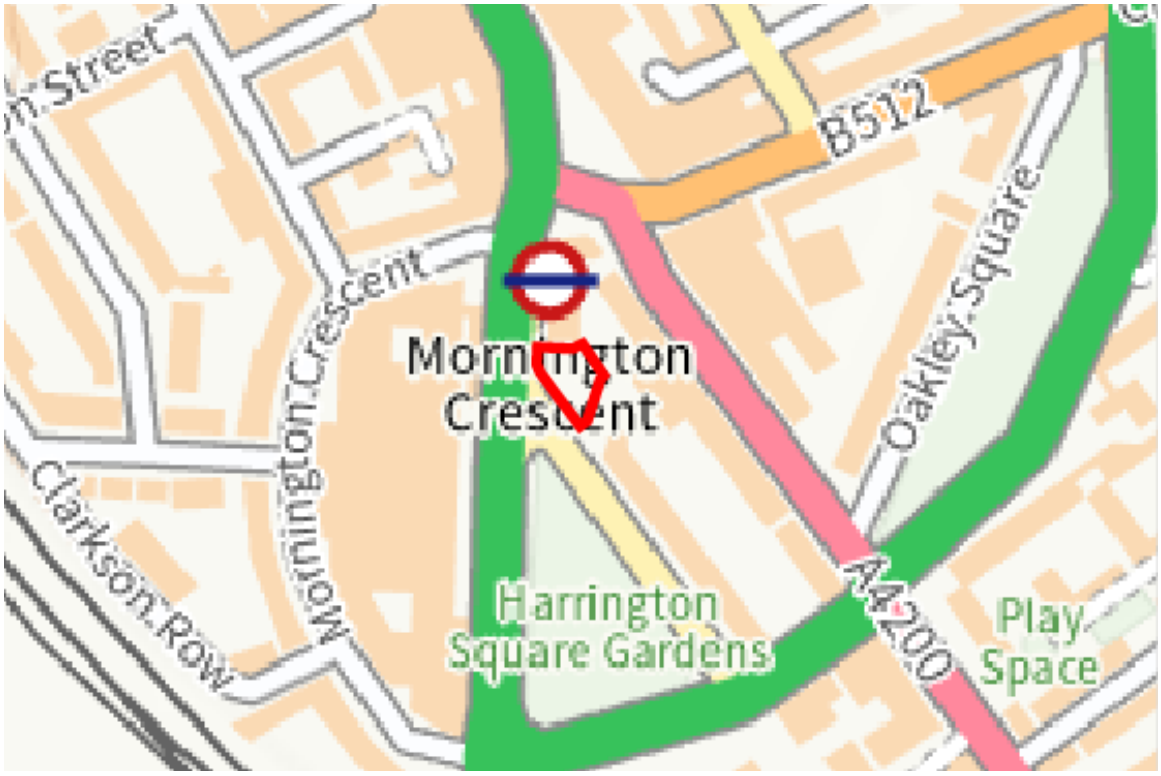


Figure 4.3: Risk of Flooding from Reservoirs

4.6 Summary of Flooding Risks

Based on the above review the site is located in Flood Zone 1

The risk of flooding from pluvial, surface water, groundwater, sewers and reservoirs are all considered to be low.

5.0 DRAINAGE STRATEGY

For detailed Drainage Strategy refer to renaissance Drainage Strategy document (HSC-REN-XX-XX-RP-C-00002). A brief summary of the principles to be adopted is included below.

5.1 Drainage Hierarchy

In accordance with NPPF, the following hierarchy of surface water drainage options has been considered:

- Rainwater Storage;
- Discharge into the ground (infiltration);
- Discharge to a surface water body;
- Discharge to a surface water sewer, highway drain, or another drainage system;
- Discharge to a combined sewer.

Rainwater Storage has been considered; however, this method is not considered usable due tp the limited availability of usage for the harvested rainwater.

Infiltration has been considered. Due to the limited space on site away from adjacent buildings or highways to accommodate soakaways and the potential contamination risk posed given the presence of made ground on site, infiltration has been discounted as the primary method of discharging surface water from the site.

Opportunities for discharge to watercourse have been considered. The nearest named watercourse is the Regent's Canal approximately 740m to the north east of the site. The drainage network would have to cross third party land to form the connection which is not feasible and as a result, this method of discharge has been discounted.

Opportunities to discharge into a surface water sewer have been considered. A surface water sewer is present to the north east of the development site. The sewer is currently indicated to be blocked, however it is assumed to connect into the combined sewer immediately to the east of the site. The invert level of this sewer is such that forming a gravity only connection would not be feasible and as a result, this method of discharge has been discounted.

Opportunities to connect into a combined sewer have been considered. A combined sewer is present to the east of the site which is assumed to connect into the main sewer running beneath Harrington Square. A predevelopment enquiry has been submitted

The surface water system will accommodate flows on-site up to and including the 1 in 100-year critical duration event, with an allowance for climate change. The surface water will be collected on site, via various SUDs features and collected by a dedicated gravity system designed in accordance with BS EN 752 before discharging to the watercourse. Detailed calculations of onsite storage and discharge rates can be found in the detailed Drainage Strategy Report.

Surface water discharge rates from the site are to be restricted to Q_{BAR} for the 100 year storm. Refer to the Outline Drainage Strategy for the Micro-drainage Outputs and initial storage estimate calculations.

Foul water flows will be collected by a dedicated gravity network designed in accordance with BS EN 752 before discharging to the existing combined sewers on site, subject to agreement under Section 106 of the water industry Act.

5.2 Climate change

The drainage strategy will include an increase in the storm intensity of 40%, which is consistent with the effects of climate change for this development with a design life of 100 years, as outlined in NPPF.

6.0 CONCLUSION

The site is within flood zone 1 and is considered to have a very low risk of flooding from surface water.

The site is considered appropriate under Planning Practice Guidance.

Surface water will discharge into the Thames Water Combined Sewer at an agreed discharge rate, subject to agreement with the Thames Water and Camden Borough Council Flood Risk Management Team.

