



# Shurgard Hampton Drainage Strategy

For Shurgard UK Ltd

---

Date *15 March 2024*

Doc ref *31569-HYD-XX-XX-RP-C-52001*

# Document control sheet

Issued by	Hydrock Consultants Limited Great Suffolk Yard 127-131 Great Suffolk Street London SE1 1PP UK	T +44 (0)203 8468456 E london@hydrock.com
Client	Shurgard UK Ltd	
Project name	Shurgard Hampton	
Title	Drainage Strategy	
Doc ref	31569-HYD-XX-XX-RP-C-52001	
Project number	31569	
Status	S2 - For Information	
Date	15/03/2024 21	

Document production record		
Issue number		Name
	01	
Prepared by	V Karatanov	
Checked by	C MacHugh	
Approved by	V Karatanov	

Document revision record			
Issue number	Status	Date	Revision details
01	S2	21/03/24	Initial Issue for Planning

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

# Contents

<b>1.</b>	<b>Introduction .....</b>	<b>3</b>
1.1	<i>Purpose of The Report .....</i>	3
1.2	<i>Proposed Development.....</i>	3
1.3	<i>Scope of The Report.....</i>	3
1.4	<i>Limitations of The Report.....</i>	3
1.5	<i>References / Design Codes.....</i>	3
<b>2.</b>	<b>Site Information .....</b>	<b>4</b>
2.1	<i>Site Location.....</i>	4
2.2	<i>Existing Site.....</i>	4
2.3	<i>Site Topography.....</i>	4
2.4	<i>Geology &amp; Hydrogeology.....</i>	5
2.5	<i>Existing Drainage.....</i>	5
<b>3.</b>	<b>Flood Risk .....</b>	<b>6</b>
<b>4.</b>	<b>Surface Water Management Strategy .....</b>	<b>7</b>
4.1	<i>Existing Surface Water Drainage Network .....</i>	7
4.2	<i>Existing and Proposed Development Areas .....</i>	7
4.3	<i>Pre-Development Surface Water Drainage .....</i>	7
4.4	<i>Proposed Surface Water Drainage Strategy.....</i>	8
<b>5.</b>	<b>Sustainable Drainage Systems.....</b>	<b>11</b>
5.1	<i>Requirement for Sustainable Drainage Systems .....</i>	11
5.2	<i>The SuDS Management Train and 4-Pillars of SuDS.....</i>	11
5.3	<i>Suitability of SuDS Elements.....</i>	12
5.4	<i>Proposed SuDS Principles .....</i>	13
5.5	<i>Water Quality.....</i>	13
<b>6.</b>	<b>Foul Water Management Strategy .....</b>	<b>15</b>
6.1	<i>Pre-Development Foul Water Drainage .....</i>	15
6.2	<i>Post-Development Foul Water Drainage.....</i>	15
6.3	<i>Post-Development Foul Water Flow Rates .....</i>	15
<b>7.</b>	<b>Ownership and Maintenance Responsibilities.....</b>	<b>16</b>
<b>8.</b>	<b>Residual Risk .....</b>	<b>19</b>
<b>9.</b>	<b>Consent / Planning .....</b>	<b>20</b>
9.1	<i>Thames Water.....</i>	20
9.2	<i>Lead Local Flood Authority.....</i>	20
<b>10.</b>	<b>Conclusions and Recommendations .....</b>	<b>21</b>

10.1	Conclusions.....	21
10.2	Recommendations.....	21

## Tables

Table 2.1:	Site Reference Information.....	4
Table 4.1:	Site Catchment Areas.....	7
Table 4.2:	Pre-Development Greenfield Equivalent Run-Off Rates.....	7
Table 4.3:	Pre-Development Brownfield Discharge Rates.....	8
Table 4.4:	Drainage Hierarchy Review.....	9
Table 4.5:	Indicative Attenuation Requirements.....	10
Table 5.1:	Suitability of SuDS Components.....	12
Table 5.2:	Pollution Hazard Indices.....	14
Table 5.3:	Pollution Mitigation Indices.....	14
Table 7.1:	Proposed Maintenance Schedules for Below Ground Drainage.....	16
Table 7.2:	Pollution Hazard Indices.....	18

## Figures

Figure 2.1:	Site Location.....	4
Figure 2.2:	Site Boundary Plan.....	5
Figure 5.1:	The 4 Pillars of SuDS.....	11
Figure 5.2:	The SuDS Management Train.....	12

## Appendices

Appendix A	<i>Proposed Site Layout</i>
Appendix B	<i>Topographic and Utilities Survey</i>
Appendix C	<i>Thames Water Sewer Records</i>
Appendix D	<i>Greenfield Run-off Calculation</i>
Appendix E	<i>Not Used</i>
Appendix F	<i>Existing Overland Flow Routes and Catchment Plan</i>
Appendix G	<i>Proposed Drainage Strategy General Arrangement</i>
Appendix H	<i>Proposed Overland Flow Routes and Catchment Plan</i>
Appendix I	<i>Proposed Drainage Supporting Calculations</i>

## 1. Introduction

### 1.1 Purpose of The Report

Hydrock have been appointed by Shurgard UK Ltd to provide a Drainage Strategy report in support of proposed development at Shurgard Hampton, TW12 2HR.

This report has been prepared to accompany the detailed planning application for the proposed development as outlined in Section 1.2 below.

### 1.2 Proposed Development

An detailed planning application is being submitted for the demolition of an existing buildings Shurgard Hampton and the construction of an new self-storage facility.

Refer to Appendix A for the proposed site layout.

### 1.3 Scope of The Report

The proposed drainage strategy will be in accordance with both local and national guidelines and will incorporate a 'best practice' approach in reducing the impact of the flooding caused by the new development.

The report is based upon sewer asset information provided by the Thames Water as the sewerage undertaker in relation to public assets within the vicinity of the development site.

The report highlights the key stakeholders in terms of ownership and maintenance to ensure the drainage system is kept well maintained and so reduce the risk of failure. Should the network fail at any point, clearly defined ownership liabilities will ensure that issues can quickly be rectified thereby reducing the potential impact of damage caused by flooding.

### 1.4 Limitations of The Report

This report has been prepared by Hydrock Consultants Ltd on behalf of Shurgard UK Ltd in connection with the scope of the report as described in Section 1.3 above and takes into account the particular instructions and requirements. It is not intended for and should not be relied upon by any third party.

The information received is summarised within this report. In the event that the information is relied upon and is subsequently found to be incorrect, Hydrock Consultants Ltd accepts no responsibility for any direct and/or consequential loss that may occur as a result.

This report cannot be reproduced without Hydrock Consultant's written consent.

### 1.5 References / Design Codes

- » BS EN 752 - Drain and Sewer Systems Outside Buildings.
- » Building Regulations Approved Document Part H - Drainage and Waste Disposal.
- » Water UK Sewerage Sector Guidance.
- » The London Plan (2021)
- » CIRIA C753 - SuDS Manual.
- » DEFRA Non-Statutory Technical Standards for Sustainable Drainage.

## 2. Site Information

### 2.1 Site Location

The application site covers an total area of 0.308hectares. It is located on the existing site's hardstanding yard area within the London borough of Southwark. The site's postcode is TW12 2HR with the approximate centre of the site being at grid reference E 513140 N 169763.

Figures 2.1 and 2.2 following show the site location and boundary respectively.

