

**FLOOD RISK ASSESSMENT & SUDS REPORT FOR
DERWEN, COMPTON AVENUE, HORNSEY, LONDON,
N6 4LH**

DOCUMENT NUMBER: C3784-R1-REV-A

PREPARED BY



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1. SITE DETAILS

Site Name	Derwen
Site Address	Derwen, Compton Avenue, Hornsey, London, N6 4LH
Purpose of Development	Residential
Existing Land Use	Brownfield
Country	England
Local Planning Authority	London Borough of Haringey

1.1. Site Location

The location of the project site is found on the location plan provided in Appendix A.

1.2. Existing Site Description and Topography

The existing site plan has been included in Appendix A and shows the existing property to be extended.

1.3. Geology of The Area

According to the British Geological Survey, the superficial deposits at the site are unknown. The bedrock at the site is of the Bagshot Formation, consisting of sand, as shown in Figure 1, overleaf.

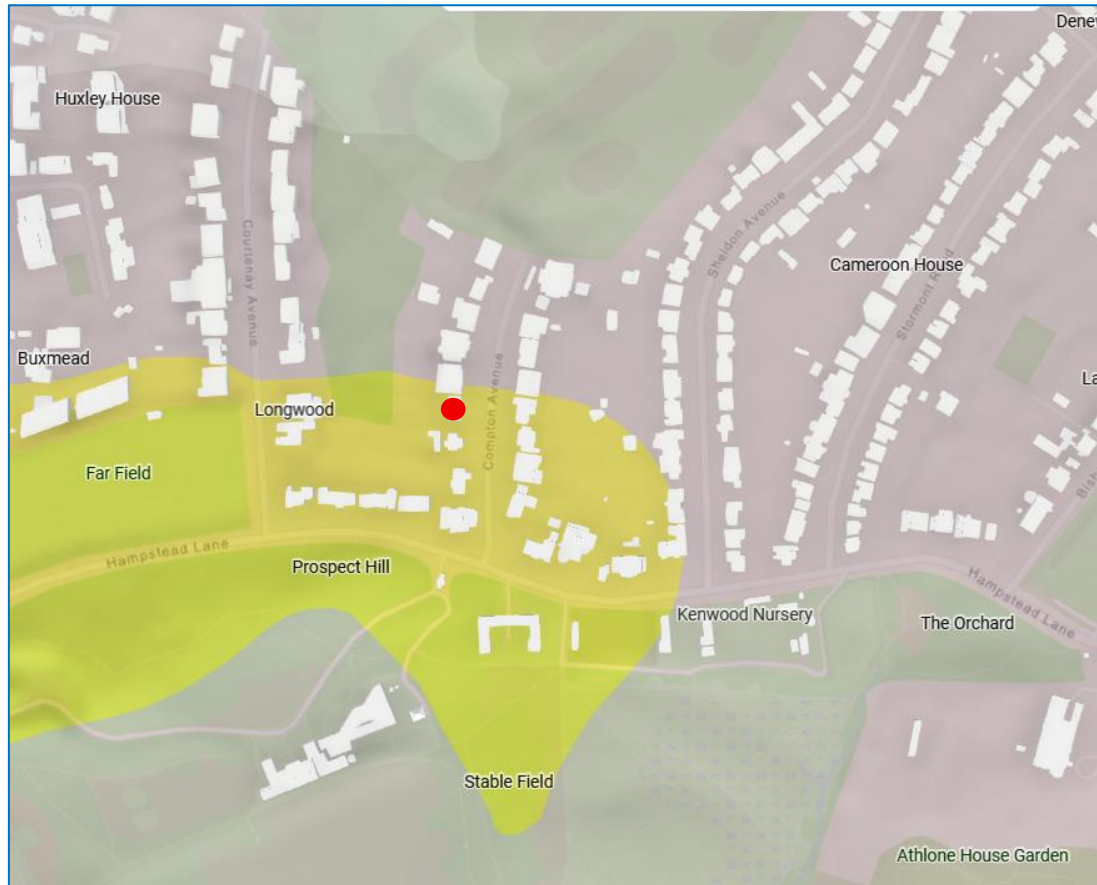


*Figure 1- Bedrock at the site. (Source: British Geological Society Website
(contains British Geological Survey) [2026]*

1.4. Proposed Development

The proposed development consists of the retention and modifications to the front and side facades, the erection of a two-storey rear extension, extended crown roof to include attic accommodation, and a new basement construction beneath the property with associated landscaping works.

2. PLANNING POLICIES

1.1 National Planning Policies

The report has been written in conjunction with the following national planning policies:

- National Planning Policy Framework (December 2024)
- National Planning Practice Guidance Suite (August 2022)
- CIRIA SuDS Manual C753

2.1. Local Planning Policy

This report has been written in conjunction with the following local planning policies:

- Local Flood Risk Management Strategy Report for London Borough of Haringey.
- SFRA Level 1 for London Borough of Haringey.
- The London Plan, Policy SI. 12, which states:

A Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authorities, developers, and infrastructure providers.

- B Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.
- C Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.
- D Developments Plans and development proposals should contribute to the delivery of the measures set out in Thames Estuary 2100 Plan. The mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for the new Thames Barrier.
- E Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.
- F Development proposals adjacent to flood defenses will be required to protect the integrity of flood defenses and allow access for future maintenance and

upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defenses to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.

G Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.

- The London Plan, Policy SI 13 Sustainable drainage, which states:

A Lead Local Flood Authorities should identify – through their Local Flood Risk Management Strategies and Surface Water Management Plans – areas where there are particular surface water management issues and aim to reduce these risks. Increases in surface water run-off outside these areas also need to be identified and addressed.

B Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:

1. Rainwater uses as a resource (for example rainwater harvesting, blue roofs for irrigation)

2. Rainwater infiltration to ground at or close to source.
 3. Rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
 4. Rainwater discharge direct to a watercourse (unless not appropriate)
 5. Controlled rainwater discharge to a surface water sewer or drain.
 6. Controlled rainwater discharge to a combined sewer.
- C Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.
- D Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality, and enhanced biodiversity, urban greening, amenity, and recreation.

3. FLOOD RISK

The probable causes of flooding set out in NPPF are considered in this section in relation to flood risk to the site itself and the effects of the development of the site on the flood risk elsewhere.

3.1. Flood Zones

The Environment Agency has developed a flood risk map, shown below which shows the relative risk of flooding for different return periods. Flood zones assume that no defenses are present and so where these do exist, they are only indicative of the potential for flooding.

The development lies within flood zone 1 of the Environment Agency's Flood risk map, as shown overleaf. Land located within flood zone 1 is at low risk of flooding, having an associated annual probability of less than 1 in 1000.

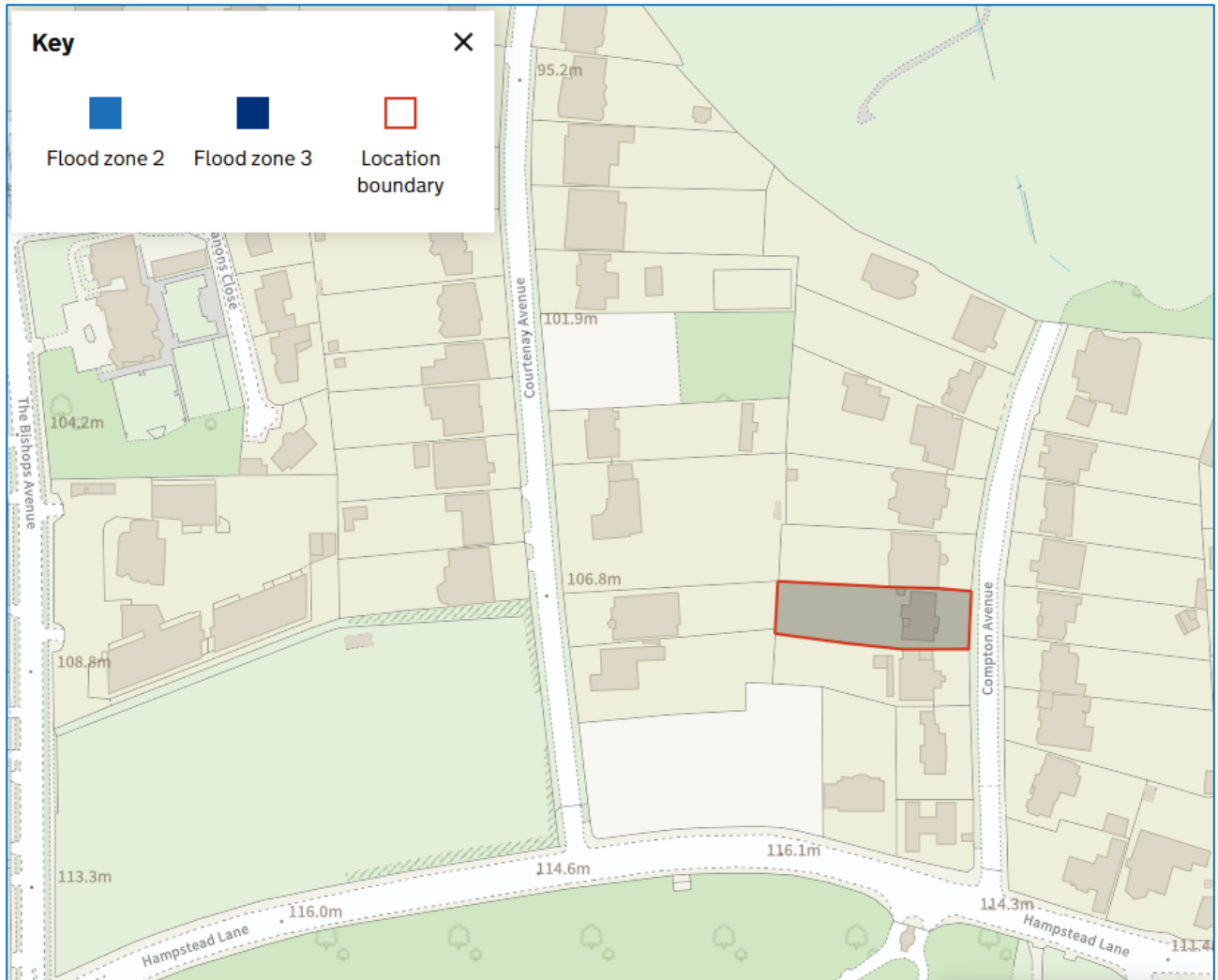


Figure 2 – Environment Agency Flood Map for the proposed development.

As be seen, the site is located within Flood zone 1, and in accordance with Table 1 from the NPPF's technical guidance, land within Flood zone 1 is suitable for any use.

Assessment of this site has been based upon the Environment Agency's flood map, the existing site plan, and the architect's proposed development layout.