It is proposed that Surface water discharge rate from the site is restricted to Q_{BAR}.

Foul flows from the development will be discharged to the existing combined sewer within the private car parking area Street to the south of the site, subject to Section 106 Agreement.

The site is considered to have a low risk of flooding from surface water.

The site is not considered to be at risk from groundwater flooding.

The site is not considered to be at risk from sewer flooding.

The site is not considered to be at risk of flooding from reservoirs.

7.0 REFERENCES

National Planning Policy Framework, Ministry of Housing Communities & Local Government, https://www.gov.uk/government/publications/national-planning-policy-framework--2, (20 July 2021)

Planning practice guidance – Ministry of Housing Communities & Local Government, https://www.gov.uk/government/collections/planning-practice-guidance, (20 July 2021)

Ministry of Housing, Communities and Local Government, https://www.gov.uk/guidance/flood-risk-and-coastal-change, (20 August 2021)

Flood risk assessments: climate change allowances – Environment Agency https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances, (06 October 2021)

British Geological Survey – Geology of British Viewer, http://mapapps.bgs.ac.uk/geologyofbritain/home.html

Long term flood risk information, https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

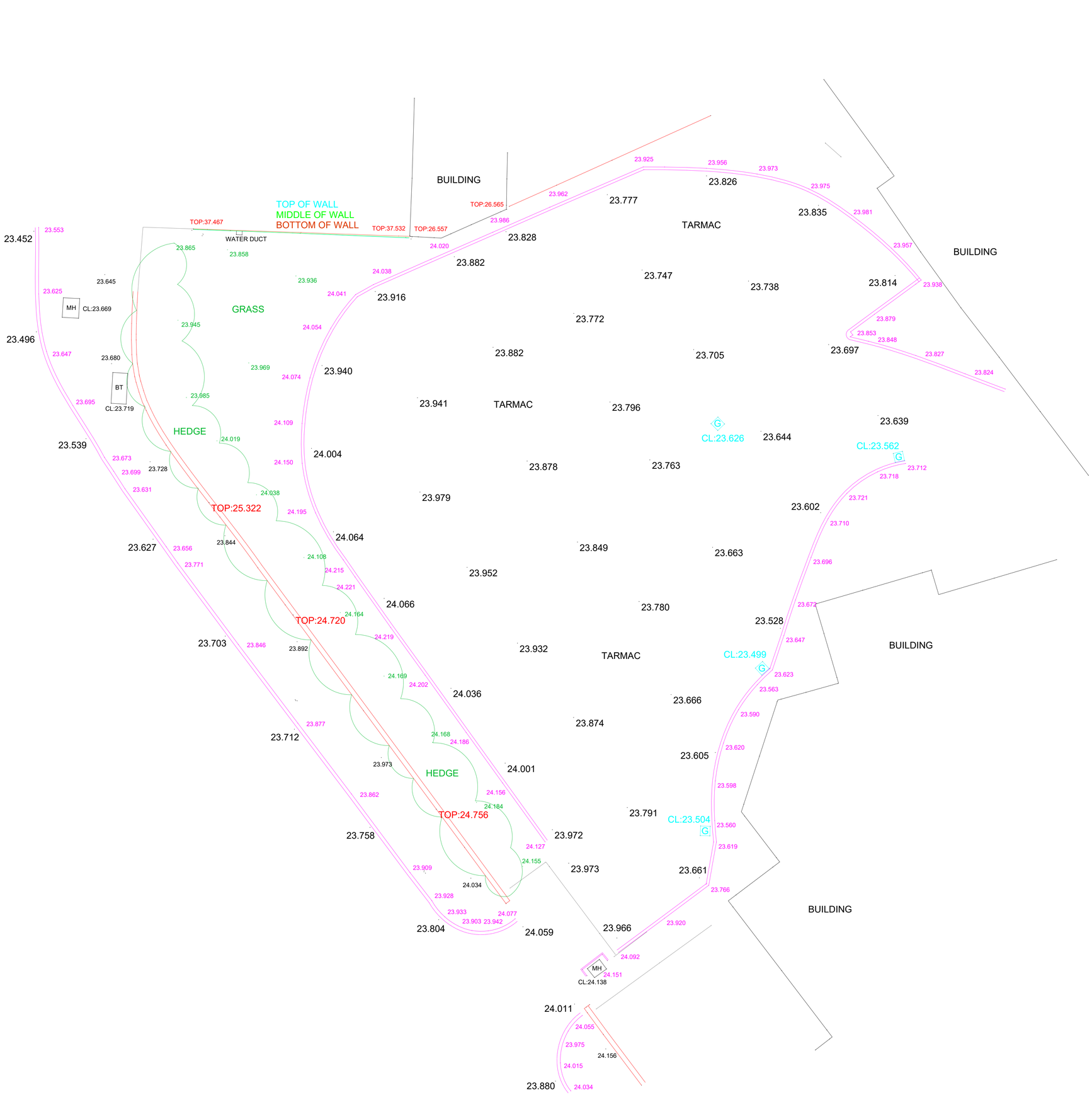
Improving the Flood Performance of New Buildings, Flood Resilient Construction, Department for Communities and Local Government, https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/improving-the-flood-performance-of-new-buildings-in-flood-risk-areas, (May 2007)

The London Plan 2021, https://www.london.gov.uk/programmes-strategies/planning/london-plan/new-london-plan/london-plan-2021, (March 2021)

Camden Borough Council Strategic Flood Risk Assessment 2014, https://www.camden.gov.uk/sustainable-drainage-systems, (July 2014)

Camden Flood Risk Management Strategy 2022-2027, https://www.camden.gov.uk/flooding#pxho, (2022)