Table 2.1: Site Reference Information

Site Address	Shurgard Hampton
	74 Oldfield Road Hampton London
<b>Postcode:</b>	TW12 2HR
<b>National Grid Reference</b>	E 513140 N 169763

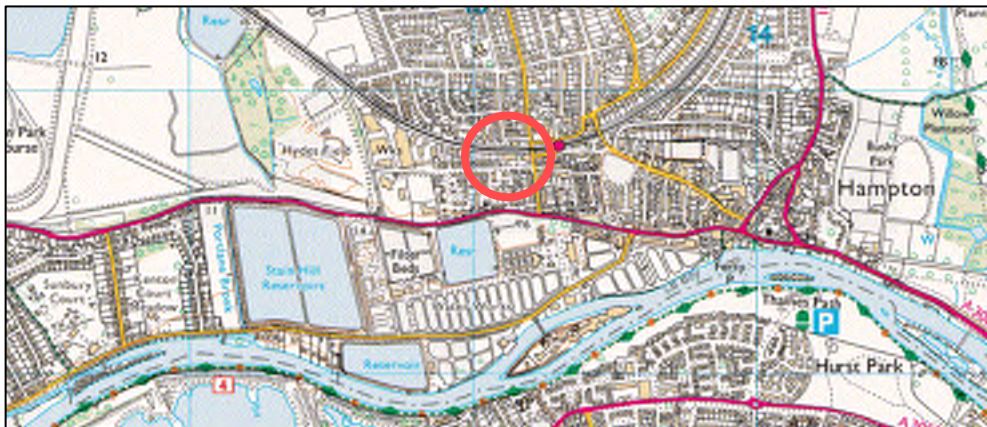


Figure 2.1: Site Location

### 2.2 Existing Site

The site is currently occupied by existing structures and hard-standing and is therefore considered to be brownfield in nature.

### 2.3 Site Topography

A July 2018 survey undertaken by Geographical Engineering Operations shows the site slopes ently towards north eastern corner from 17.3m AOD to 16.7m AOD.



Figure 2.2: Site Boundary Plan

Refer to Appendix B for the topographic and utilities survey.

## 2.4 Geology & Hydrogeology

British Geological Survey (BGS) mapping indicate that the site geology comprises of a London Clay bedrock with superficial layers of Taplow Gravel.

Boreholes by Southeastern Drilling Services from August 2023 show the site has clay ground.

## 2.5 Existing Drainage

### 2.5.1 Watercourse

Environment Agency (EA) maps show the nearest watercourse is the River Thames 600m south.

### 2.5.2 Sewers and Drains

#### 2.5.2.1 Thames Water Sewers

There are Thames Water sewer in Oldfield Road to South of the site. We believe it is 150mm foul water and 225mm surface water.

Refer to Appendix C for the relevant extract from Thames Water sewer records.

#### 2.5.2.2 Private Drains

The topographic and utilities survey identified that the site has existing surface and foul drainage networks that connect to the Thames Water sewer. The current outfall is combined.

The existing private drainage serving the site will be removed to enable the proposed development.

### 3. Flood Risk

The site is at 'low' risk of surface water flooding from all sources.

Refer to flood risk assessment 31569-HYD-XX-XX-RP-WENV-0001.



## 4. Surface Water Management Strategy

### 4.1 Existing Surface Water Drainage Network

A topographic and utilities survey of the site was done in 2023.

The drainage discharges into the Thames Water sewer at many points inside the site.

Refer to Appendix B for the Topographic and Utilities Survey.

### 4.2 Existing and Proposed Development Areas

The table below indicates each catchment type area, pre-development:

Table 4.1: Site Catchment Areas

Catchment	Existing (sqm)	Proposed (sqm)	Difference (%age)
<u>Impermeable</u>			
Building / Roof	1270	1786	+40%
Roads / Hardstanding	1525	841	-45%
Soft Landscaping	325	493	+52%
<b>Total Area</b>	<b>3120</b>	<b>3120</b>	-

Refer to Appendices G and I for the pre and post development catchment plans respectively.

### 4.3 Pre-Development Surface Water Drainage

#### 4.3.1 Greenfield Run-Off Rates

It is a requirement that on new developments consideration is given to limit discharge as close as reasonably practical to the undeveloped greenfield rate, The following table indicates surface water discharge rates if the site was greenfield i.e., not developed:

Table 4.2: Pre-Development Greenfield Equivalent Run-Off Rates

Storm Event	Greenfield Equivalent Run-off (L/s)
1 in 1 AEP	0.78
1 in 30 AEP	2.10
1 in 100 AEP	2.91
Q <sub>BAR</sub>	0.91

Refer to Appendix D for the Greenfield Run-off Calculation.

### 4.3.2 Brownfield Run-Off Rates

A utilities survey found that the site seems to leave the site using a 150mm combined connection heading towards Oldfield Road. The survey did not identify that any form of flow restriction has been installed to limit discharge into the network.

The existing brownfield rate has been based upon the capacity of the existing surface water connection to the Thames Water sewer with no form of flow restriction in place.

The existing discharge rates based upon the results of the site survey are shown in Table 4.4, below.

Table 4.3 Pre-Development Brownfield Discharge Rates

Storm Event	Brownfield Discharge Rate (l/s)
1 in 1 AEP	36.9
1 in 30 AEP	48.6
1 in 100 AEP	48.9

### 4.3.3 Pre-Development Flood Exceedance Flows

Topographical survey information indicates that, should the existing drainage network fail or otherwise have its capacity exceeded, overland flows would follow the site topography and pond above gullies.

Refer to Appendix F for the existing overland flow route plan.

## 4.4 Proposed Surface Water Drainage Strategy

### 4.4.1 Surface Water Discharge Hierarchy

In line with the requirement of the NPPF, Building Regulations Part H, the London Plan Policy SI.13, and local council planning policy, the method of discharging surface water from the site has been considered via a sequential hierarchy.

The following methods of discharging surface water run-off were considered, in order of preference:

1. Interception and reuse via rainwater harvesting;
2. Infiltration to the ground via a soakaway or other percolation system;
3. Attenuate in ponds or open water features;
4. Attenuate in tanks or sealed water features;
5. A natural watercourse, main river, or tidal outfall;
6. A Thames Water surface water sewer;
7. A Thames Water combined water sewer;
8. A Thames Water foul water sewer;
9. A highway drain.

Table 4.4, below, summarises the suitability of each potential discharge method in line with the drainage hierarchy.

Table 4.4: Drainage Hierarchy Review

Method	Reasoning	Suitable for the site
<b>Interception / Reuse</b>	The development is to consist of limited facilities and landscaping meaning that any harvesting system installed will be regularly left idle	X
<b>Infiltration</b>	Due to site constraints, it is not possible achieve the minimum 6m standoff from the site boundary or building foundations for safe infiltration.	X
<b>Attenuation in above ground features</b>	The site layout has not made allowance for the inclusion of above ground attenuation features.	X
<b>Attenuation in below ground features</b>	Surface water will be stored in a geocellular storage tank located underneath the proposed car parking area.	✓
<b>Surface water body</b>	There are no watercourses or drains within or close to the site.	X
<b>Surface Water Sewer</b>	225mm Thames Water sewer in Oldfield Road	✓
<b>Combined Sewer</b>	N/A	X
<b>Foul Water Sewer</b>	N/A	X
<b>Highway Drain</b>	N/A	X

#### 4.4.2 Proposed Discharge Rates

In line with the requirements of the London Plan, Policy SI.13, surface water discharge rates should be restricted to the greenfield run-off rate where possible. On previously developed sites the final discharge rate can be no more than three times the calculated greenfield rate with exceptions for pumped discharge or discharge to tidal waters.