Table 1: NPPF Flood Zone Guidance

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
Zone 1 Low Probability	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (0.1%<).	All uses of land are appropriate in this zone.	For development proposals on sites compromising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through addition of hard surfaces and the effect of new development on surface water run-off should be incorporated in an FRA. This need only be brief unless the factors above or other considerations require particular attention. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of development, and the appropriate application sustainable drainage techniques.
Zone 2 Medium Probability	This zone comprises land assessed as having between a 1 in 1000 annual probability of river flooding (1% -	The water-compatible less vulnerable and more vulnerable uses of land and essential infrastructure in	All development proposals should be accompanied by an FRA. See Annex E for minimum requirements.	In this zone developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area through the layout of form

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year	Table D 2 are appropriate in this zone. The infrastructure in Table D.2 is appropriate in this zone. Subject to the sequential Test being applied the highly vulnerable uses in Table D.2 are. only appropriate in this zone if the exception Test (see para. D.9) is passed.		and development, and the appropriate application of sustainable drainage techniques.
Zone 3a High Probability	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 greater annual probability of flooding from sea (>0.5%) in any year.	The water compatible and less vulnerable uses of land in Table D.2 are appropriate in this Zone. The highly vulnerable uses in Table D.2 should not be permitted in this zone. The more vulnerable and essential infrastructure uses in D.2 should only be permitted in this zone if the Exception Test (see para. D.9) is passed	All development proposals in this zone should be accompanied by an FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: i. reduces the overall level of flood risk in the area through the layout and form of the development and appropriate application of sustainable drainage techniques. ii. relocate existing development to land in zones with a lower probability of flooding; and iii. create space for flooding to occur by restoring functional floodplain and flood pathways

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
		Infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.		and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b The Functional Flood Plan	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual probability of 1 in 20 (5%) or greater in any	Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted in this zone. It should be designed and constructed to: • remain operational and safe for users in times of flood. • result in no net loss of floodplain storage. • not impede water flows; and • not increase flood risk elsewhere • Essential infrastructure in this zone should pass the Exception Test.	All development proposals in this zone should be accompanied by an FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: - reduces the overall level of flood risk area through the layout and form of the development and appropriate application of sustainable drainage techniques; and - relocate existing developments to land with a lower probability of flooding.

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	year or is designed to flood in an extreme (0.1%) flood should provide a starting point for consideration and discussions to identify the functional floodplain.			

3.2. Flood Vulnerability

Table 2 below, which has been extracted from NPPF's technical guidance, highlights the flood risk vulnerability of various developments. This information is based partly on DEFRA/Environment Agency research and 'Flood Risks to People' (FD2321/Tr2) and also on the need of some uses to keep functioning during flooding.

Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.

The impact of a flood on a particular use identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore. The flood risk management infrastructure and risk mitigation measures needed ensure the development may differ between uses within a particular vulnerability classification.

Table 2: NPPF's Flood Risk Vulnerability Classification

Essential Infrastructure	Essential transport infrastructure and strategic utility infrastructure, including electricity generating stations and grinds and primary substations.
Highly Vulnerable	- Police, Ambulance and Fire stations and command centers, and telecommunications installations and emergency disposal points. - Basement Dwellings, caravans, mobile homes, and park homes intended for permanent residential use. - Installations requiring hazardous substance consent.
More Vulnerable	- Hospitals, residential institutions such as care homes, children's homes, social services homes, prisons, and hostels. - Buildings used for dwelling house, student halls of residence, drinking establishments, nightclubs, hotels, and sites used for holiday or short-let caravans and camping. - Non-residential uses for health service, nurseries, and education.

	Landfill and waste management facilities for hazardous waste.
Less Vulnerable	- Buildings used for shops, financial, professional, and other services, restaurants and cafes, offices, industry, storage, distribution, assembly, and leisure. - Land and buildings used for agriculture and forestry. - Waste treatment (except landfill and hazardous waste facilities), mineral workings and processing (except for sand and gravel). - Water treatment plants and sewerage treatment plans (if adequate pollution control measures are in place.)
Water-compatible Development	- Flood control infrastructure, water transmission infrastructure and pumping stations. - Sewerage transmission infrastructure and pumping stations. - Sand and Gravel workings. - Docks, marinas and wharves, navigational facilities. - MOD defense installations - Ship building, repairing, and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. - Water-based recreation (excluding sleeping accommodation) - Lifeguard and coastguard stations. - Amenity open space, nature conservation and sports recreation. - Essential sleeping or residential accommodation for staff required by users in this category, subject to a warning and evacuation plan.

From the flood risk vulnerability classification table above, taken from the NPPF's technical Guidance, Buildings used for dwelling houses come within the 'more vulnerable' classification. However, based on the Environmental Agencies flood map, the development site is located within Flood Zone 1 and in accordance with Table 3, above is therefore suitable for any development. Furthermore, neither a sequential nor exception test is required as a part of this Flood Risk Assessment.

Table 3: NPPF's Flood Risk Vulnerability and Flood Zone Compatibility

Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone 1	✓	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception Test	✓	✓
Flood Zone 3a	Exception Test	✓	X	Exception Test	✓
Flood Zone 3b	Exception Test	✓	X	X	X

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

4. FLOOD RISK ASSESSMENT

The probable causes of flooding set out in NPPF's technical guidance are considered in this section in relation to the flood risk to the site itself and the effects of the development of the site on flood risk elsewhere.

4.1. Fluvial or Tidal Flooding

There are no main rivers adjacent to the site, therefore, there is no risk of flooding to the proposed development site from fluvial flooding.

The site is also not at risk of tidal flooding, this can also be confirmed by the Environment Agency's Flood map in Section 3.1.

4.2. Flooding from Land (Overland Flow)

The majority of the proposed development site is at a very low risk of surface water flooding, this can also be confirmed by the Environment Agency's Flood map shown overleaf:

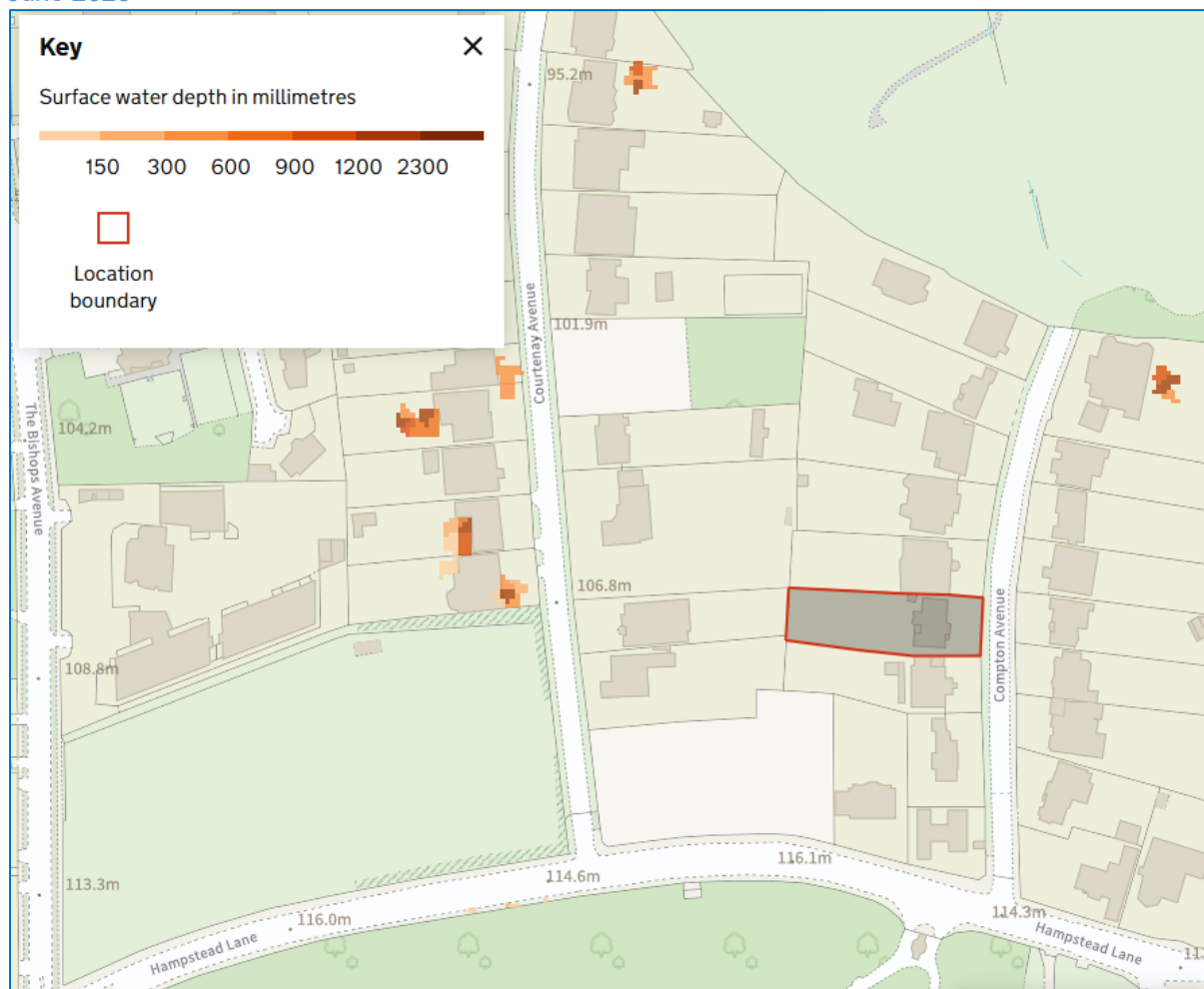


Figure 3 – Environment Agency Flood Map (from surface water) for the proposed development, 1 in 30-year storm event

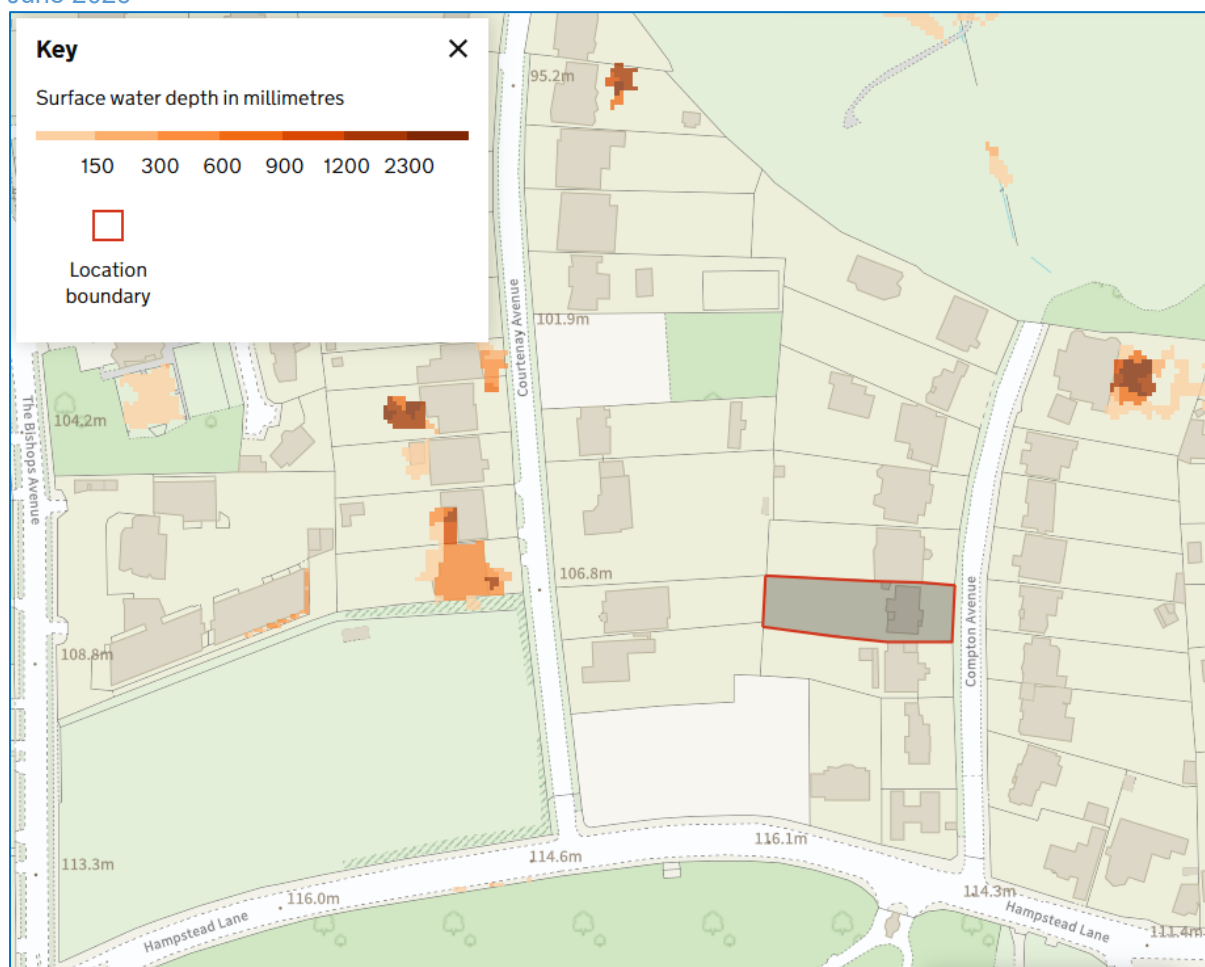


Figure 4 – Environment Agency Flood Map (from surface water) for the proposed development, 1 in 100-year storm event