APPENDIX A
Existing Topographical Survey



NOTES

23.973 — MAGENTA - KERB LINE AND BACK OF KERB SPOT LEVEL

TOP:24.720 — RED - BRICK WALL

1. THIS SURVEY IS ACCURATE AS OF 17TH NOV' 2022
2. THE ACCURACY AND AMOUNT OF DETAIL SHOWN IS ONLY EQUIVALENT WITH THE GEOGRAPHICAL SCALE OF MAPPING. CARE SHOULD BE TAKEN WHEN USING LARGER SCALES
3. DO NOT SCALE FROM THIS DRAWING. WORK FROM FIGURED DIMENSIONS ONLY
4. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN METRES UNLESS OTHERWISE STATED
5. ALL LEVELS SHOWN ON THIS DRAWING ARE IN METRES AOD UNLESS OTHERWISE STATED
6. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE WORKS
7. GPS COORDINATED CONTROL STATIONS WERE USED AS A BASE IN WHICH TO RELATE THE SURVEY BACK TO ORDNANCE SURVEY GRID
8. ANY DESIGN UNDERTAKEN BASED ON THIS TOPO SURVEY SHOULD BE CONSULTED WITH GRIDPOINT IN THE FIRST INSTANCE

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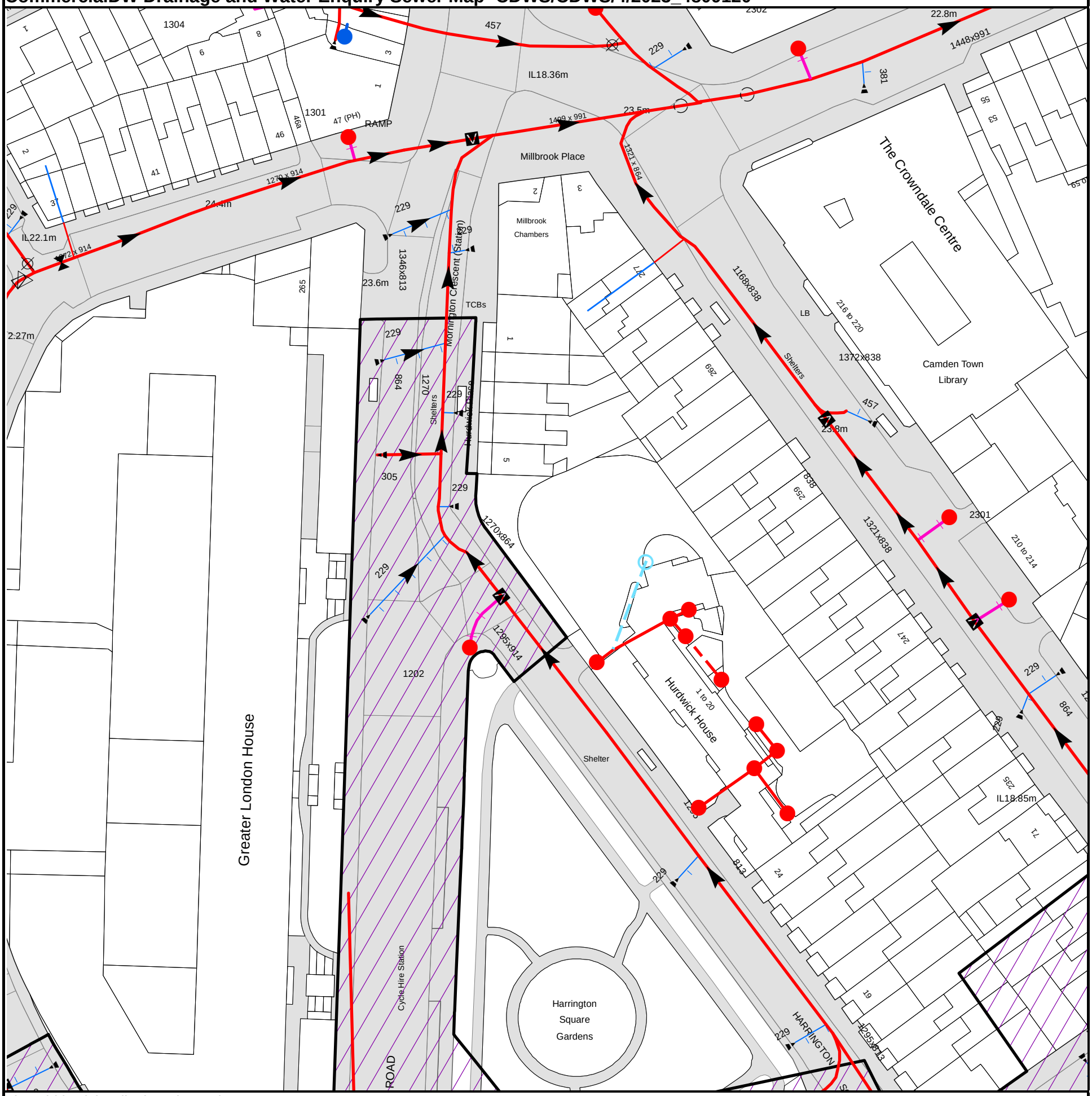
Job Title:	
DOMIS CONSTRUCTION HARRINGTON SQUARE	
Title:	
TOPOGRAPHICAL SURVEY	
Drawing No.	Rev.:
DOMI-R636-01	-
Date:	Scale:
17.11.2022	NTS
Drawn by:	Checked by:
AD	JA

INFORMATION

APPENDIX B
Thames Water Sewer Records

CommercialDW Drainage and Water Enquiry Sewer Map- CDWS/CDWS/4/2023_4809120



The width of the displayed area is 200m

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.

APPENDIX C
Drainage Survey

PAS 128: 2014 QUALITY LEVEL GUIDE

Q-LEVEL	DESCRIPTION	ACC.	Q-LEVEL	DESCRIPTION
QL-D	Service positions taken from records.	Undefined	QL-B2	Horizontal & vertical location using only one geophysical technique.
QL-C	Visual evidence of service existence but undetectable by geophysical technology.	Undefined	QL-B1	Horizontal & vertical location using multiple geophysical techniques.
QL-B4	Undetectable service present shown as an assumed route. (AR)	± +/- 400mm or N/A	QL-A	Horizontal & vertical position verification by open excavation, manholes and/or inspection chambers.
QL-B3	Horizontal location by one geophysical technique but with none or poor depth information.			