As shown in Section 4.3.1, the greenfield Qbar discharge rate for the site is 0.9 L/s.

It is therefore proposed to restrict discharge rates to 2.0 L/s.

#### 4.4.3 Allowance for Climate Change and Urban Creep

In accordance with EA guidance, an allowance for climate change has been added to the proposed surface water network. As the development work beyond the 2050's, a climate change allowance of 40% is added to the 1 in 100 AEP design storm.

Urban Creep is an additional allowance made to the impermeable catchment of a surface water network to account for potential future increases. As the development proposal is for a self-storage unit and the site is to be over 100% impermeable, no urban creep allowance has been made.

#### 4.4.4 Proposed Surface Water Drainage Strategy

As the proposed development is being submitted as a full planning application, a detailed drainage strategy has been prepared. This strategy demonstrates that the site can be positively drained within national and London requirements.

It is proposed that surface water run-off will be positively drained via a gravity system and attenuated in a below ground geocellular storage tank before being discharged at a restricted rate of 2 L/s for all storm events up to and including the 1 in 100 AEP plus 40% allowance for climate change into the Thames Water sewer using a pump.

#### 4.4.5 Attenuation Storage Requirements

In line with the requirements of the DEFRA Non-Statutory Technical Standards for SuDS, all storm events up to and including the 1 in 30 AEP storm event will be retained within the proposed surface water drainage network and exceedance volumes from all other storm events up to and including the 1 in 100 AEP plus 40% allowance for climate change will be retained within the site and managed to as to minimise the risks to people and property.

Expected attenuation requirements are shown in Table 4.5, below.

Table 4.5: Indicative Attenuation Requirements

Impermeable Area (ha)	Discharge Rate (L/s)	1 in 30 AEP Volume (m <sup>3</sup> )	Additional 1 in 100 AEP +40% CC Volume (m <sup>3</sup> )	Total Attenuation Required (m <sup>3</sup> )
0.263	2.0	61	129	190

Refer to Appendices H and I for the proposed drainage general arrangement and supporting calculations.

#### 4.4.6 Overland Flow Routes

In the event that there is a failure of the surface water drainage network beyond the design storm or through other circumstances, exceedance flows will be kept inside the site.

## 5. Sustainable Drainage Systems

### 5.1 Requirement for Sustainable Drainage Systems

In line with the requirements of the NPPF<sup>1</sup>, the Non-Statutory Technical Standards for SuDS and the London Sustainable Design & Construction SPG<sup>2</sup>, the design of the surface water drainage system should seek to implement and maximise the use of Sustainable Drainage Systems (SuDS) where possible.

This section reviews the suitability and benefits of the various potential SuDS systems for the proposed development.

### 5.2 The SuDS Management Train and 4-Pillars of SuDS

The primary purpose of a SuDS system is to manage surface water run-off within a development via mimicking natural methods, attenuating additional water volume generated by the introduction of impermeable areas whilst providing a degree of water treatment to run-off alongside amenity and biodiversity benefits to the local community. These 4 benefits are defined as the 4-Pillars of SuDS as shown in figure 5.1 below.

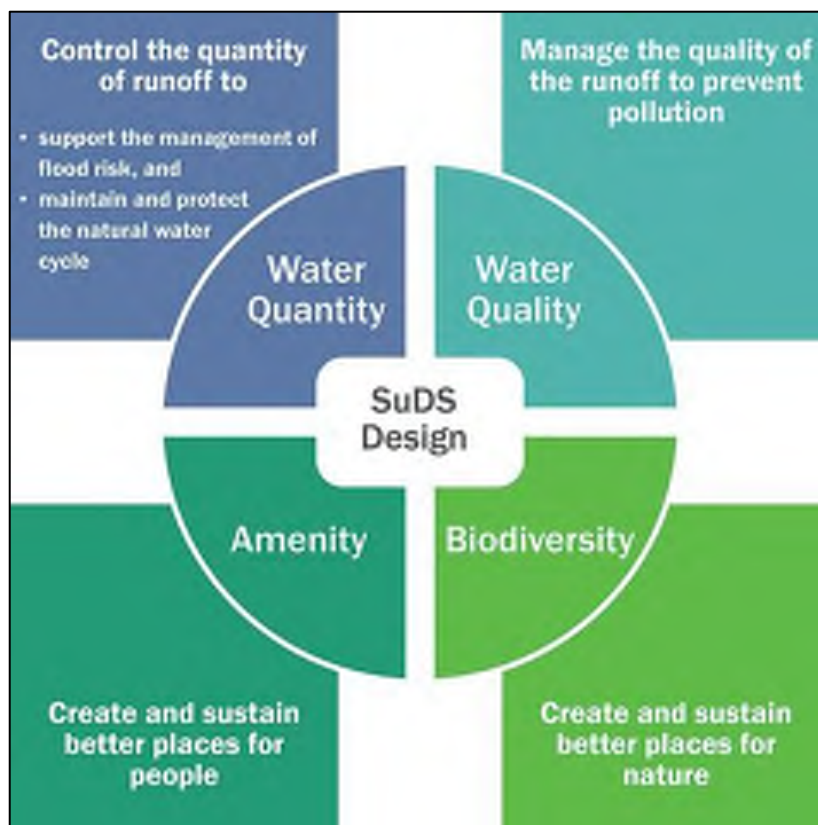


Figure 5.1: The 4 Pillars of SuDS

SuDS are generally implemented following the principle of a management train with systems capturing run-off as early as possible at the source and cascading down into wider site and regional systems. Figure 5.2 below demonstrates how a SuDS management train may be applied to a development.

<sup>1</sup> Paragraph 169

<sup>2</sup> Paragraph 3.4.13

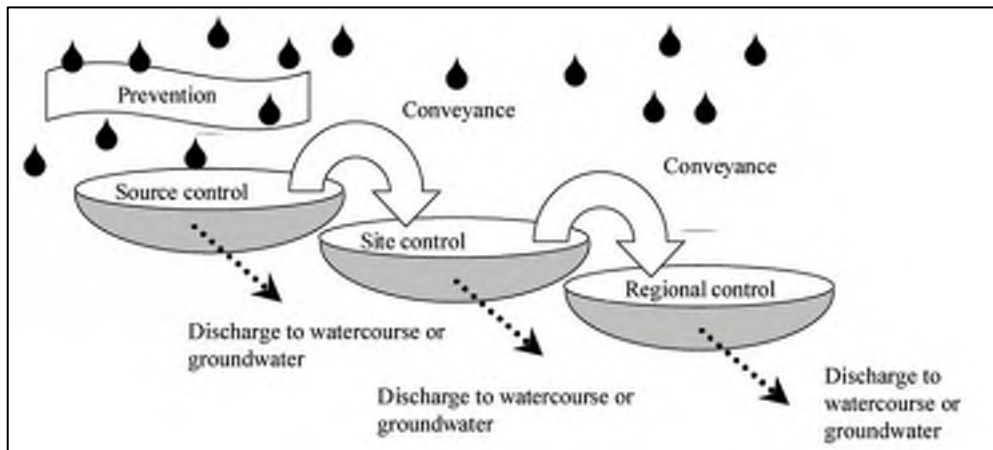


Figure 5.2: The SuDS Management Train

### 5.3 Suitability of SuDS Elements

The drainage design will adopt the principles and philosophy of SuDS as described above taking into the consideration the site context and location. Wherever possible, opportunities to maximise the use of SuDS have been taken. However, the implementation and selection of SuDS techniques is dependent on the site layout and context. Certain SuDS systems may be more appropriate than others in certain situations.