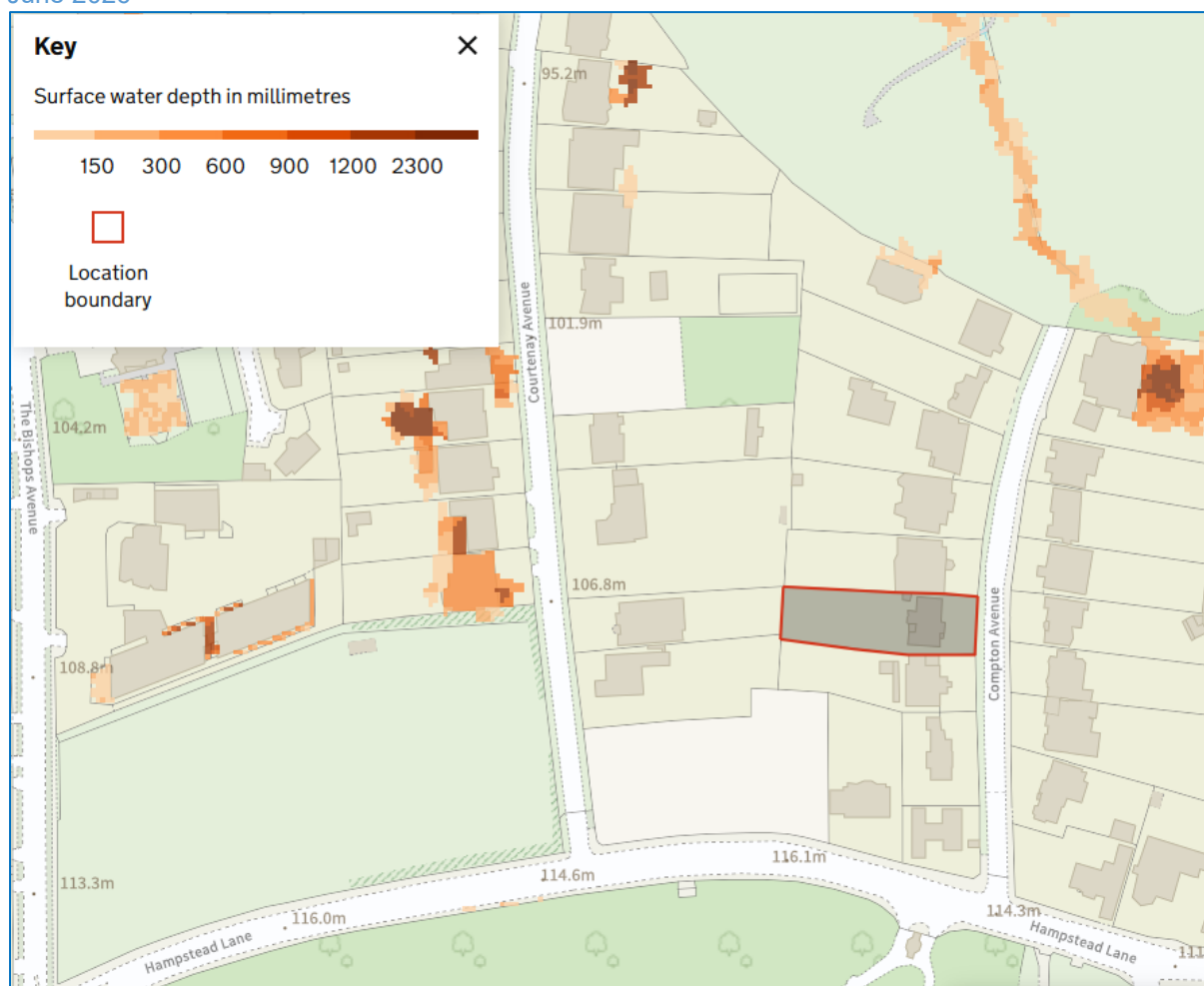


Figure 5 – Environment Agency Flood Map (from surface water) for the proposed development, 1 in 1000-year storm event

The surface water run off that will be produced as a result of this development will be dealt with through the use of sustainable urban drainage systems (SuDS), and therefore greatly reduce the peak rate of flow leaving the site. This SuDS solution will be discussed in greater detail further on in this report.

4.3. Flooding from Groundwater

A basement impact assessment report has been provided to accompany this planning application, and the findings state that there is a risk of seepages of groundwater being encountered within the full extent of the basement. Therefore, the client will undertake long term groundwater monitoring prior to any construction, to ascertain the standing ground water levels, and the following mitigation measures will be proposed, in line with BS 8102:2009 code of practice for "protection of below ground structures against water from the ground" and current best practice.

- The proposed structures will be designed to resist any potential hydrostatic uplift forces which may be imparted by the presence of groundwater.
- The basement will be designed as a watertight element. It should also be appreciated that the soils at likely foundation/basement depth will deteriorate rapidly in the prolonged presence of water, therefore a waterproof membrane such as delta membrane or equivalent should be used. Consequently, it may be prudent to apply a blinding layer of lean-mix concrete to all excavations, if continuous working cannot be achieved.
- Pumps will also be provided to remove excess water should the properties flood.

Additional mitigation measures will include:

- Fixtures and fittings for the basement will be located to ensure that if any flood water does enter the building, the impact of floodwater on the property will be minimal;
- Electricity sockets for the basement will be 1000mm above the finished floor level and wired from the ceiling down;
- Non-return valves will be employed in the drainage design for the basement, to prevent back up of flow;
- Water resistant paint to be used for internal walls.

4.4. Flooding from Sewers

There have been no incidents of sewer flooding at the site, and this has been confirmed by the client. Our proposed solution will involve non return valves being fitted on all outgoing sewers, and the surface water run off from the proposed extension will be restricted to 1 l/s leaving the site, hence reducing the risk of flooding at the site and elsewhere.

4.5. Flooding from Reservoirs, Canals or Other Artificial Sources

There is no risk of flooding to this site from any reservoirs, canals or other artificial sources in the vicinity of the site. This can also be confirmed by the Environment Agency's website.

5. SUSTAINABLE URBAN DRAINAGE SYSTEMS

The total site area is 2033m², and the impermeable areas of the site prior to development are 677m². Following the development at this site, the impermeable areas will have increased to 890m². However, only 297m² has been considered as new impermeable area, consisting of the roof areas of the proposed extension, as well as the new hard standing areas, prior to any mitigation by using Sustainable Urban Drainage Systems. All other impermeable areas are to remain connected to the existing drainage systems on site.

Surface water arising from a developed site should, as far as practicable, be managed in a sustainable manner to mimic the surface water flows arising from the site prior to the proposed development, while reducing the flood risk to the site itself and elsewhere, taking climate change into account.

Reducing the rate of surface water discharge from Urban Sites is one of the most effective ways of reducing and managing flood risk. Traditional piped surface water systems work by removing the surface water from our developments as quickly as possible, however this can cause various adverse impacts:

- Increased downstream flooding, and sudden rises in flow rates and water levels in local water courses.
- Reduction in groundwater levels dry weather flows in watercourses.

- Reduce amenity and adversely affect biodiversity due to the surface water runoff containing contaminants such as oil, organic matter, and toxic materials.

SuDS are defined as a sequence of management principles and control structures designed to drain surface water in a more sustainable fashion than conventional piped drainage techniques. SuDS should utilise the environmental, ecological, and social benefits.

These include:

- Protection and enhancement of water quality – As well as providing on-site attenuation, SuDS treats the water, resulting in an improved quality of water leaving the site. This is achieved when the water passes through the fine soils and the roots of specially selected plants, pollutants washed off the hard landscaping by rainfall will be safely removed before the water reaches the natural water course.
- A sympathetic approach to the environmental setting by providing the opportunities to create habitats for flora and fauna in urban watercourses and open spaces.
- Meeting the amenity and social needs of the local community and residents in the creation of attractive green spaces.

The various types of SuDS include:

Permeable paving	
Soakaways	
Swales and basins	
Bioretention/ rain gardens	
Green roofs and rainwater re-use	
Infiltration trenches and filter drains	
Ponds and wetlands	

Preferably a combination of these techniques should be used as part of the surface water management train, and it is important for all stakeholders, such as developers, architects, landscape architects and engineers to work together at the planning stage in order to determine a feasible solution.

The SuDS management train is shown below, and this has been followed when proposing the proposed Sustainable Urban Drainage Systems for this site.

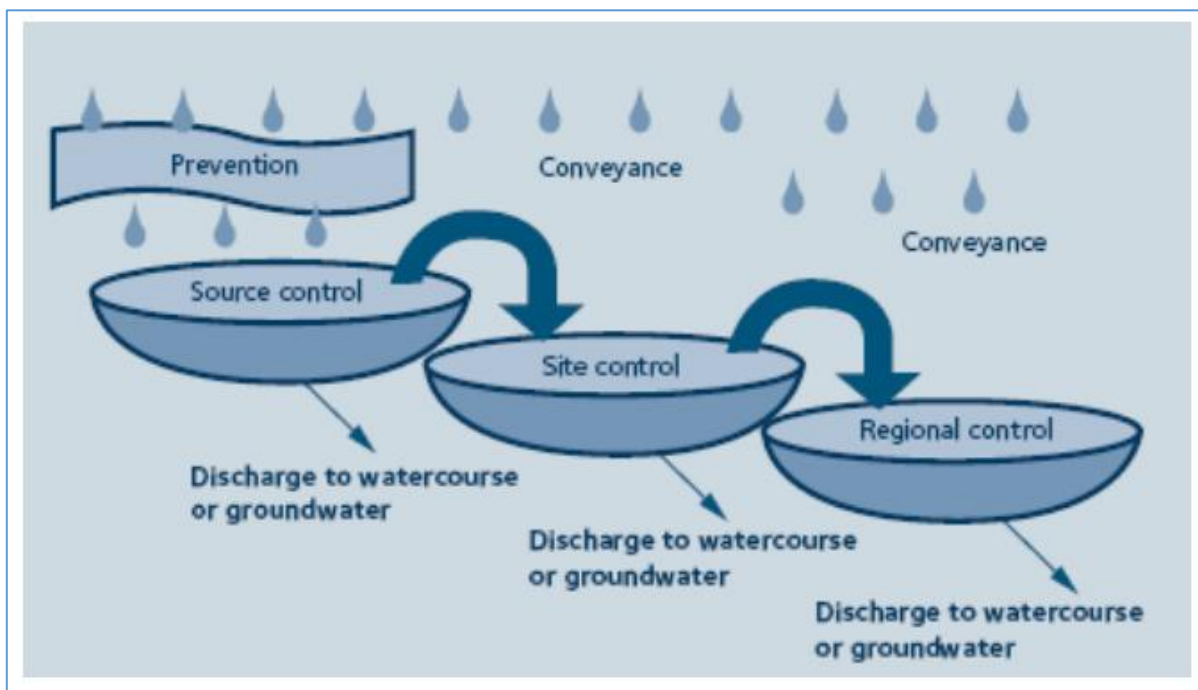


Figure 6 – SuDS Management Train

6. PROPOSED SUDS SOLUTION

NPPF states that any proposed SuDS solution is to be proportionate to the nature and scale of the development.