DETECTION METHOD

IN ACCORDANCE WITH PAS 128: 2014 SURVEY TYPE B

DRAINAGE SURVEY

All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber sizes/types and service data recorded from ground level. All connections from DPs, Gullies, Drains, VP's, RE's and lampholes have been proven wherever possible using audible connections (AC) and/or sonde instrumentation where applicable. Where these methods have proved unsuccessful then assumed (AR) straight line connections will be shown.

CCTV DRAINAGE SURVEY

All accessible Manholes and Inspection chambers have had their respective covers lifted with pipe sizes, inverts, chamber sizes/type and service data recorded from ground level. Pipework has been traced, accessed and collected for post processing. Drainage layout, including manhole covers not located by topographical survey, may be taken from CCTV chainage and will be shown as indicative only.

Electricity

Elec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

British Telecoms

BT cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Due to current laws and legislation protecting all BT apparatus, cabling can only be located remotely. We therefore compare all our telecom findings against record information to produce the final service layout. In some instances, where high amount of cable ducts are present, we may only be able to identify a linear centre peak signal rather than identifying all the individual duct positions. For further information regarding Telecoms apparatus, please contact Openreach directly.

Cable TV & Communications

CTV and/or Com cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Fibre Optic

FO cables will have been predominantly located using GPR methodology. This is due to the materials used within fibre optic cabling. In some rare instances, tracer cabling or conductible non fibre optic cabling will be present within some or all ducting. When this is the case, both EML and GPR methodology will be combined to identify service network and achieve greater quality levels.

Lighting, Traffic Signal & Security Cables

LC, TS and/or Sec cables will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required.

Gas & Water Inc. Fuel Pipes and Hot Water Pipes

GM/GS and/or WM/WS pipe work will have been attempted and located using both EML & GPR methodology with electronically derived depths shown for the former and depths to crown levels shown for the latter.
When the Gas/Water pipe work is constructed using conductible materials, then we are able to to employ multiple geophysical techniques to identify service network and achieve greater quality levels. When a non conductible material is used, GPR methodology will be employed to locate and plot the final service layout.

Ground Penetrating Radar

GPR methodology is used to identify and locate all non metallic, non conductible piping and cabling. We also employ GPR to obtain a greater accuracy levels on EML located services. The GPR has a greater success rate on pipe or service diameter upward of Ø63mm,C63mm, as size increments increase, so does the chance of detection. The GPR can produces varying results and as such, wouldn't be used as an independent utility surveying instrument.

Unidentified Traces

All UITs will have been predominantly located using EML methodology with electronically derived depths shown. GPR techniques will be employed to achieve greater quality levels as required. Every effort has been made to identify the service but in this instance, is not achievable. We recommend excavation work to determine identity and depth where applicable.

Scarring (QL-C)

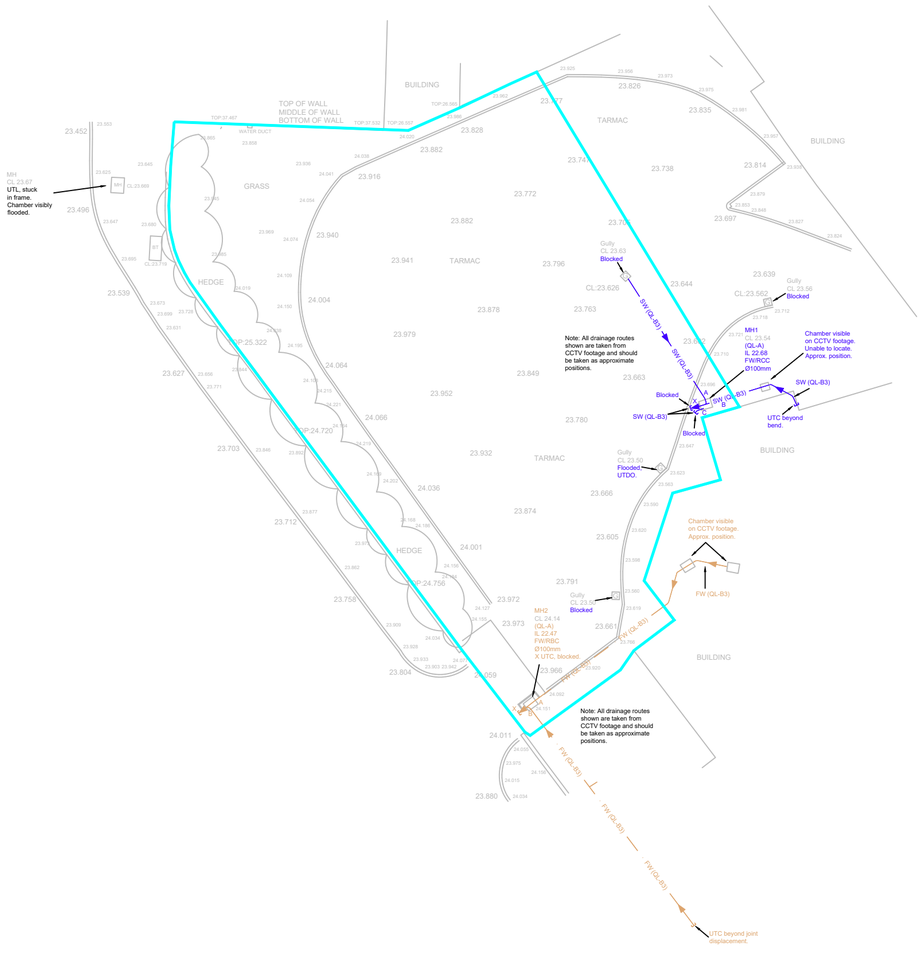
Scarring has been identified on site with a potential of an undetectable service present.