Table 5.1 below reviews the suitability of potential different SuDS systems against the proposed development.

Table 5.1: Suitability of SuDS Components

Hierarchy	System	Description	Site Suitability
Source Control	Green Roofs	Planted roofs that reduce run-off volume and treat pollutants	Suitable for the development
	Rainwater Harvesting	Capture of run-off for reuse as grey water, flushing toilets and irrigation	Not Suitable for the development
	Permeable Surfaces	Surfaces that allow water to penetrate into underlying layers. Can be made to infiltrate to groundwater.	May be Suitable for the development
	Bioretention Areas	Vegetated area with gravel and sand layers to filter and cleanse run-off.	Not Suitable for the development

Hierarchy	System	Description	Site Suitability
Site and Regional Control	Filter Drain	Linear drains or trenches with granular fill. Can be made to infiltrate to groundwater.	Not be suitable for the development
	Swale	Shallow depressions to convey and filter water. May be 'wet' with above ground attenuation or 'dry' with a gravel layer. Can be made to infiltrate to groundwater.	Is not suitable for the development
	Hardscape Storage	Store water above ground within a constructed container. Can be integrated into public realm spaces with an urban character.	Is not suitable for the development
	Pond/Basin	Store and treat water. Ponds have a level of standing water whilst basins are generally dry. Can be made to infiltrate to groundwater.	Is not suitable for the development
	Wetland	Shallow, vegetated water bodies with a varying water level. Can be integrated with natural or hardscape environment.	Is not suitable for the development

## 5.4 Proposed SuDS Principles

As indicated in Table 5.1 above, the use of geocellular storage and permeable surfaces and green roof are considered suitable for the development. Further, there is the potential to include rainwater harvesting, rain gardens and green roofing within the proposed development.

### » Green Roofs

A green/brown roof may be installed on the roof of the new teaching block to provide aesthetic and biodiversity benefits as well as providing source treatment.

### » Permeable Surfaces

Permeable road and parking bays in the new vehicle access would provide source treatment to runoff with the secondary benefit of providing a degree of attenuation in extreme storm events without sacrificing any access capacity.

## 5.5 Water Quality

In line with the 4-Pillars of SuDS, the design should seek to provide an appropriate level of water treatment to effectively mitigate the pollution risk associated with the site and not affect the quality of water downstream.

The proposed development has 2 key drivers of pollutant risks to the receiving sewer system, namely pollution from the new parking areas and building roofs.

As the proposed parking area provides less than 50 spaces and is also less than 800m<sup>2</sup>, it is presenting a low pollution risk to surface water and a petrol/oil interceptor is not needed. Treatment will be provided by SuDS components.

It will be required that any gullies and drainage channels will be fitted with silt traps, and catch pits will be incorporated into the system to reduce the risk of silts/salts entering the network.

Table 26.2 of The SuDS Manual identifies the overall pollution hazard level from the site to be Low. As it is proposed to discharge to surface water, the 'Simple Index Approach' (SIA) as detailed in Box 26.2 of The SuDS Manual has been used.

Step 1 of the SIA is to identify the relevant pollution hazard indices for the proposed development, these are shown in Table 5.2 below.

Table 5.2: Pollution Hazard Indices

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metal	Hydro-carbons
Non-Residential Roofs	Low	0.3	0.2	0.05
Low traffic roads and car parking with infrequent change	Low	0.5	0.4	0.4

Table 26.3 of the SuDS Manual provides various mitigation indices for discharge to surface waters. The mitigation indices for SuDS elements that could be included within the proposed development show in Table 5.3 below.

Table 5.3: Pollution Mitigation Indices

SuDS System	Total Suspended Solids (TSS)	Metal	Hydro-carbons
Permeable Surfaces	0.7	0.6	0.7
Bioretention Areas	0.8	0.8	0.8

The total SuDS mitigation index for each pollutant is a combination of the mitigation index of each proposed SuDS system in the management train. The first element will always be more effective than subsequent elements given that the concentration of pollutants in the runoff decreases.

Equation 5.1: SuDS Mitigation

$$\text{Total SuDS Mitigation} = \text{Mitigation Index}_1 + 0.5(\text{Mitigation Index}_n)$$

Although potential SuDS options have been stated, alternative options may be considered provided that the management train meets or exceeds the water quality requirements.

Provided that the mitigation indices of the various treatment trains meet or exceed the requirements of each pollutant, it is expected that there will be no reduction in the quality of water being discharged into the public sewer network.



## 6. Foul Water Management Strategy

### 6.1 Pre-Development Foul Water Drainage

As described in Section 2.5, initial site investigations and Thames Water sewer records have identified the following:

#### 6.1.1 *Thames Water*

There is a 150mm foul sewer in Oldfields Road.

#### 6.1.2 *Private Drains*

There is existing drains for the current building.

### 6.2 Post-Development Foul Water Drainage

The proposed foul water network will connect all new soil, waste and ventilating pipes, sanitary appliances, and gullies at ground level and discharge into the Thames Water sewer.

It is expected that discharge into the system will be domestic in nature. Any future expansions which will result in the discharge of trade effluent will require a formal application to Thames Water.

It is proposed that the system will drain via gravity and pumped into Thames Water sewer.

The design of all foul sewers and lateral drains must conform to BS EN 752, BS EN 16933, Building Regulations 2010 Part H, planning policy and best practice guidelines wherever applicable. Sanitary systems within building should be designed in accordance with BS EN 12056-2.

Refer to Appendix H for the proposed drainage strategy.

### 6.3 Post-Development Foul Water Flow Rates

Existing drains will not need diverting and will keep using current connections. New foul flows are negligible.

## 7. Ownership and Maintenance Responsibilities

It is anticipated and expected that the future maintenance of the drainage network will be undertaken by Shurgard UK Ltd or a suitably qualified management company.

Both the foul and surface water drainage systems will require regular maintenance to prevent a failure of the system or a reduction in the capacity as designed.

The following tables set out the required maintenance actions and frequency for the various elements of the drainage network.

Table 7.1: Proposed Maintenance Schedules for Below Ground Drainage

Permeable Surfaces		
Maintenance Schedule	Required Action	Frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface).	Annually, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – particular attention should be given to areas where water runs onto pervious surfaces from adjacent impermeable areas.
	Stabilise and mow contributing and adjacent areas.	As required.
Occasional maintenance	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required – annually on less frequently used pavements.
	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving.	As required.
Remedial actions	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required.
	Rehabilitation of surface and upper substructure by remedial sweeping.	Every 10 to 15 years or as required.
	Initial inspection.	Monthly for three months after installation.
Monitoring	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	Every three months, 48 hrs after large storms in first six months.

Inspect silt accumulation rates and establish appropriate brushing frequencies.	Annually.
Monitor inspection chambers.	Annually.

Reference should be made to the manufacturer recommendations where applicable

### Underground Geocellular Tanks

Maintenance Schedule	Required Action	Frequency
<b>Regular maintenance</b>	Inspect and identify any areas that are not operating correctly. If required, take remedial action.	Monthly for 3 months, then annually.
	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly.
	For systems where rainfall infiltrates into the tank from above, check surface or filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary	Annually.
	Remove sediment from pre-treatment structures and / or internal forebays.	Annually, or as required.
<b>Remedial actions</b>	Repair / rehabilitate inlets, outlet, overflows and vents.	As required.
<b>Monitoring</b>	Inspect / check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed.	Annually.
	Survey inside of tank for sediment build-up and remove if necessary.	Every 5 years or as required.