In order to ensure that the SuDS management train has been considered fully, we have proposed 2 wall mounted rainwater harvesting tanks, to promote rainwater reuse. Any proposed new hardstanding areas will be formed of porous surfacing.

The remaining surface water runoff from the site will then be discharged to an underground attenuation, to store 61.75m³ of surface water, designed for a 1 in 100 Year Storm Event +45% Climate Chance Allowance. The proposed SuDS solution is shown in drawing C3784-03, located within Appendix A of this report.

We believe the above solution is proportionate to the nature and scale of the development.

7. TIMESCALE AND MAINTENANCE OF DRAINAGE WORKS

All drainage works shall be completed prior to first occupation and there shall be no adoption of any of the drainage works within the site. The homeowner will be responsible for overseeing the long-term maintenance of all communal drains. The following outline maintenance strategy sets out recommended timescales for maintenance of the proposed drainage works, in line with CIRIA SuDS Design Guide:

- Regular inspection will comprise the inspection and cleaning of catchment, gutters, filters, and tanks to reduce the likelihood of contamination, this is recommended to be conducted every 3 to 6 months.
- The rainwater harvesting systems should be checked every 3 months for the accumulation of debris/ silt, in order to ensure that there are no blockages. The flow control device and rainwater harvesting system should also be cleaned where necessary.
- The catchpit chamber to the attenuation tank should be checked and cleaned every 3 months for the accumulation of debris/ silt, in order to ensure that there are no blockages.
- Regular jet-washing of permeable paving can be used to keep joints and voids clear; this should be carried out every 3 to 6 months.

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Inspection of the tank for debris and sediment build-up, inlets/outlets/withdraw devices, overflow areas, pumps, filters.	Annually (and following poor performance)
	Cleaning of tank, inlets, outlets, gutters. Withdrawal devices and roof drain filters of silts and other debris	Annually (and following poor performance)
Occasional maintenance	Cleaning and/ or replacement of any filters	Three monthly (or as required)
Remedial actions	Repair of overflow erosion damage or damage to tank	As required
	Pump repairs	As required

Table 4: Operation and maintenance requirement for RWH systems.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	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 of filter for blockages 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
Remedial actions	Repair/ rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	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

Table 5: Operation and maintenance requirements for attenuation storage tanks.

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect from surface and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then 6 monthly intervals
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	Orifice plates within plastic chambers or vortex controls to be jetted from the surface after heavy rainfall events to remove any debris or silt	As required
	Empty catchpits upstream of SuDS features to ensure no debris is passed downstream	3 months or as required
Remedial actions*	In the event of a blockage, a vortex flow control can be removed from the chamber via the lifting cabled located at the access, this will be cleaned at surface level and reinstalled into its original location	As required
	In the event of a blockage, the orifice plate should be jetted from surface, and if blockage is not cleared the orifice plate can be removed by removing fixing bolts. These fixing bolts should be checked and replaced if needed.	As required
Monitoring	Following installation it is important that any extraneous materials i.e. building materials: granular backfill, in-situ pour concrete etc are removed from the unit and the new flow control chamber is fully jetted down	Upon installation
	Inspect/check chamber channel for any debris or silt build-up. Upstream chambers should be checked at the same time as these monitoring works to ensure network is operating at full capacity.	Annually

Table 6: Operation and maintenance requirements for flow control chambers

*All Remedial Works should be carried out by a competent and certified contractor, with no access to chambers or removal of parts to be undertaken by homeowners

If upstream network of flow control chamber is regularly maintained, little maintenance is required within the chamber as there are no moving parts

Maintenance Schedule	Required Action	Typical Frequency
Regular maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations or clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this is the most likely to collect the most sediment
Occasional maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required
Remedial Actions	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 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 (if infiltration performance is reduced due to significant clogging)
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action	Three-monthly, 48hr after large storms in six months
	Inspect slit accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

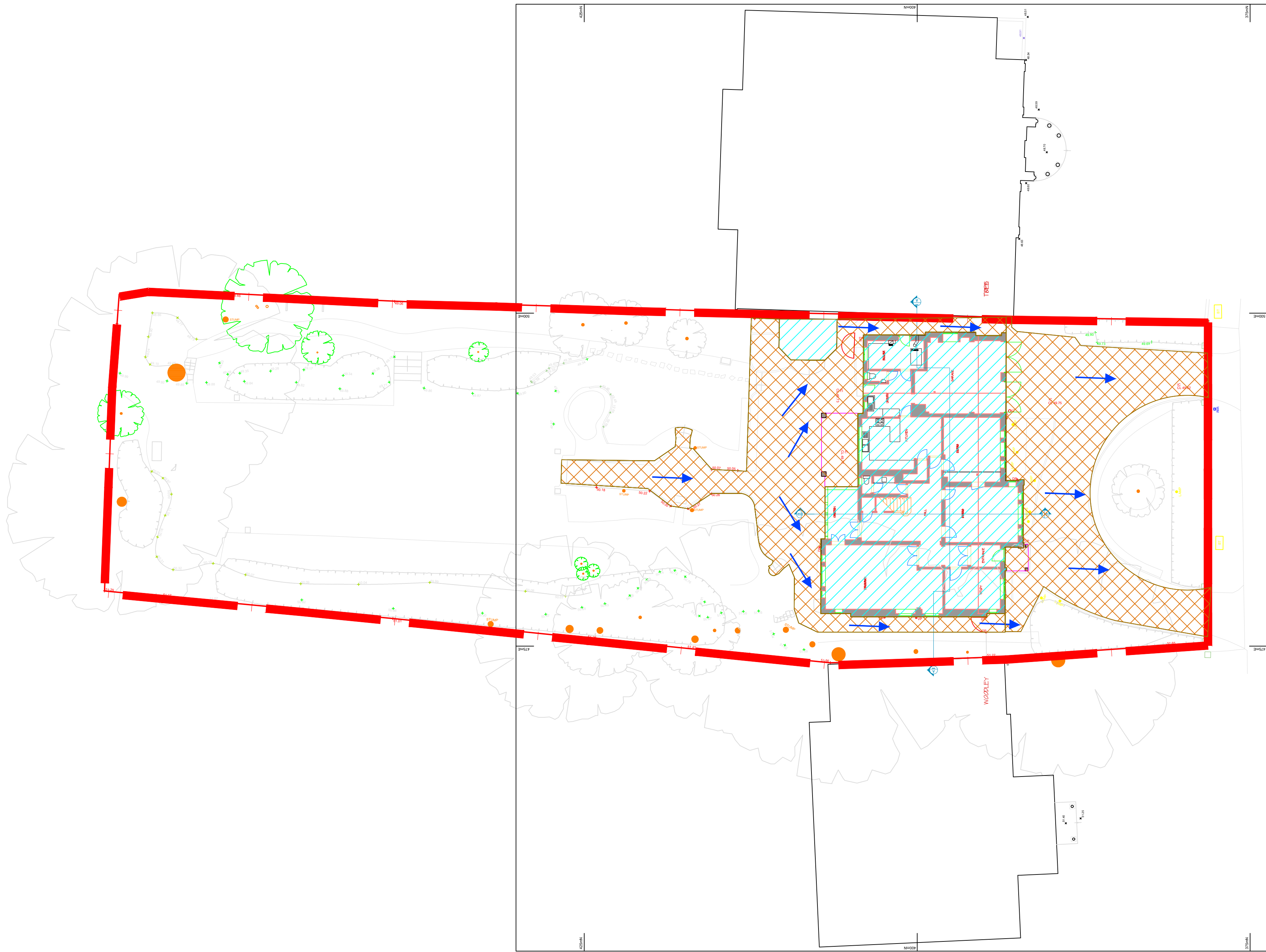
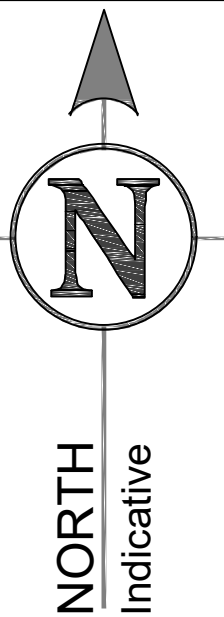
Table 7: Operation and maintenance requirements for pervious pavements.

8. CONCLUSIONS

The purpose of this report is to satisfy the local planning authority that the proposed dwellings are not at risk of flooding and will not increase flood risk at the site or elsewhere.

The flood risk from all sources has been assessed and the proposed development will incorporate a suitable SuDS solution to ensure that the proposals do not increase flood risk, which follows the SuDS hierarchy.

APPENDIX A - DRAWINGS



Existing Red Boundary Total Area is
Approx. 2033m²

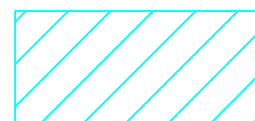
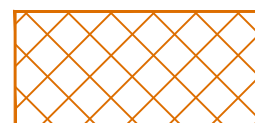
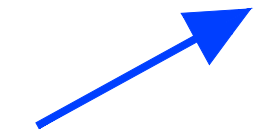
Existing Impermeable Total Area is
Approx. 677m²

Existing Permeable Total Area is
Approx. 1356m²

Existing Impermeable Area represent
Approx. 33% from Total
Considered Area.

DRAWING TO BE PRINTED IN COLOUR.

KEY:

-  Existing Roof Area
-  Existing Hardstanding Area
-  Proposed Site Boundary
-  Exceedance Route Arrow

NOT FOR CONSTRUCTION

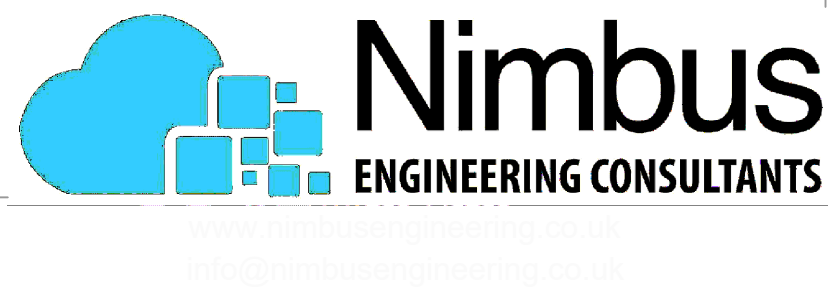
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REV	DATE	DRAWN	DESCRIPTION	CHECK	APPR.
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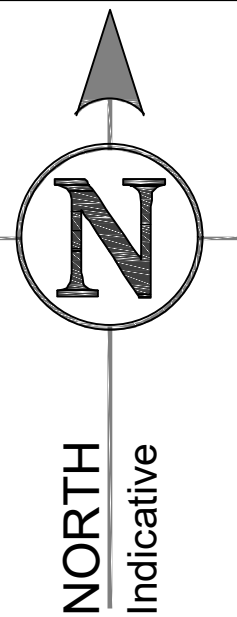
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Pre-Development Impermeable Areas and Exceedance
Route Plan