Assumed Routes & Taken from Records (QL-B4/D)

Assumed routes (AR) are shown if there is evidence that a service exists but we are unable to trace it whilst on site. The surveyor will attempt to locate various risers/ics/valves/meters (service evidence) etc. around site area to successfully determine an assumed route between these points. If there is little evidence on site but they believe a service is still present, then a common sense approach to an assumed route shall be employed.

Taken from records (TFR) are service routes that are taken from STAT record plans or previous survey information and overlaid onto our drawings.

NORTH
Indicative



UTILITIES & UNDERGROUND INVESTIGATIONS

ABBREVIATIONS & SYMBOLS

1D 5C	1 Duct 5 Cables	DCr	Depth To Crown	RBC	Rectangular Brick Chamber
Ø	Diameter	DI	Depth To Invert	RCC	Rectangular Conc Chamber
AC	Audible Connection	DS	Depth To Silt	RE	Rodding Eye
AG	Above Ground	DTB	Depth To Base	SA	Survey Abandoned
AR	Assumed Route	DTW	Depth To Water	SL	Silt Level
BL	Base Level	DTS	Depth To Surcharge	SuL	Surcharge Level
CB	Concrete Benching	EBD	External Backdrop	TFR	Taken From Records
CBC	Circular Brick Chamber	EOT	End Of Trace ⟶	UTC	Unable To CCTV
CCC	Circular Conc Chamber	IBD	Internal Backdrop	UTDO	Unable To Determine Outfall
CL	Cover Level	IL	Invert Level	UTL	Unable To Lift
CPC	Circ Plastic Chamber	OH	Overhead	UTS	Unable To Survey
CrL	Crown Level	PDR	Poor Depth Response	UTT	Unable To Trace
CU	Camera Under Water ⟶	RB ●	Rest Bend	WL	Water Level

BT BT CABLE(S)
O/BT OVERHEAD BT CABLE(S)
COM COMMUNICATIONS CABLE(S)
CTV CABLE TV CABLE(S)
DUCT EMPTY DUCT
E ELECTRIC CABLE(S)
O/E OVERHEAD ELECTRIC CABLE(S)
FO FIBREOPTIC CABLE(S)
FUEL FUEL PIPE(S)
GM GAS MAIN
GS GAS SERVICE
GPR GROUND PENETRATING RADAR (GPR) TRACE
HW HOT WATER PIPE
LC LIGHTING CIRCUIT
OIL OIL PIPE(S)
SCAR VISIBLE SCARRING
SEC SECURITY CABLING
TC TELECOM CABLE(S)
TS TRAFFIC SIGNAL
UIS UNIDENTIFIED SERVICE
UIT UNIDENTIFIED TRACE
WM WATER MAIN
WS WATER SERVICE
CW COMBINED SEWER
CW RM COMBINED WATER RISING MAIN
EW EFFLUENT WATER
FOUL SEWER
FW RM FOUL WATER RISING MAIN
RM RISING MAIN
SURFACE WATER SEWER
SW RM SURFACE WATER RISING MAIN
INVESTIGATION EXTENTS

Note: ……. UTILITIES COMMENT BOX (GENERAL NOTES)

d0.37m DEPTH TO SERVICE

??-AC AUDIBLE CONNECTION
??-AG SERVICE ABOVE GROUND
??-CU CAMERA UNDER WATER
??-OH SERVICE OVERHEAD

NORTH
Indicative

GENERAL SYNOPSIS

This survey has been carried out in accordance with PAS 128: 2014 & our version of the Royal Institution of Chartered Surveyors (RICS) specification for Measured Surveys of Land, Buildings and Utilities. Our survey extents have been agreed and confirmed with formal acceptance of 47219BWUG from Civilistix Consulting Engineers. If you have any queries regarding the final services layout, please may we ask you to carefully read all the information within this title block in its entirety before continuing to do so.

TOPOGRAPHICAL/.DWG DRAWING INFORMATION

TOPOGRAPHICAL SURVEY DATE 17/11/2022

SURVEY TYPE	DESCRIPTION	EFFECT ON SURVEY RESULTS
TOPO	Client supplied	
OUTDATED		
OS		
NTS		

GENERAL SITE CONDITIONS

EXCELLENT

ADDITIONAL INFORMATION	EFFECT ON SURVEY RESULTS

SURVEY RECOMMENDATIONS

We recommend a PAS utility survey of the entire site to establish the position of underground services.

The sewers with high levels of silt or blockages to be jetted to extend the CCTV drainage survey, if any of these areas are deemed critical or of high importance.

We recommend full statutory record information be obtained to confirm site findings and to position undetectable which may be present.

Due to the geophysical nature of subsurface technology, we always recommend excavation works to be carried out within critical areas for verification and to eliminate the possibility of undetectable services present.

UTILITIES & UNDERGROUND INVESTIGATIONS

DRAWING NOTES

All below ground details shown have been identified from above ground without excavation. Survey Solution use electro-magnetic and/or ground penetrating radar (GPR) methods to investigate for underground utilities, services and features. Results using these methods are not infallible and we recommend trial excavations are carried out to confirm any identifications, positions and depths.

Any areas on the drawing where services or features have not been shown are not necessarily clear of services or features but are an indication that no items have been identified during our investigations. All reasonable care and normal good practice should still be employed during design and construction processes.

Certain types of services such as plastic or concrete pipes, some conduit and ducting where direct access can not be achieved for tracing may not be shown and alternative locating methods should be used.

Survey Solutions has used all reasonable care to research available service records but the completeness or use of the service records supplied to or by Survey Solutions cannot be guaranteed. Therefore Survey Solutions cannot be held responsible for any features annotated as 'taken from records' (TFR).

Depths obtained using electro-magnetic or GPR are effected by ground conditions and should be treated as indicative only. Electro-magnetic depths to utilities and services are generally taken to the centre of a feature, GPR depths to the top of a feature and drainage depth shown to inverts, unless otherwise indicated.