Reference should be made to the manufacturer recommendations where applicable

Other Drainage Items		
Feature	Maintenance	Frequency
Private Drains	Inspection	CCTV survey every 5-10 years.
	Regular Maintenance	Jet clean system fully every 5-10 years. (Recommend prior to CCTV drainage survey).
	Remedial / Occasional Maintenance	Carry out remedial works as identified in CCTV survey.
Discharge orifice manholes/flow control devices	Inspection	Quarterly.
	Regular Maintenance	Remove silt and debris as necessary to prevent build up.
Gully / Drainage Channels	Inspection	Quarterly
	Regular Maintenance	Remove silt and debris as necessary to prevent build up.

An initial risk assessment has been carried out, Table 5.3 below, and a detailed risk assessment should be undertaken at the detailed design stage and passed on to the development operator as part of the Operations and Maintenance Manual during the handover phase of works.

A formal risk review should be undertaken on an annual basis:

Table 7.2: Pollution Hazard Indices

Operation	Risks	Mitigating Measures
Access to manholes for Inspection and Maintenance.	1. Confined spaces	1. Entry to confined space to be minimised and, where unavoidable, to be carried out by appropriately trained personnel
Removal of silt from outfall	1. Risk to members of the public	1. Access to hazardous areas by members of the public to be prohibited. 2. To be carried out by appropriately trained personnel
Removal of silt from drainage channel	1. Risk to members of the public	1. Access to hazardous areas by members of the public to be prohibited

All inspection and maintenance works should take into consideration the implications of 'lone working' and a suitable assessment should be carried out with suitable risk mitigation measures being implemented.

## 8. Residual Risk

Provided that the surface and foul water regimes as set out in Sections 4 and 6, above, is implemented, it is expected that the primary residual failure would be as a result of some form of failure of the site drainage system during the life of the development. Therefore, regular, ongoing maintenance as set out in Section 7, above, will be required to ensure that the capacity of the system is maintained as designed.

In addition, there remains the risk of a storm event beyond that of the 1 in 100 AEP plus 40% allowance for climate change design storm which have not have been explicitly accounted for.

## 9. Consent / Planning

### 9.1 Thames Water

#### 9.1.1 Sewer Connection

Thames Water requires that any connection to the public sewer network is subject to a S106 application.

### 9.2 Lead Local Flood Authority

In addition to the above, the LLFA is a statutory consultee for planning applications with regards to flood risk and drainage. It is therefore expected that the Local Planning Authority will consult with the LLFA and seek comments.

### 9.3 Network Rail

The site is close to Network Rail train tracks.

## 10. Conclusions and Recommendations

### 10.1 Conclusions

This report has been produced to develop a surface and foul water drainage strategy in support of the detailed planning application for the extension. It has concluded the following conclusions:

1. Surface water is discharged at 2 l/s
2. 190m<sup>3</sup> of attenuation storage is needed
3. There is a very small foul water discharge.
4. SuDS are to be green roof and porous paving.
5. Surface and foul water will be pumped into Thames Water sewers.

### 10.2 Recommendations

Based on the above conclusions, the following recommendations are made:

1. Site levels design is mindful of surface water flows
2. Site levels do not let water flow or pond inside the building or leave the site
3. Invert levels of Thames Water sewers are confirmed
4. S106 applications to be submitted to Thames Water for direction connection discharging into their asset.

# Appendix A

## *Proposed Site Layout*



All levels and dimensions to be checked on site prior to construction / fabrication; report discrepancies immediately. Do not scale dimensions from this drawings. This drawing is copyright protected.

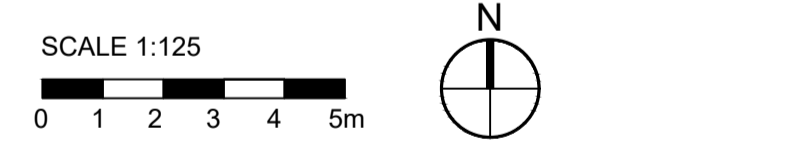
REVISION



Sub Sta

- Visitor Parking:  
2 x Car space  
(1 of which is Accessible)
- Customer Parking:  
7 x Car space  
(2 of which are Electrical Charge points)
- Staff Parking:  
1 x Car space
- Electrical Car "Twin" charging point
- Bicycle Parking:  
1 short stay Cargo Bikes  
5 short stay - standard  
20 long stay - of which 1 is cargo
- Refuse Requirement = 0.1 sqm  
Actual Refuse Store = 11m<sup>2</sup>
- Landscaping zone = 493m<sup>2</sup>

Site Boundary = 3094 m<sup>2</sup>



**PLANNING**

SCALE	DATE	DRAWN	CHECKED
1:125@A1	FEB'24	AF	

PROJECT  
**SHURGARD UK**  
 OLDFIELD ROAD, HAMPTON  
 TW12 2HR

DRAWING  
 Site Plan  
 As Proposed

**Threesixty Architecture**  
 10 MONTROSE STREET  
 GLASGOW  
 G1 1RE  
 0141 229 7575  
 www.360architecture.com

DRAWING No.  
**23053GA\_D\_002**

OLDFIELD ROAD

# Appendix B

## *Topographic and Utilities Survey*

**DISCLAIMER**

At GEO UK LTD we use skilled and experienced staff, modern up to date techniques and top of the range electromagnetic and radar technology to locate and trace sub surface utilities. However the performance of the equipment employed in non-invasive surveys can be adversely affected by factors outside the control of GEO UK LTD. Therefore GEO UK LTD cannot guarantee that all utilities present or likely to be located. It is the responsibility of the Client to consult regional authority records and conduct their own investigations.

Where similar services run close proximity it may be impossible to separately trace individual services as the trace signal can experience interference in such cases, services will therefore be single, unidentified line. The displayed depth will refer to the shallowest detected utility.