Derwen Trust



S.L	05-05-26	S.L	05-05-26
L.B	1:200	C3784-01	A
05-05-26	A1		



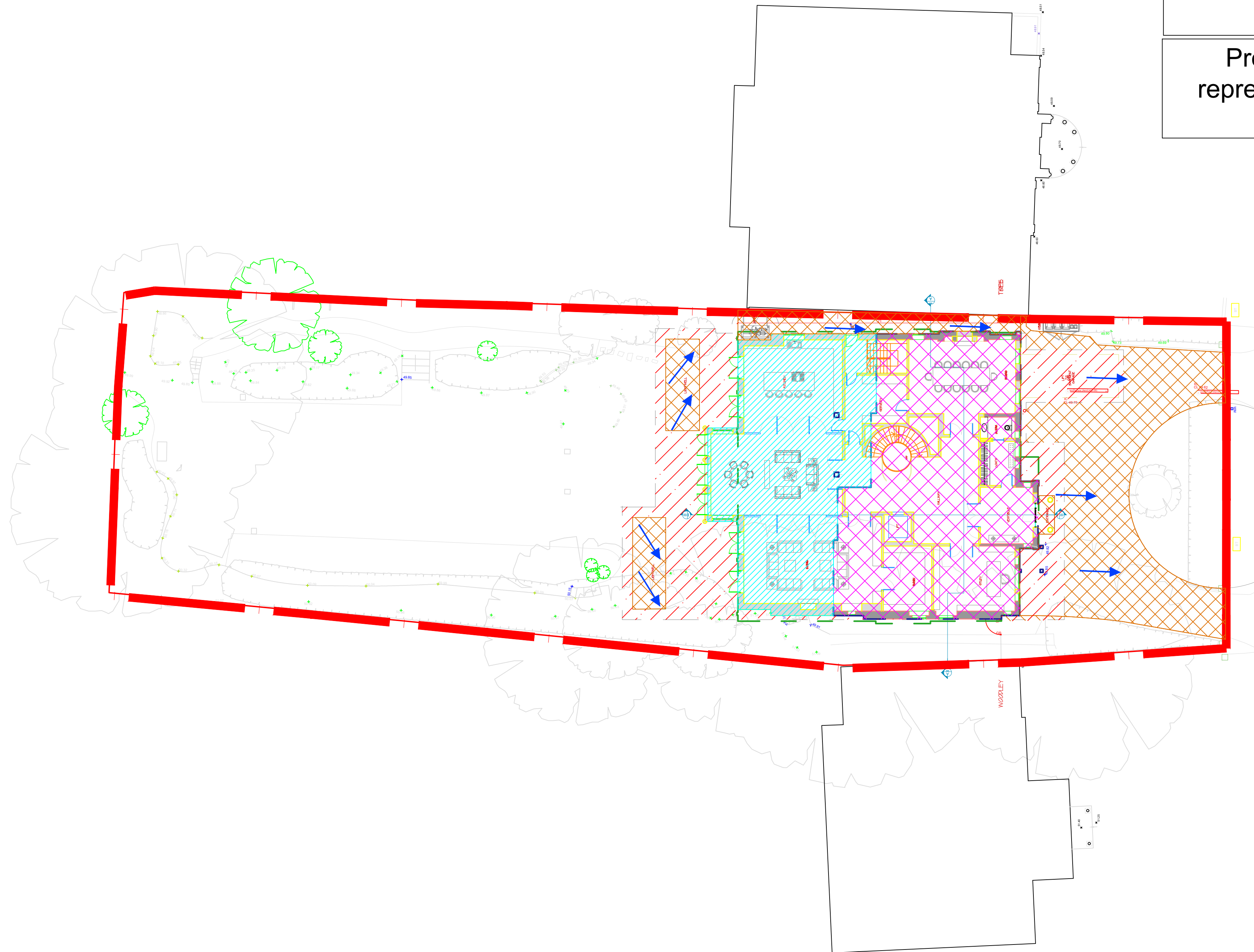
Proposed Red Boundary Total Area is
Approx. 2033m²

Proposed Impermeable Total Area is
Approx. 890m²

Proposed Permeable Total Area is
Approx. 1143m²

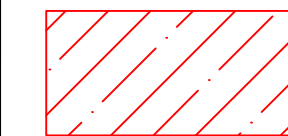
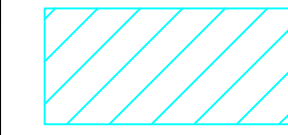
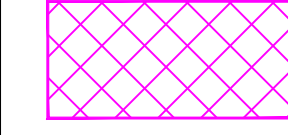
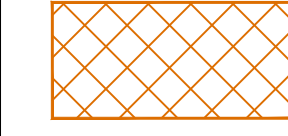
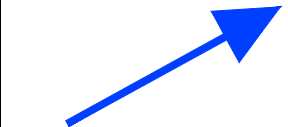
Proposed Extension Total Area is
Approx. 297m²

Proposed Impermeable Area
represent Approx. 44% from Total
Considered Area.



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KEY:

-  Proposed Underground Extension Areas
-  Proposed Roof Extension Areas
-  Existing Roof Areas
-  Proposed Hardstanding Areas
-  Proposed Site Boundary
-  Exceedance Route Arrow

NOT FOR CONSTRUCTION

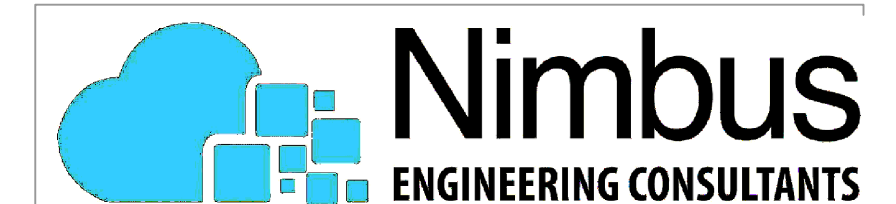
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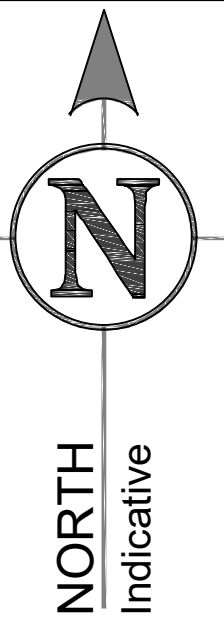
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Post-Development Impermeable Areas and Exceedance
Route Plan

Derwen Trust



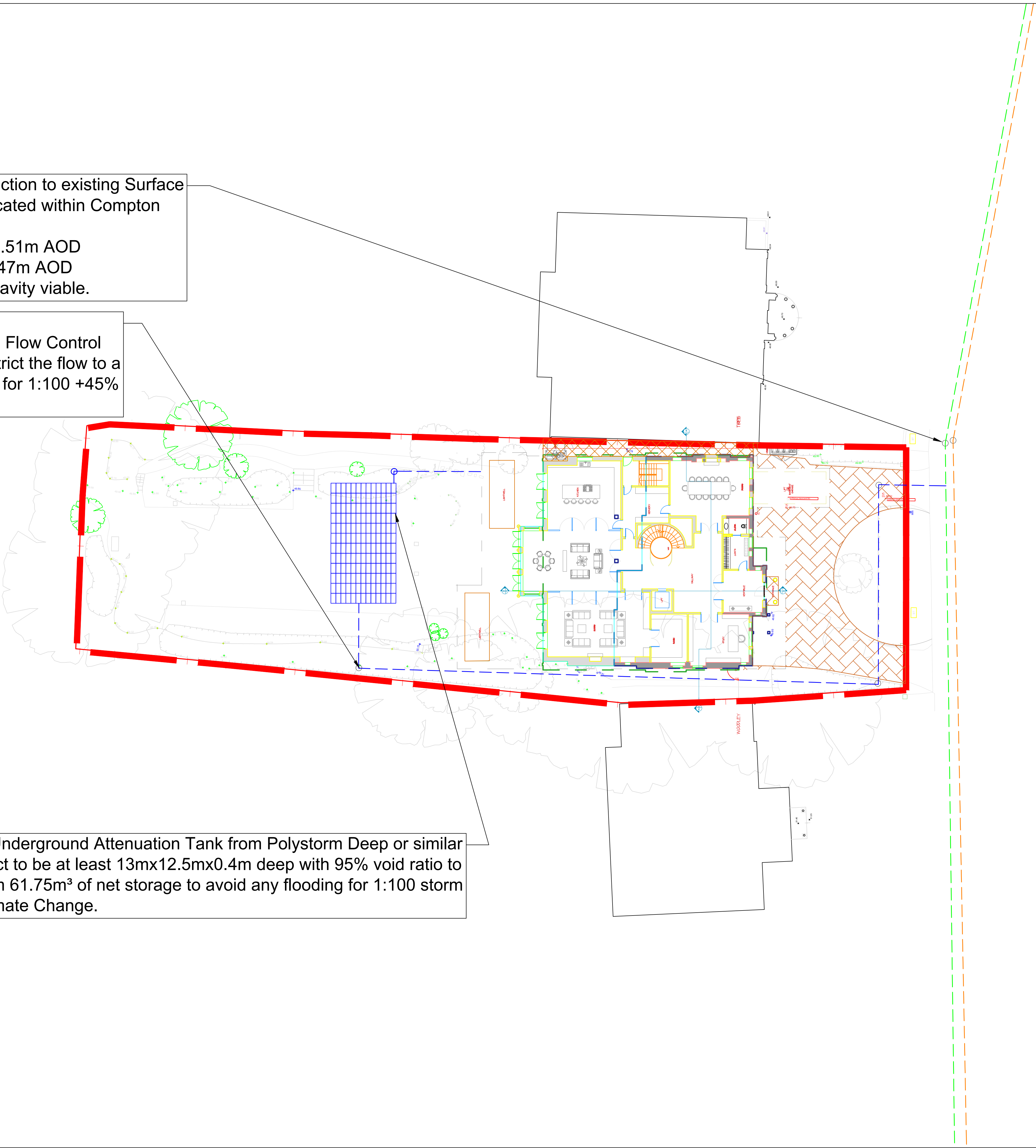
S.L	05-05-26	S.L	05-05-26
L.B	1:200	C3784-02	A
05-05-26	A1		



Proposed connection to existing Surface Water Sewer located within Compton Avenue.
CL: Approx. 107.51m AOD
IL: Approx. 104.47m AOD
Discharge via gravity viable.

SWC-06
Proposed Orifice Flow Control Chamber to restrict the flow to a maximum of 1l/s for 1:100 +45% climate change.

Surface Water Underground Attenuation Tank from Polystorm Deep or similar approved product to be at least 13mx12.5mx0.4m deep with 95% void ratio to provide minimum 61.75m³ of net storage to avoid any flooding for 1:100 storm event +45% Climate Change.



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KEY:

- Proposed Permeable Paving
- Proposed Attenuation Tank
- Proposed Site Boundary
- SW Inspection / Catchpit Chambers
- Manhole
- Surface Water UPVC Pipes
- Foul Water Pipe
- Surface Water Pipe

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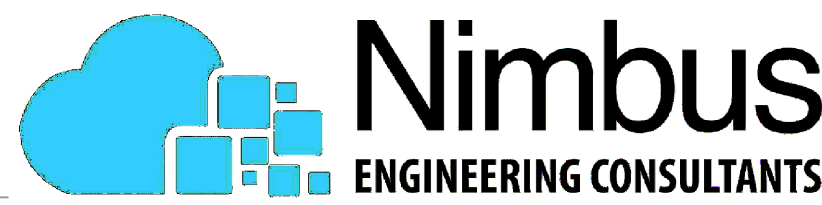
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SuDS Layout & Location Plan

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S.L	19-06-26	S.L	19-06-26
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APPENDIX B – SURFACE WATER RUN OFF CALCULATIONS



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www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No.	C3784		
Sheet no.	1		
Date	11/06/26		
By	SL	Checked	Reviewed

Project **Derwen, Compton Avenue, Hornsey, London, N6 4LH**

Title **loH 124 (Qbar(urban))Runoff calcs**

Hydrological Data:-

FSR Hydrology:-

Location	= LONDON (NORTH)	Grid reference	= TQ4090
M5-60 (mm)	= 20	r	= 0.43
Soil runoff	= 0.45	SAAR (mm/yr)	= 610
WRAP	= 4	Area	= England & Wales
Hydrological area	= 6	Hydrological zone	= 8

Soil classification for WRAP type 4

Clayey, or loamy over clayey soils with an impermeable layer at shallow depth.