Drainage pipe sizes will be obtained without entering the chamber and therefore should be treated as approximate. Pipe dimensions which have not been obtained visually will be taken from records when available.

All services, drainage and utilities routes are assumed straight between access points, unless otherwise stated. The numbers of cables in runs will not be shown unless specifically requested. All services are below ground unless indicated.

Services, utilities and features may not have been surveyed if obstructed or not reasonably visible or accessible at the time of survey.

Survey Solutions accept no responsibility for the completeness or accuracy of either the topographical survey or base mapping on this project.

All critical dimensions and measurements should be checked and verified with any errors or discrepancies notified to Survey Solutions immediately. The accuracy of the digital data is the same as the plotting scale implies. All dimensions are in metres unless otherwise stated.

The contractor must check and verify all site and building dimensions, levels, utilities and drainage details and connections prior to commencing work.

Do not scale from this drawing.

DESKTOP UTILITY RECORDS (PAS 128: 2014 SURVEY TYPE D) PREREQUISITE FOR PAS 128: 2014 SURVEY TYPE B COMMISSIONED: NO

UTILITY	AVAILABILITY	UTILITY COMPANY PROVIDER
SEWER	NO	N/A
WATER MAIN	N/A	N/A
GAS MAIN	N/A	N/A
TELECOM	N/A	N/A
CABLE TV	N/A	N/A
ELECTRICITY	N/A	N/A
OIL PIPES	N/A	N/A
OTHER	NO	N/A

REV	DESCRIPTION	DRAWN	CHECKED	APPR	SURVEY DATE

SURVEY SOLUTIONS

LAND SURVEYING
BUILDING SURVEYING
UNDERGROUND SURVEYING
SITE ENGINEERING
MONITORING

0845 040 5969
survey-solutions.co.uk

IPSWICH BEDFORD COVENTRY GLASGOW LONDON MANCHESTER NORWICH NOTTINGHAM YEOVIL

PROJECT TITLE
HARRINGTON SQUARE, CAMDEN,
LONDON, NW1 2JN.

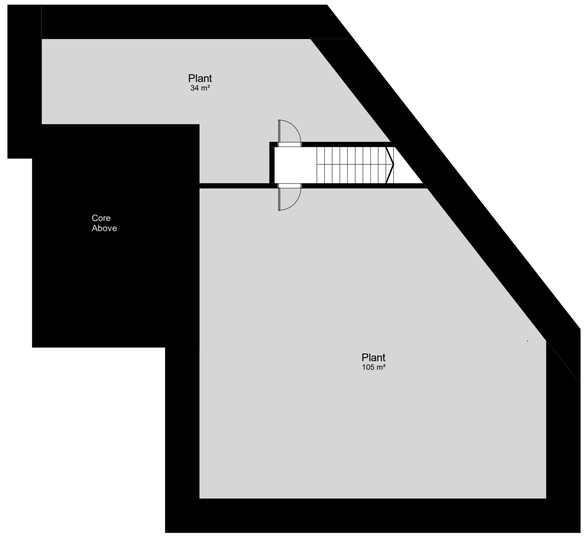
DRAWING DETAIL
CCTV DRAINAGE SURVEY.
SHEET 1 OF 1

CLIENT			SCALE
CIVILISTIX CONSULTING ENGINEERS			1:250
SURVEYOR	SURVEY DATE	CHECKED BY	APPROVED BY	DWG STATUS
JJJ	09/03/2023	SJH	GSB	FINAL
DRAWING NUMBER		REVISION	ISSUE DATE
47219BWUG-01			17/03/2023

RICS chartered ices THE SURVEY ASSOCIATION ISO 9001 REGISTERED FIRM QMS ISO 14001 : 2015 REGISTERED

Original Sheet Size A2H

APPENDIX D
Proposed Development Plans



STUDIO
POWER

Unit 3
3 Crescent
Manchester
M5 4PF

Tel: +XX (X)XXX XXX XXXX
www.studiopower.co.uk

NOTES:

Rev	Description	Date	By

INFORMATION

Client
Salboy

Project
Harrington Square

Title
Basement Floor Plan

Status
Planning

Project number
0010

Date
06/26/23

Drawn by
JB

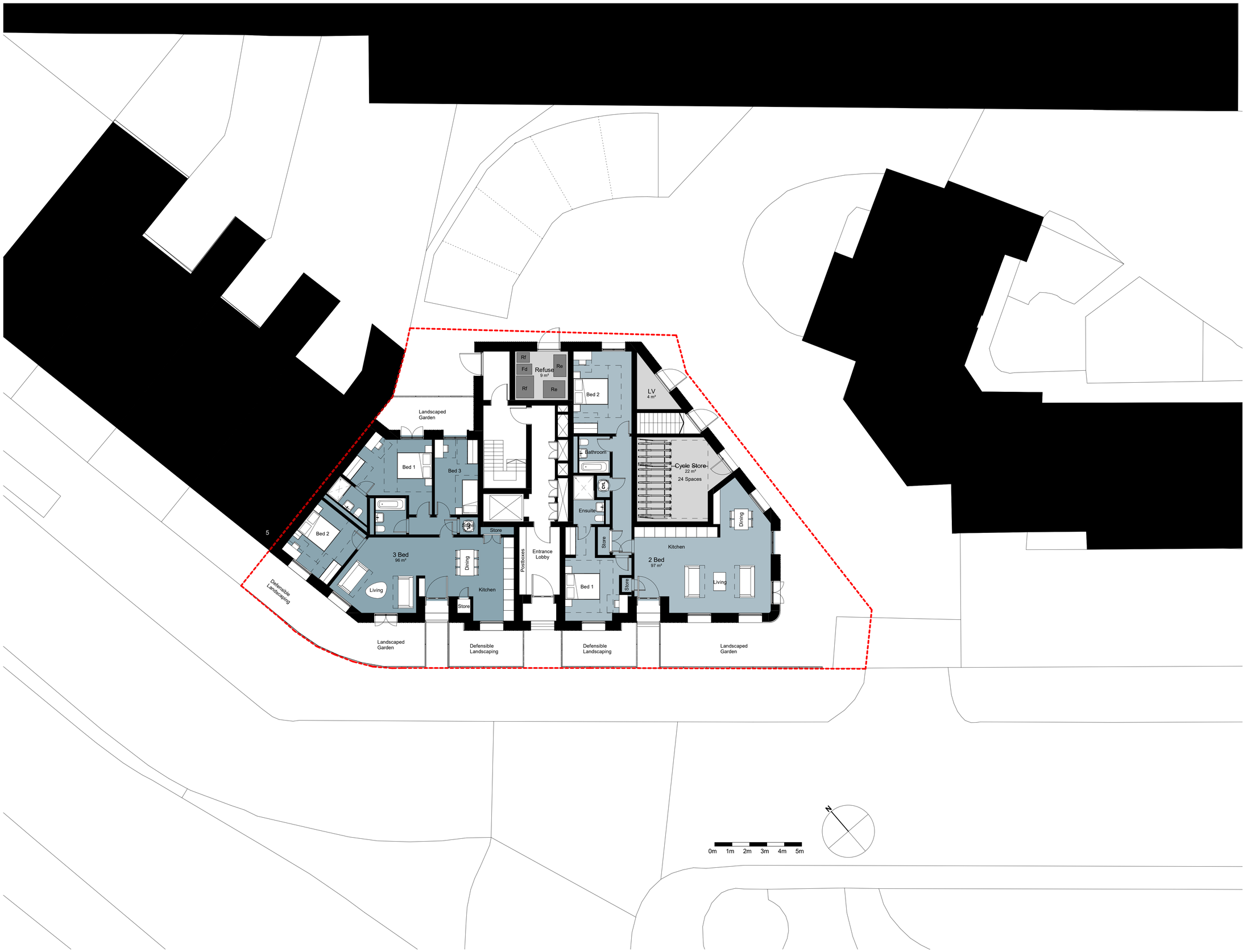
Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-B-DR-A-0300

28/06/2023 15:06:27



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Manchester
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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
Ground Floor Plan

Status
Planning

Project number
0010

Date
19/10/22

Drawn by
JB

Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-00-DR-A-0301

28/06/2023 15:08:34

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Manchester
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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
First Floor Plan

Status
Planning

Project number
0010

Date
19/10/22

Drawn by
JB

Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-01-DR-A-0302

28/06/2023 15:09:12

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Manchester
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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
Second Floor Plan

Status
Planning

Project number
0010

Date
19/10/22

Drawn by
JB

Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-02-DR-A-0302

28/06/2023 15:10:41

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3 Crescent
Manchester
M5 4PF

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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
Third Floor Plan

Status
Planning

Project number
0010

Date
19/10/22

Drawn by
JB

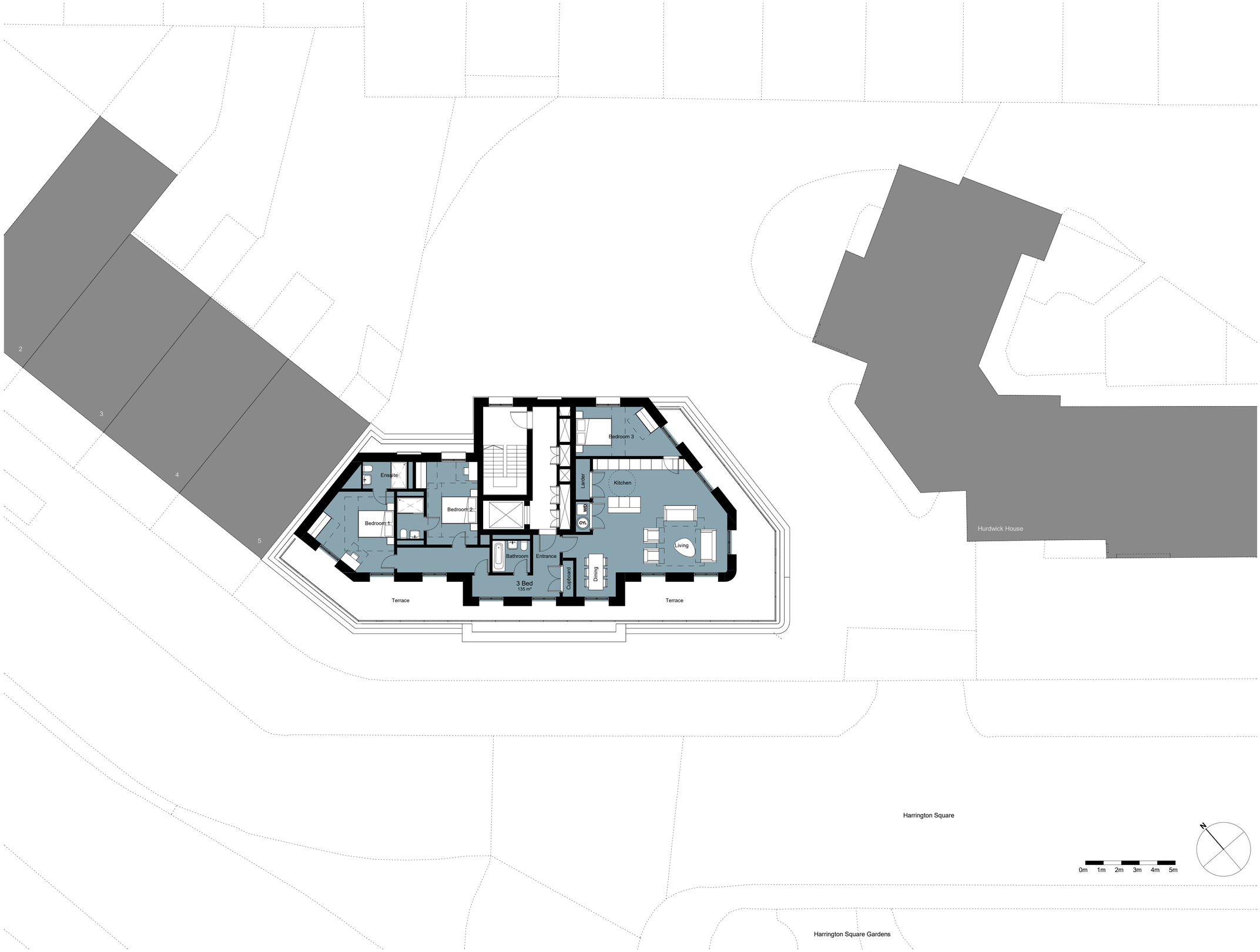
Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-03-DR-A-0304