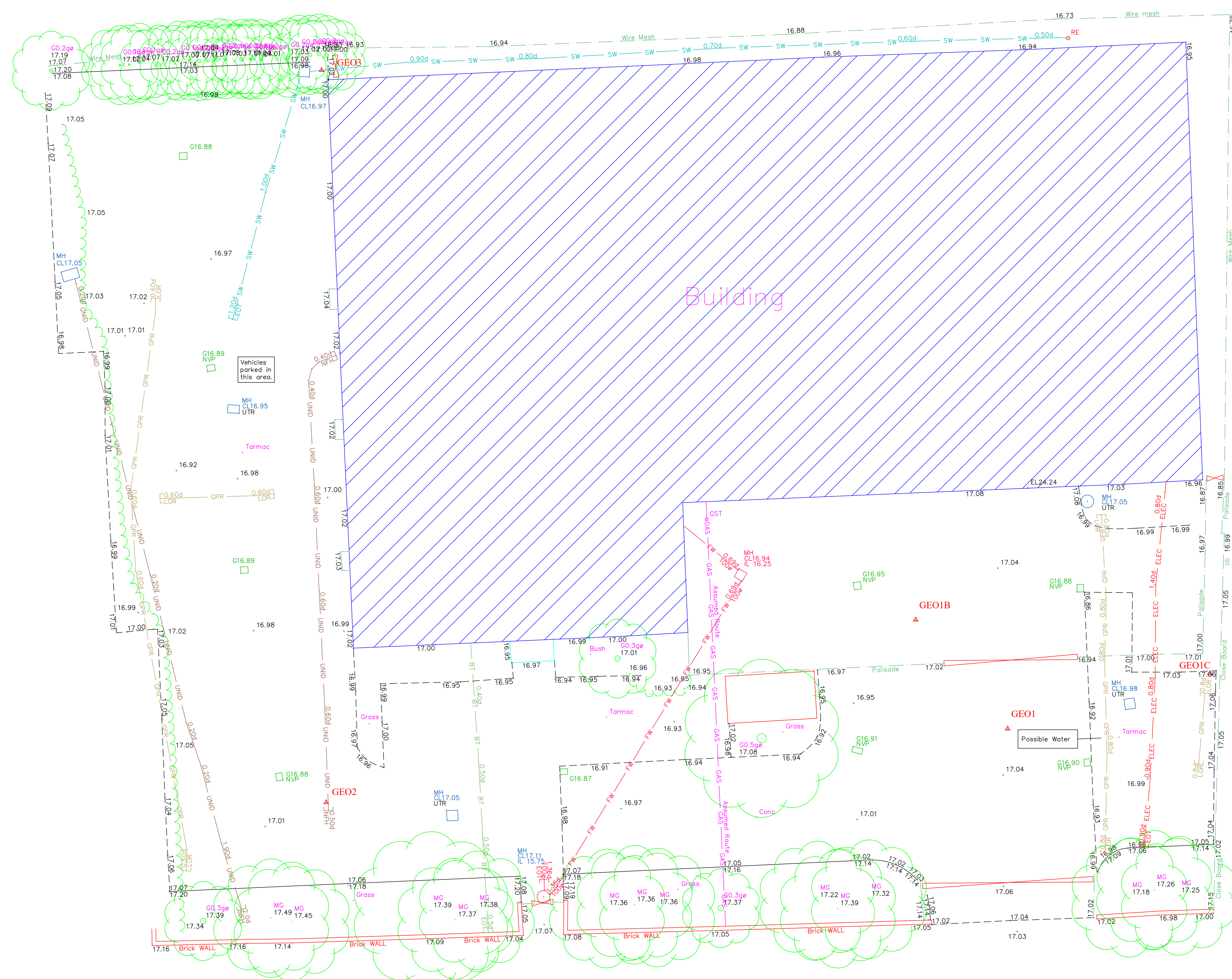
Successful tracing of non-conductive materials may be limited. Drainage gullies are one tested where possible to prove connectivity but it is not always possible to introduce the probe due to narrow clearances and/or accumulated silt.

Depth information of underground services/features are generally accurate to within +/- 10% (i.e. a pipe of 2m depth may be located to +/- 200mm) but this cannot be guaranteed. Depth shown usually refers to the top of the service. Clearly severe and sharp depths are usually to invert (base of drainage channel) unless otherwise stated.

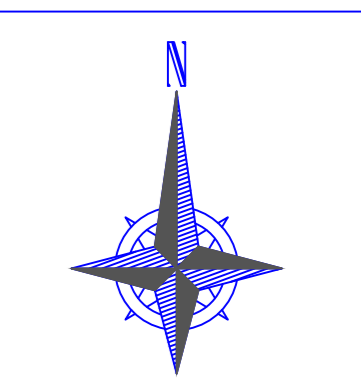
Some above ground features may have been observed at time of survey. It is not always possible to generate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or equipment/ground.

Existing record information that was made available to GEO UK LTD by the Client or by the relevant utility provider should be regarded only as an indication and cannot be guaranteed.

Excavation in the vicinity of services shown should be carried out with due diligence (see report).



© GEO UK LTD 2023  
 Reproduction in whole or in part by any means is prohibited without the prior permission of GEO UK LTD.



File Name: G2457 - Chelsea Road Hampton Topographic Utility Survey New.dwg

**LEGEND**

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

**FROM STATUTORY AUTHORITIES PLANS**

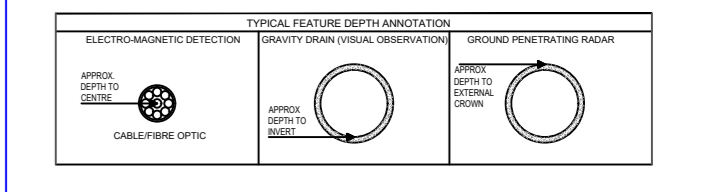
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

**LEGEND**

As shown to OS (Newark) Datum. Established using network RTK. All reference to a given point are given as absolute National Grid.

Services shown as 'From Statutory Authority Plans' (the data are taken from Statutory Records plans supplied by the relevant regional authority. These services were not located and are shown for reference purposes only).

Survey Control markers established for mapping purposes only and should not be used for construction without the written approval of GEO UK LTD.



**DISCLAIMER**

At GEO UK LTD we use skilled and experienced staff, modern up to date techniques and top of the range electromagnetic and radar technology to locate and trace sub surface utilities. However the performance of the equipment employed in non-invasive surveys can be adversely affected by factors outside the control of GEO UK LTD. Therefore GEO UK LTD cannot guarantee that all utilities present or likely to be located. It is the responsibility of the Client to consult regional authority records and conduct their own investigations.

Where similar services run close proximity it may be impossible to separately trace individual services as the trace signal can experience interference in such cases, services will therefore be single, unidentified line. The displayed depth will refer to the shallowest detected utility.

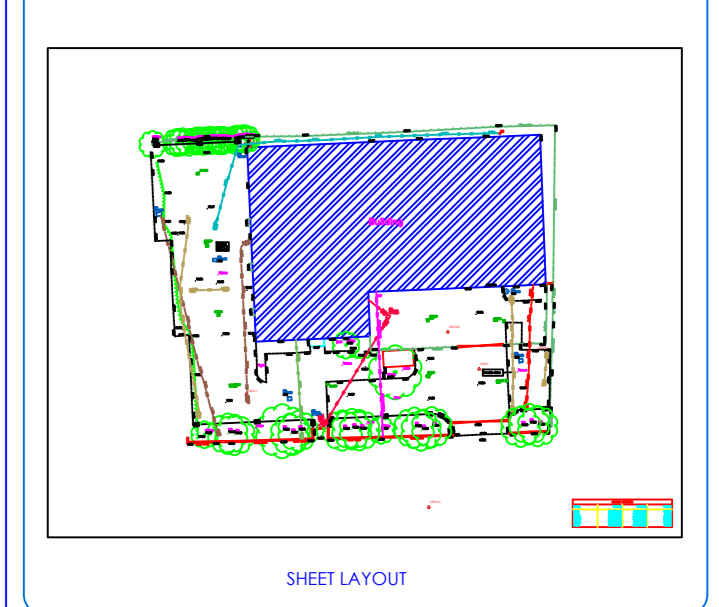
Successful tracing of non-conductive materials may be limited. Drainage gullies are one tested where possible to prove connectivity but it is not always possible to introduce the probe due to narrow clearances and/or accumulated silt.

Depth information of underground services/features are generally accurate to within +/- 10% (i.e. a pipe of 2m depth may be located to +/- 200mm) but this cannot be guaranteed. Depth shown usually refers to the top of the service. Clearly severe and sharp depths are usually to invert (base of drainage channel) unless otherwise stated.