Design data:-

Area = 0.002033 Km² - 0.203 Ha - 2033 m² % Urbanisation = 33.00%

Calculation method:-

Runoff is calculated from:-

$$Q_{\text{BAR(urban)}} = Q_{\text{BAR(rural)}} (1 + \text{URBAN})^{2\text{NC}} [1 + \text{URBAN} \{ (21/\text{CIND}) - 0.3 \}]$$

where:-

NC varies with the value of SAAR:-

for 500<SAAR<1100 mm then NC = 0.92 - 0.00024SAAR

for 1100<SAAR<3000 mm then NC = 0.74 - 0.000082SAAR

CIND = 102.4SOIL + 0.28 (CWI - 125) CWI = Catchment Wetness Index

so

CIND =28.528

CWI =62.313

NC =0.774

For areas less than 50Ha, a modified calculation which multiplies the 50Ha runoff value by the ratio of the site area to 50Ha is used
Reducing factor used for these calculations is 0.004

$$Q_{\text{BAR(rural)}} = 0.760 \text{ (l/s)}$$

$$Q_{\text{BAR(urban)}} = 1.352 \text{ (l/s)}$$

$Q_{\text{BAR(urban)}}$ is then multiplied by a growth factor - GC(T) - for different storm return periods derived from EA publication W5-074/A.



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Calculated data:-

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Title IoH 124 (Qbar(urban))Runoff calcs						

Mean Annual Peak Flow $Q_{BAR(urban)} = 1.35 \text{ l/s}$

Values for $Q_{BAR(urban)}$

Ret. per.	m ³ /hr	l/s	l/s/ha	Ret. per.	m ³ /hr	l/s	l/s/ha
1yr	0.001	1.149	5.653	100yr	0.004	4.259	20.950
2yr	0.001	1.190	5.853	100yr+20%	0.005	5.111	25.139
5yr	0.002	1.731	8.513	100yr+30%	0.006	5.537	27.234
10yr	0.002	2.190	10.774	200yr	0.005	5.003	24.607
30yr	0.003	3.015	14.831	200yr + 30%	0.007	6.503	31.990
50yr	0.004	3.542	17.425	500yr	0.006	6.071	29.861
				1000yr	0.007	6.977	34.317

Growth factors -

1yr	2yr	5yr	10yr	30yr	50yr	100yr	200yr	500yr	1000yr
0.85	0.88	1.28	1.62	2.23	2.62	3.15	3.70	4.49	5.16

The above is based on the Institute of Hydrology Report 124 to which you are referred for further details (see Sect 7). Note that the 200 year growth curve was taken from W5-074/A.

For WRAP type 1 soils, CIND can become negative for lower values of SAAR. In this case the CIND value is multiplied by -1 to return a positive value (CIND is very small at this point).



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Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

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By SL	Checked	Reviewed

Project **Derwen, Compton Avenue, Hornsey, London, N6 4LH**

Title **Hydrograph storage calcs with 1 l/s discharge**

Data:-

Location = LONDON (NORTH) Grid reference = TQ4090
M5-60 (mm) = 20 r = 0.43
Soil index = 0.45 SAAR (mm/yr) = 610
Return period = 100 WRAP = 4
UCWI = 0.0 Climate change = 45%

Clayey, or loamy over clayey soils with an impermeable layer at shallow depth.

Pipeline storage = 0.0 m³ Available MH storage = 0.0 m³
Offline storage = 0.0 m³

Percentage runoff = 100.0% (manual setting)

Imperv. area = 865 m² Pervious area = 0 m²
Total area = 865 m² Equiv area = 865 m² (Tot. area x % runoff).
Total runoff = 70.4 m³ Discharge rate = 1.000 l/s
Storage (m³) = 57.8 m³ (Sum of all balance quantities)
Total rainfall depth = 81.4 mm

Calculations :-

Time (hrs)	%Mean intens	Rain mm/hr	Inflow (m3)	Outflow (m3)	Balance (m3)	Cumulative (m3)
0.040	20.0	4.1	0.141	0.144	0.000	0.000
0.080	20.0	4.1	0.141	0.144	0.000	0.000
0.120	21.0	4.3	0.148	0.144	0.004	0.004
0.160	21.0	4.3	0.148	0.144	0.004	0.008
0.200	22.0	4.5	0.155	0.144	0.011	0.019
0.240	23.0	4.7	0.162	0.144	0.018	0.037
0.280	24.0	4.9	0.169	0.144	0.025	0.062
0.320	26.0	5.3	0.183	0.144	0.039	0.101
0.360	27.0	5.5	0.190	0.144	0.046	0.147
0.400	29.0	5.9	0.204	0.144	0.060	0.207
0.440	31.0	6.3	0.218	0.144	0.074	0.282
0.480	32.0	6.5	0.225	0.144	0.081	0.363
0.520	33.0	6.7	0.232	0.144	0.088	0.452
0.560	34.0	6.9	0.239	0.144	0.095	0.547
0.600	36.0	7.3	0.254	0.144	0.110	0.657
0.640	38.0	7.7	0.268	0.144	0.124	0.780
0.680	39.0	7.9	0.275	0.144	0.131	0.911
0.720	40.0	8.1	0.282	0.144	0.138	1.049
0.760	42.0	8.6	0.296	0.144	0.152	1.201
0.800	45.0	9.2	0.317	0.144	0.173	1.374
0.840	49.0	10.0	0.345	0.144	0.201	1.575
0.880	53.0	10.8	0.373	0.144	0.229	1.804
0.920	57.0	11.6	0.401	0.144	0.257	2.062
0.960	62.0	12.6	0.437	0.144	0.293	2.354
1.000	66.0	13.4	0.465	0.144	0.321	2.675
1.040	71.0	14.5	0.500	0.144	0.356	3.031
1.080	77.0	15.7	0.542	0.144	0.398	3.430
1.120	84.0	17.1	0.592	0.144	0.448	3.877
1.160	91.0	18.5	0.641	0.144	0.497	4.374
1.200	98.0	20.0	0.690	0.144	0.546	4.921
1.240	105.0	21.4	0.740	0.144	0.596	5.516
1.280	114.0	23.2	0.803	0.144	0.659	6.175
1.320	125.0	25.4	0.880	0.144	0.736	6.912
1.360	135.0	27.5	0.951	0.144	0.807	7.719
1.400	143.0	29.1	1.007	0.144	0.863	8.582
1.440	154.0	31.4	1.085	0.144	0.941	9.523
1.480	164.0	33.4	1.155	0.144	1.011	10.534
1.520	173.0	35.2	1.219	0.144	1.075	11.608
1.560	183.0	37.3	1.289	0.144	1.145	12.753
1.600	194.0	39.5	1.366	0.144	1.222	13.976



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Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

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Title **Hydrograph storage calcs with 1 l/s discharge**

Calculations (cont.) :-

Time (hrs)	%Mean intens	Rain mm/hr	Inflow (m3)	Outflow (m3)	Balance (m3)	Cumulative (m3)
1.640	204.0	41.5	1.437	0.144	1.293	15.269
1.680	212.0	43.2	1.493	0.144	1.349	16.618
1.720	219.0	44.6	1.543	0.144	1.399	18.016
1.760	226.0	46.0	1.592	0.144	1.448	19.464
1.800	233.0	47.4	1.641	0.144	1.497	20.962
1.840	239.0	48.7	1.683	0.144	1.539	22.501
1.880	244.0	49.7	1.719	0.144	1.575	24.076
1.920	248.0	50.5	1.747	0.144	1.603	25.679
1.960	249.0	50.7	1.754	0.144	1.610	27.288
2.000	250.0	50.9	1.761	0.144	1.617	28.905
2.040	250.0	50.9	1.761	0.144	1.617	30.522
2.080	249.0	50.7	1.754	0.144	1.610	32.132
2.120	248.0	50.5	1.747	0.144	1.603	33.735
2.160	244.0	49.7	1.719	0.144	1.575	35.310
2.200	239.0	48.7	1.683	0.144	1.539	36.849
2.240	233.0	47.4	1.641	0.144	1.497	38.346
2.280	226.0	46.0	1.592	0.144	1.448	39.794
2.320	219.0	44.6	1.543	0.144	1.399	41.193
2.360	212.0	43.2	1.493	0.144	1.349	42.542
2.400	204.0	41.5	1.437	0.144	1.293	43.835
2.440	194.0	39.5	1.366	0.144	1.222	45.057
2.480	183.0	37.3	1.289	0.144	1.145	46.202
2.520	173.0	35.2	1.219	0.144	1.075	47.277
2.560	164.0	33.4	1.155	0.144	1.011	48.288
2.600	154.0	31.4	1.085	0.144	0.941	49.229
2.640	143.0	29.1	1.007	0.144	0.863	50.092
2.680	135.0	27.5	0.951	0.144	0.807	50.899
2.720	125.0	25.4	0.880	0.144	0.736	51.636
2.760	114.0	23.2	0.803	0.144	0.659	52.295
2.800	105.0	21.4	0.740	0.144	0.596	52.890
2.840	98.0	20.0	0.690	0.144	0.546	53.436
2.880	91.0	18.5	0.641	0.144	0.497	53.933
2.920	84.0	17.1	0.592	0.144	0.448	54.381
2.960	77.0	15.7	0.542	0.144	0.398	54.779
3.000	71.0	14.5	0.500	0.144	0.356	55.136
3.040	66.0	13.4	0.465	0.144	0.321	55.456
3.080	62.0	12.6	0.437	0.144	0.293	55.749
3.120	57.0	11.6	0.401	0.144	0.257	56.007
3.160	53.0	10.8	0.373	0.144	0.229	56.236
3.200	49.0	10.0	0.345	0.144	0.201	56.437
3.240	45.0	9.2	0.317	0.144	0.173	56.610
3.280	42.0	8.6	0.296	0.144	0.152	56.762
3.320	40.0	8.1	0.282	0.144	0.138	56.900
3.360	39.0	7.9	0.275	0.144	0.131	57.030
3.400	38.0	7.7	0.268	0.144	0.124	57.154
3.440	36.0	7.3	0.254	0.144	0.110	57.264
3.480	34.0	6.9	0.239	0.144	0.095	57.359
3.520	33.0	6.7	0.232	0.144	0.088	57.448
3.560	32.0	6.5	0.225	0.144	0.081	57.529
3.600	31.0	6.3	0.218	0.144	0.074	57.603
3.640	29.0	5.9	0.204	0.144	0.060	57.664
3.680	27.0	5.5	0.190	0.144	0.046	57.710
3.720	26.0	5.3	0.183	0.144	0.039	57.749
3.760	24.0	4.9	0.169	0.144	0.025	57.774
3.800	23.0	4.7	0.162	0.144	0.018	57.792
3.840	22.0	4.5	0.155	0.144	0.011	57.803
3.880	21.0	4.3	0.148	0.144	0.004	57.807
3.920	21.0	4.3	0.148	0.144	0.004	57.811
3.960	20.0	4.1	0.141	0.144	0.000	57.808
4.000	20.0	4.1	0.141	0.144	0.000	57.804

Storage volume (m³) = 57.8 m³ (Sum of all balance quantities)