28/06/2023 15:11:15



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3 Crescent
Manchester
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Tel: +XX (X)XXX XXX XXXX
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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
Fourth Floor Plan

Status
Planning

Project number
0010

Date
19/10/22

Drawn by
JB

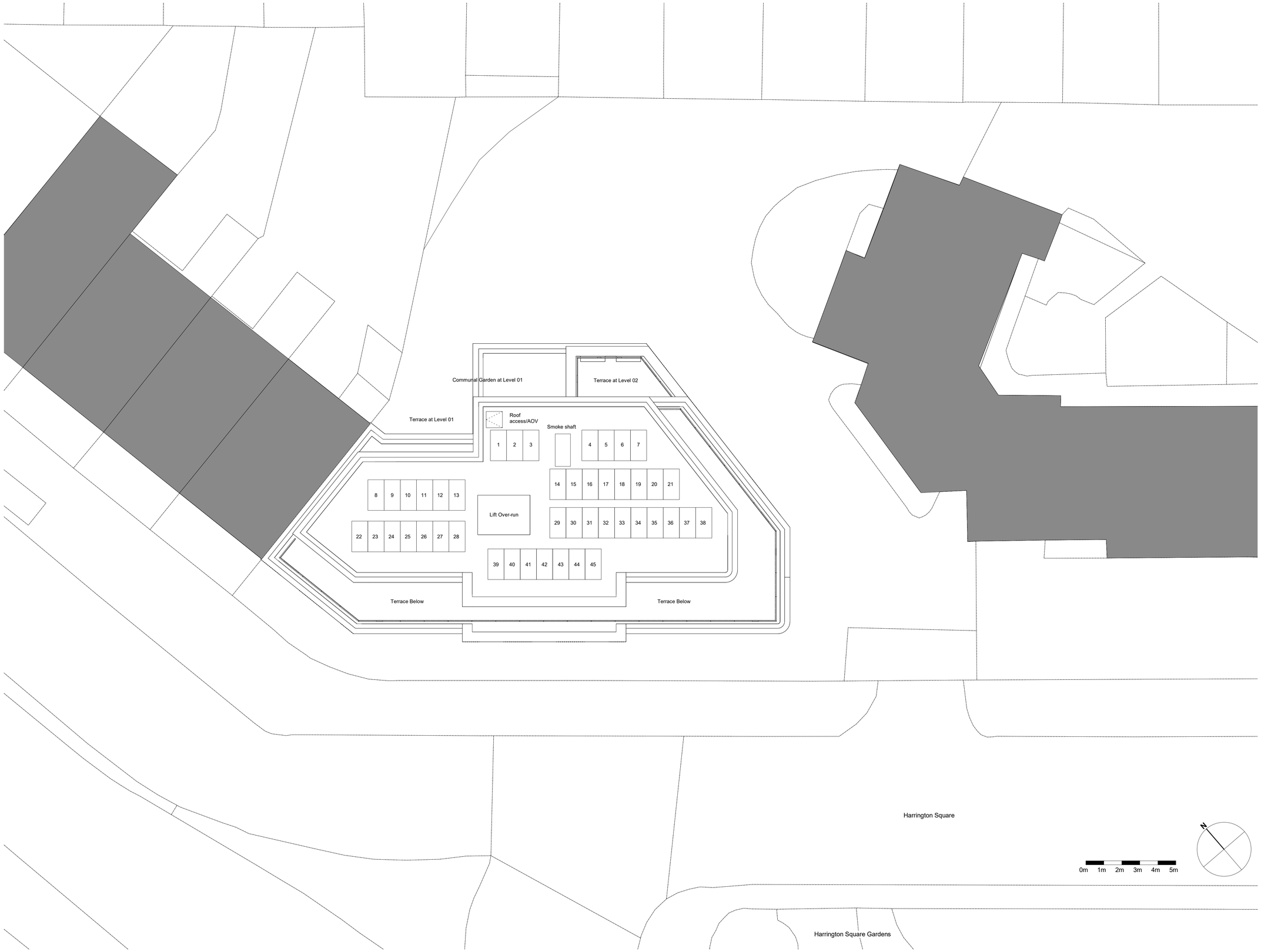
Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-04-DR-A-0305

28/06/2023 15:13:02



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NOTES:

Rev	Description	Date	By

PLANNING

Client
Salboy

Project
Harrington Square

Title
Roof Plan

Status
Planning

Project number
0010

Date
12/06/22

Drawn by
JB

Checked by
SP

Scale
1 : 100@A1

Revision

Drawing No.
0010-SP-XX-RF-DR-A-0306

28/06/2023 15:13:29

APPENDIX E
Thames Water Historic Sewer Flooding Records

Sewer Flooding
History Enquiry

Property Searches

Renaissance Ltd

Search address supplied	Land off Hurdwick Place Land off Hurdwick Place Hurdwick Place London NW1 2JE
Your reference	Harrington Square
Our reference	SFH/SFH Standard/2023_4809123
Received date	**4 April 2023**
Search date	**6 April 2023**

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Land off Hurdwick Place,Land off Hurdwick Place,Hurdwick Place,London,NW1 2JE

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

(i) any negligent or incorrect entry in the records searched;

(ii) any negligent or incorrect interpretation of the records searched;

(iii) and any negligent or incorrect recording of that interpretation in the search report

(iv) compensation payments

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540