Some above ground features may have been observed at time of survey. It is not always possible to generate the Ground Penetrating Radar in areas including, but not limited to, dense vegetation, rubble, debris and/or equipment/ground.

Existing record information that was made available to GEO UK LTD by the Client or by the relevant utility provider should be regarded only as an indication and cannot be guaranteed.

Excavation in the vicinity of services shown should be carried out with due diligence (see report).



REV DATE DESCRIPTION

--	--	--



**Client**  
 Brownfield Solutions LTD  
 William Smith House  
 175-183 Wilton Street  
 Northwich  
 Cheshire  
 CW9 5LP

**Project Title**  
 Utility Survey of Land at:  
 Chelsea Road  
 Hampton  
 TW12 2HR

SURVEY STATIONS			
Name	Easting	Northing	Height
GEO1	513153.822	169741.716	17.043
GEO2	513116.349	169737.659	17.011
GEO1B	513148.767	169747.703	17.002
GEO1C	513164.944	169744.749	17.059
GEO1A	513149.704	169719.456	17.033
GEO3	513116.095	169777.929	16.991

Surveyed	Drawn	Checked
DHLM	JAS	GEO UK LTD
Scale 1:100	Date JUL 23	Drawing Ref. G2457
No. 01	Sta AO	Rev --

# Appendix C

## *Thames Water Sewer Records*

SearchFlow Limited  
42  
Kings Hill Avenue  
Kings Hill  
West Malling  
ME19 4AJKent

Search address supplied	Hilton Banks Ltd, Floor:Not applicable, 74, Oldfield Road, HAMPTON, TW12 2HR
Your reference	SHU001/0041
Our reference	CDWS/CDWS Standard/2023_4846311
Received date	21 June 2023
Search date	21 June 2023

### Keeping you up-to-date

#### Notification of Price Changes

From 1st April 2023 Thames Water property Searches will be increasing the price of it CON29DW, CommercialDW Drainage & Water Enquiries and Asset Location Searches.

Historically cost would rise in line with RPI but as this currently sits at 14.2%, we are capping it at 10%. Customer will be emailed with the new price by January 1st 2023. Any orders received with higher payments prior to 1st April 2023 will be non-refundable. For further details on the price increase please visit our website at [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



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



[searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)  
[www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



0800 009 4540

Question	Summary Answer
----------	----------------

**Maps**

1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map Provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map Provided

**Drainage**

2.1	Does foul water from the property drain to a public sewer?	Connected
2.2	Does surface water from the property drain to a public sewer?	Connected
2.3	Is a surface water drainage charge payable?	See Details
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	No
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	Yes
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building, which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?	Not At Risk
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	3.576 Kilometres

**Water**

3.1	Is the property connected to mains water supply?	Connected
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	Yes
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	HARD
3.6	Is there a meter installed at this property?	Yes
3.7	Please include details of the location of any water meter serving the property.	See Details

Question	Summary Answer
----------	----------------

**Charging**

<b>4.1.1</b>	Who is responsible for providing the sewerage services for the property?	Thames Water
--------------	--	--------------

<b>4.1.2</b>	Who is responsible for providing the water services for the property?	Thames Water
--------------	---	--------------

<b>4.2</b>	Who bills the property for sewerage services?	See Details
------------	---	-------------

<b>4.3</b>	Who bills the property for water services?	See Details
------------	--	-------------

**Trade Effluent**

<b>5.1</b>	Is there a consent, on this property, to discharge Trade Effluent under S118 of the Water Industry Act(1991) into the public sewerage system?	No
------------	---	----

**Wayleaves, Easements, Manhole Cover and Invert levels**

<b>6.1</b>	Is there a wayleave/easement agreement giving Thames Water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?	Yes
------------	--	-----

<b>6.2</b>	On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available .	See Details
------------	--	-------------

**Search address supplied:** Hilton Banks Ltd, Floor:Not applicable, 74, Oldfield Road, HAMPTON, TW12 2HR

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website [www.thameswater.co.uk](http://www.thameswater.co.uk) and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the map of public sewers, the map of waterworks, water and sewer billing records, adoption of public sewer records, building over public sewer records, the register of properties subject to internal foul flooding, the register of properties subject to poor water pressure and the drinking water register. Thames Water Utilities Ltd (TWUL) holds all of these.

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) any negligent or incorrect recording of that interpretation in the search report
- (iv) and compensation payments



## Maps

### **1.1 Where relevant, please include a copy of an extract from the public sewer map.**

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

### **1.2 Where relevant, please include a copy of an extract from the map of waterworks.**

A copy of an extract of the map of waterworks is included, showing water mains, resource mains or discharge pipes in the vicinity of the property.

## Drainage

### **2.1 Does foul water from the property drain to a public sewer?**

Records indicate that foul water from the property drains to a public sewer.

### **2.2 Does surface water from the property drain to a public sewer?**

Records indicate that surface water from the property drains to a public sewer.

### **2.3 Is a surface water drainage charge payable?**

Records indicate that a surface water charge is applicable at this property.

### **2.4 Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundary of the property?**

The public sewer map indicates that there are no public sewers, disposal mains or lateral drains within the boundaries of the property. However, from the 1st October 2011 there may be lateral drains and/or public sewers which are not recorded on the public sewer map but which may prevent or restrict development of the property.

#### **2.4.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?**

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

### **2.5 Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?**

The public sewer map included indicates that there is a public sewer within 30.48 metres (100 feet) of a building within the property.

#### **2.5.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?**

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

**2.6 Are any sewers or lateral drains serving, or which are proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?**

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

**2.7 Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?**

There are no records in relation to any approval or consultation about plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

**2.8 Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?**

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership It is therefore possible that a property may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

**2.9 Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.**

The nearest sewage treatment works is Esher STW which is 3.576 kilometres to the south of the property.

**Water**

**3.1 Is the property connected to mains water supply?**

Records indicate that the property is connected to mains water supply.

**3.2 Are there any water mains, resource mains or discharge pipes within the boundary of the property?**

The map of waterworks indicates that there are water mains, resource mains or discharge pipes within the boundaries of the property.

**3.3 Is any water main or service pipe serving, or which is proposed to serve, the property the subject of an existing adoption agreement or an application for such an agreement?**

Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

**3.4 Is the property at risk of receiving low water pressure or flow?**

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

**3.5 What is the classification of the water supply for the property?**

The water supplied to the property has an average water hardness of 111.4mg/l calcium which is defined as HARD by ThamesWater.

**3.6 Is there a meter installed at this property?**

Records indicate that there is a meter installed at this property.

**3.7 Please include details of the location of any water meter serving the property.**

Records indicate that the property is served by a water meter, which is located within the property.

## Charging

**4.1.1 – Who is responsible for providing the sewerage services for the property?**

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

**4.1.2 – Who is responsible for providing the water services for the property?**

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the water undertaker for the area.

**4.2 Who bills the property for sewerage services?**

If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit [www.open-water.org.uk](http://www.open-water.org.uk)

**4.3 Who bills the property for water services?**

If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit [www.open-water.org.uk](http://www.open-water.org.uk)

### Trade Effluent

**5.1 Is there a consent, on this property, to discharge Trade Effluent under S118 of the water Industry act (1991) into the public sewerage systems?**

No.