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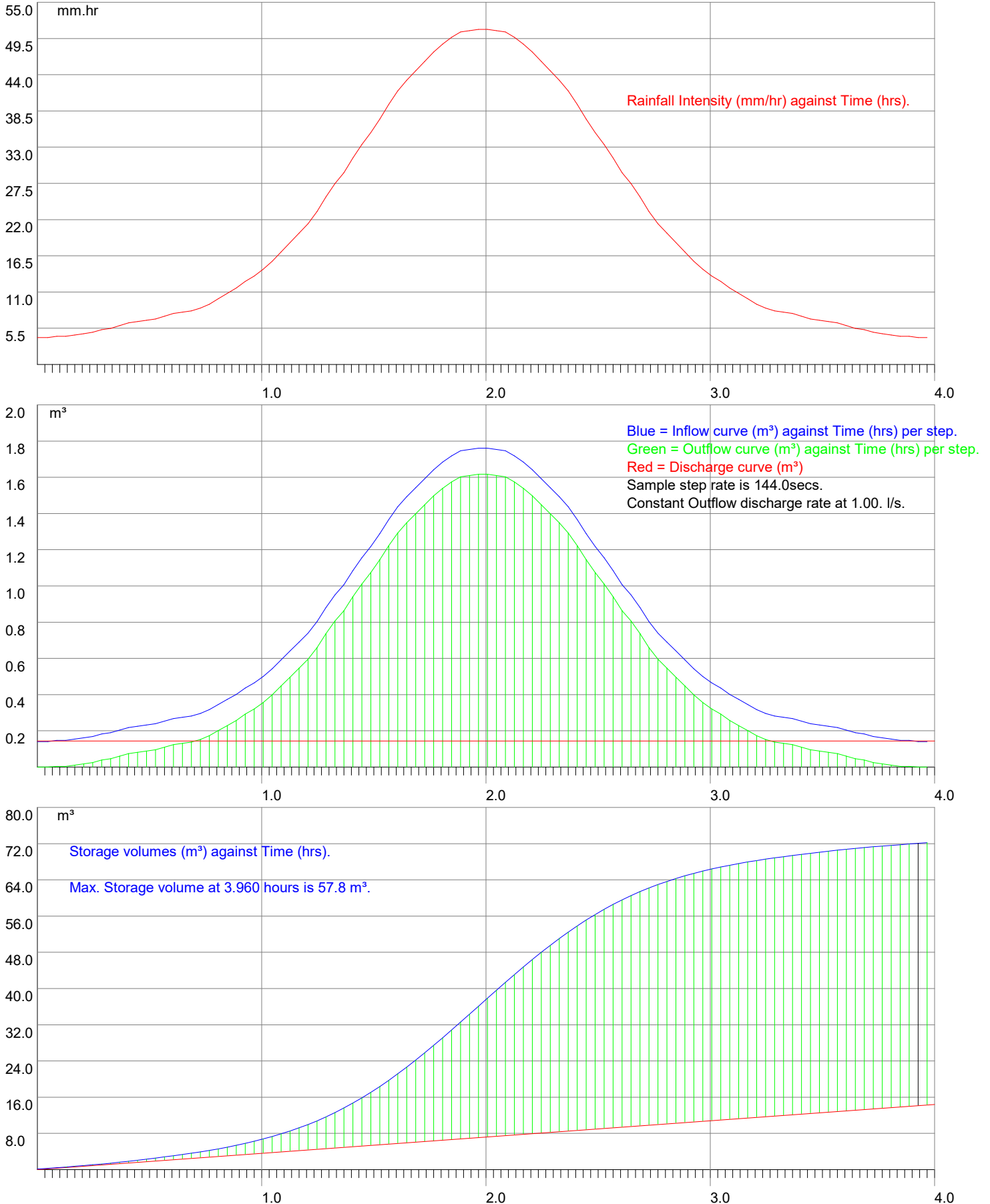
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London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

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Title **Hydrograph storage calcs with 1 l/s discharge**





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152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
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Project **Derwen, Compton Avenue, Hornsey, London, N6 4LH**

Title **Hydrograph storage calcs with 1 l/s discharge**

Maximum storage volumes for varying duration storms.

Storm length (hrs)	Max. Vol (m ³)	Max. Vol time	Mean intens (mm/hr)	Step time. (mins)	Peak found
0.25	31.63	0.25	146.75	0.2	
0.5	40.39	0.50	95.16	0.3	
1	48.48	1.00	58.74	0.6	
2	54.95	2.00	35.05	1.2	
3	57.25	3.00	25.59	1.8	
4	57.81	4.00	20.36	2.4	Peak found
5	57.65	---	17.00	3.0	
6	57.29	---	14.68	3.6	
7	56.71	---	12.97	4.2	
8	56.04	---	11.65	4.8	
9	55.30	---	10.59	5.4	
10	54.55	---	9.73	6.0	
12	52.89	---	8.39	7.2	
15	50.13	---	7.00	9.0	
18	47.23	---	6.04	10.8	
20	45.27	---	5.54	12.0	
24	41.34	---	4.77	14.4	
30	35.55	---	3.98	18.0	
36	30.05	---	3.43	21.6	
42	24.76	---	3.02	25.2	
48	19.85	---	2.70	28.8	
54	15.36	---	2.45	32.4	
60	11.30	---	2.25	36.0	
66	7.68	---	2.08	39.6	
72	4.54	---	1.94	43.2	
84	0.36	---	1.70	50.4	
96	0.00	---	1.53	57.6	
120	0.00	---	1.27	72.0	
150	0.00	---	1.05	90.0	
175	0.00	---	0.93	105.0	
200	0.00	---	0.83	120.0	
250	0.00	---	0.69	150.0	
300	0.00	---	0.59	180.0	
375	0.00	---	0.49	225.0	
500	0.00	---	0.39	300.0	
750	0.00	---	0.28	450.0	
1000	0.00	---	0.22	600.0	
1250	0.00	---	0.18	750.0	
1500	0.00	---	0.16	900.0	
1570	0.00	---	0.15	942.0	
2000	0.00	---	0.12	1200.0	
2500	0.00	---	0.10	1500.0	
3000	0.00	---	0.09	1800.0	
3500	0.00	---	0.08	2100.0	
4000	0.00	---	0.07	2400.0	



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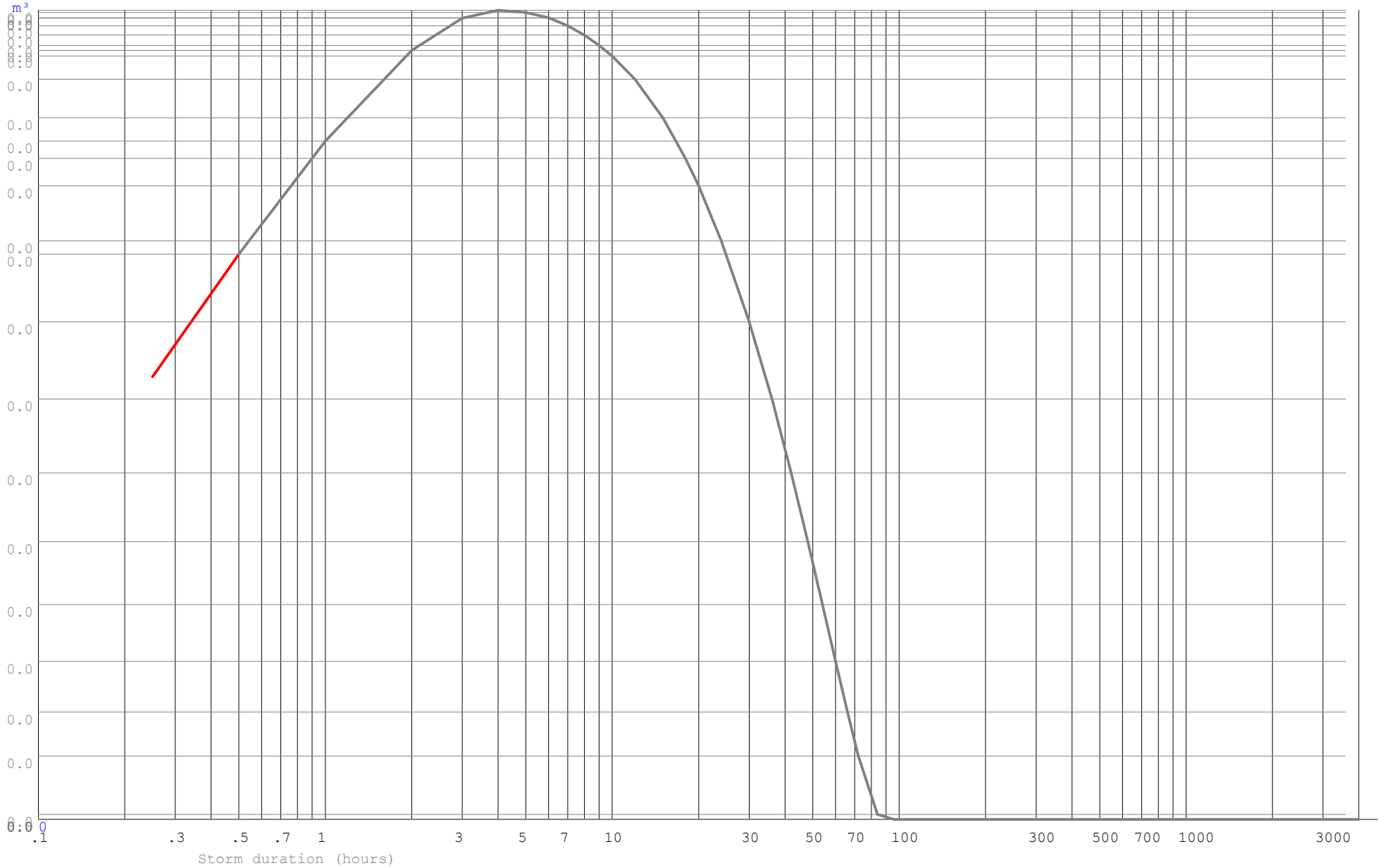
Kemp House,
152 City Road,
London, EC1V 2NX
Mob:0772 339 3155
email: info@nimbusengineering.co.uk

Job No. C3784		
Sheet no. 5		
Date 19/06/26		
By SL	Checked	Reviewed

Project **Derwen, Compton Avenue, Hornsey, London, N6 4LH**

Title **Hydrograph storage calcs with 1 l/s discharge**

Sequential storage volume at specific storm durations.





MasterDrain
SW

Nimbus Engineering Consultants Ltd

www.nimbusengineering.co.uk

Kemp House,
152 City Road,
London, EC1V 2NX
Mob: 0772 339 3155
email: info@nimbusengineering.co.uk

Job No. C3784		
Sheet no. 6		
Date 19/06/26		
By SL	Checked	Reviewed

Project **Derwen, Compton Avenue, Hornsey, London, N6 4LH**

Title **Hydrograph storage calcs with 1 l/s discharge**

Explanatory notes for Peak Flow Storage

- 1) This system uses the rainfall intensity/ duration curve calculated using either the Wallingford or FEH method as selected.
- 2) The balance is calculated from the inflow minus the outflow.
- 3) The storage volume is the maximum value of the balance curve.
- 4) This method was described by Davis (1963) - see Butler & Davies, 2nd edition, p294
- 5) References to 'storm duration' relate only to the hydrograph method (qv).
- 6) There are always 600 steps in the calculation process, thus a 'run' time of 10 hours will be sampled every minute,

Explanatory notes for Hydrograph Storage

- 1) The user has the choice of Summer or Winter curves
- 2) The mean intensity varies with the duration of the storm curve
- 3) There are always 120 steps in the calculation process, irrespective of storm duration.
- 4) The balance is calculated from the inflow minus the outflow.
- 5) The storage volume is the sum of the balance values for each step.
- 6) Varying durations should be tried to find the maximum storage value - this can be narrowed down very closely.