### Wayleaves, Easements, Manhole Cover and Invert levels

**6.1 Is there a wayleave/easement agreement giving Thames water the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?**

Yes, records indicate that there is a wayleave and/or an easement affecting this site. Please note that if you require further information about wayleaves and/or easements, these enquiries cannot be dealt with over the phone. To request more details about the wayleave and/or an easement please email [TWPROPERTYRECORDS@thameswater.co.uk](mailto:TWPROPERTYRECORDS@thameswater.co.uk). Please include a boundary plan which clearly shows the site boundary along with a copy of this search result. Failure to include the plan and copy of this search result may delay the response. Alternatively you may write to: Thames Water Property, 1st Floor West, Clearwater Court, Vastern Road, Reading, Berkshire, RG1 8DB, however email is preferred. We endeavour to respond within 20 working days.

**6.2 On the copy extract from the public sewer map, please show manhole cover, depth, and invert levels where the information is available.**

Details of any manhole cover and invert levels applicable to this site are enclosed.

### Payment for this Search

**The charge will be added to the NLIS Account. This search was ordered through National Land Information Services, Russell Square House, 10-12 Russell Square, London WC1B 5LF.**

**CommercialDW Drainage and Water Enquiry Sewer Map- CDWS/CDWS Standard/2023 4846311**



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.

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 no survey information is available.











Manhole Reference	Manhole Cover Level	Manhole Invert Level
071D	n/a	n/a
1805	17.01	n/a
081D	n/a	n/a
081G	n/a	n/a
081A	n/a	n/a
081F	n/a	n/a
181A	n/a	n/a
1807	15.24	n/a
18YZ	n/a	n/a
18ZQ	n/a	n/a
18VW	n/a	n/a
18VX	n/a	n/a
18VY	n/a	n/a
18VZ	n/a	n/a
18WP	n/a	n/a
18WQ	n/a	n/a
18WR	n/a	n/a
18WS	n/a	n/a
18WT	n/a	n/a
18WV	n/a	n/a
18VT	n/a	n/a
18VV	n/a	n/a
18VS	n/a	n/a
18VR	n/a	n/a
181C	n/a	n/a
181B	n/a	n/a
26ZQ	n/a	n/a
26ZP	n/a	n/a
26YZ	n/a	n/a
26YY	n/a	n/a
26YX	n/a	n/a
26YV	n/a	n/a
27YY	n/a	n/a
17ZY	n/a	n/a
27YX	n/a	n/a
071C	n/a	n/a
27YQ	n/a	n/a
171E	n/a	n/a
171C	n/a	n/a
171D	n/a	n/a
1701	n/a	n/a
2704	n/a	n/a
2701	n/a	n/a
1802	16.96	n/a
2801	16.8	15.05
2803	16.8	12.33
1804	n/a	n/a
1801	17.03	15.01
1803	n/a	n/a
081C	n/a	n/a
0802	16.92	n/a
0803	16.97	n/a
0703	16.89	n/a
0704	16.94	n/a
0807	n/a	n/a
0804	16.89	n/a
0801	16.97	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.









# Con29DW Commercial Drainage and Water 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, paths 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**
-  **Four 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**
-  **Man 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 Characteristics Indicator**
-  **Public / Private Pumping Station**
-  **Invert Level**
-  **Summit**

## Areas

Lines denoting areas of underground surveys, etc.

-  **Agreement**
-  **Chamber**
-  **Operational Site**

## Ducts or Crossings

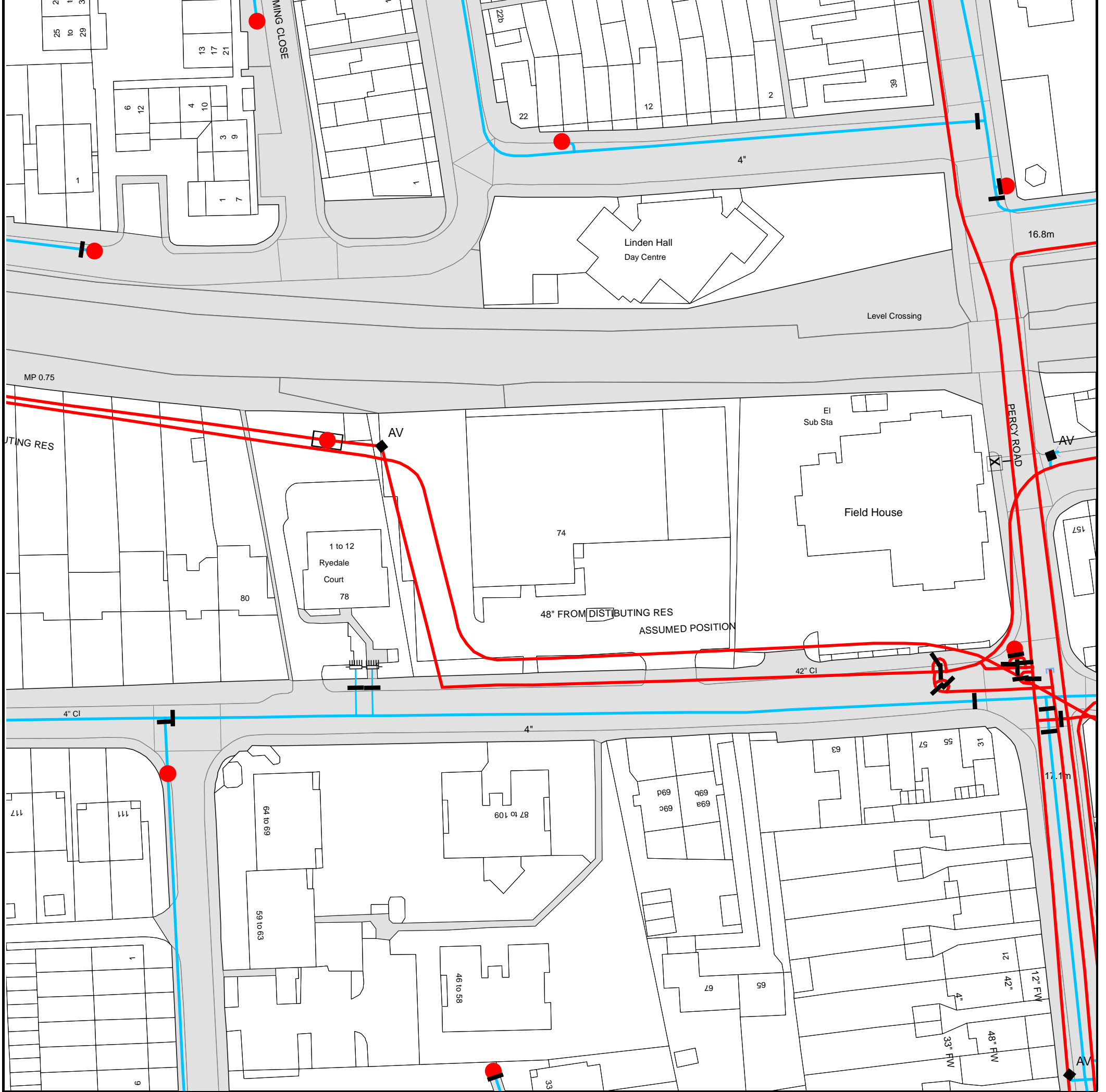
-  **Casement**
  -  **Conduit Bridge**
  -  **Subway**
  -  **Tunnel**
- Ducts may contain high voltage cables. Please check with Thames Water.

### 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 flags (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) 'In' or 'O' 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 509 4540.

CommercialDW Drainage and Water Enquiry Water Map-CDWS/CDWS Standard/2023\_4846311



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.

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