*Modelling using the flow characteristics of the restrictor is available using Vortex Control modelling function. Please be aware that this function needs the full design data file to function.

Why do the two methods give different results?

The rainfall characteristics for each method are very different.

The Peak flow (using the Intensity/Duration/Frequency curve) does not model the actual rainfall. This curve is joined points which represent the mean intensity of a storm at a given duration i.e. a value of 19.5 mm/hr for a 60 minute storm indicates that over the sixty minute period, the mean intensity was 19.5 mm/hr. The calculation method samples the IDF curve for a given location and frequency (Return Period) and calculates the storage for that rate and duration less the outflow volume. The maximum value is displayed as the 'worst case' storage.

The hydrograph method uses a standard curve for either Winter or Summer storms. Traditionally these are symmetrical about the central peak. UK rainfall does not fit into this convenient curve, so the calculations are dealing with a stylised set of data. The mean intensity for the storm is calculated from the IDF curve and applied to the curve data, calculating the storage for that step less the outflow volume. The final storage volume is the sum of the storage for all the steps.

It can be seen that these two methods are very different, and the user may have the choice of which result to use. This is not an exact science, though is often treated as such by those that do not understand the principles of the calculations.

APPENDIX C – WATER AUTHORITY ASSET PLANS

Nimbus Engineering Consultants Limited
CAPITAL OFFICE LTD, GROUND FLO
LONDON
EC1V 2NX

Search address supplied Derwen
Compton Avenue
London
N6 4LH

Your reference C3784

Our reference ALS/ALS Standard/2026_5329408

Search date 13 May 2026

Keeping you up-to-date

Price Changes from 1 June 2026

With inflation continuing to influence costs, our prices for all searches will increase by around **4.3%** from **1 June 2026**. We've based this increase on **Retail Price Index (RPI)**.

You can view the new prices here: thameswater.co.uk/property-searches

If you have any questions, our customer experience team is here to help on **0800 009 4540**.



Thames Water Utilities Ltd
Property Searches,
Clearwater Court, Vastern Road, Reading RG1 8DB



property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches



0800 009 4540

Search address supplied: Derwen, Compton Avenue, London, N6 4LH

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position and size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the contact details below:

Thames Water Utilities Ltd
Property Searches
Clearwater Court
Vastern Road
Reading
RG1 8DB

Email: property.searches@thameswater.co.uk

Web: thameswater.co.uk/propertysearches

Waste Water Services

Please provide a copy extract from the public sewer map.

The following quartiles have been printed as they fall within Thames' sewerage area:

TQ2687NE
TQ2787NW
TQ2787NE

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority. Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners. The public sewer map relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus. The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

The following quartiles have been printed as they fall within Thames' water area:



TQ2687NE
TQ2787NW
TQ2787NE

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies. For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. You can do this by emailing customer.feedback@thameswater.co.uk with the email subject header 'Enquiry – TWOSA', along with details of the request.

If you have any questions regarding sewer connections, budget estimates, diversions or building over issues please direct them to our service desk which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

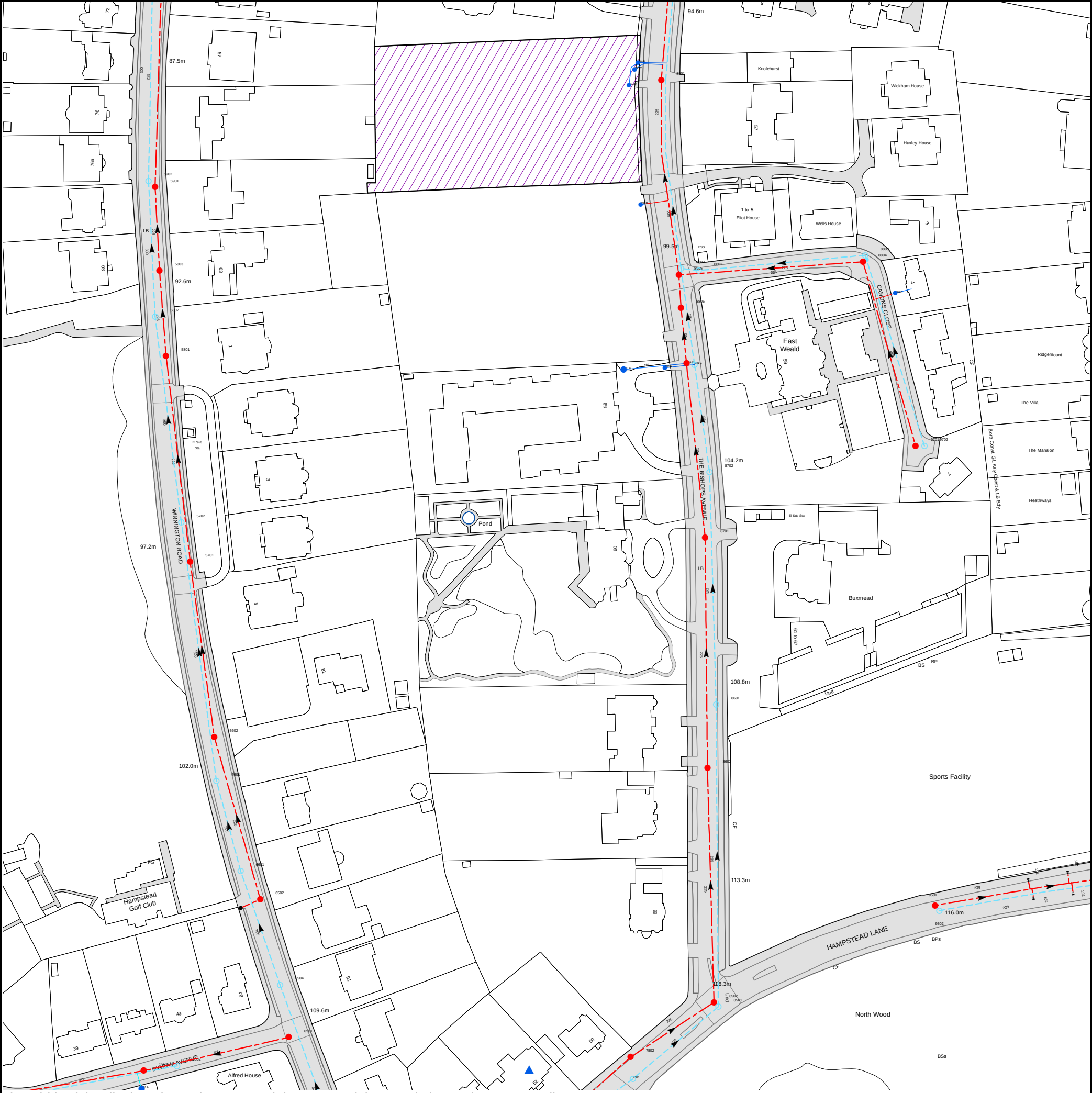
Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk



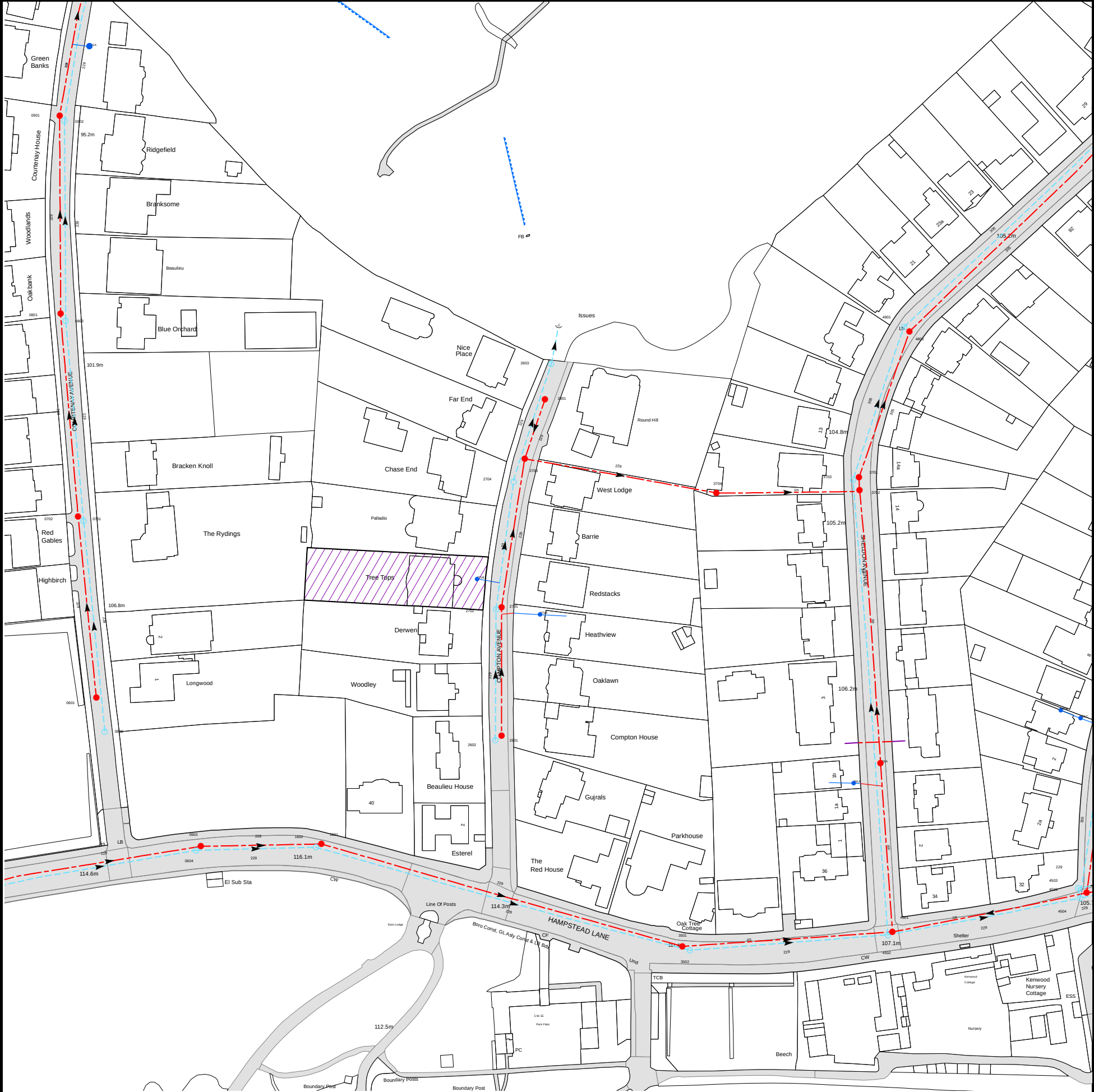
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 526750,187750

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 (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9701	104.6	102.47
9702	104.64	102.87
9501	115.86	109.94
9502	115.93	112.83
7501	115.34	n/a
7502	115.27	112.17
8501	116.1	n/a
8502	115.99	n/a
8602	110.62	n/a
8601	.01	n/a
8701	105.64	102.39
8702	104.2	102.57
781A	103.75	99.99
881A	102.75	100.5
881C	101.9	100.2
881B	101.9	98.49
8806	100.64	97.24
981A	n/a	n/a
8805	99.86	n/a
8801	.01	n/a
8802	99.74	97.98
8804	101.3	98.54
8803	101.17	98.49
791B	n/a	n/a
791D	96.6	93.57
8901	95.72	92.06
791C	94.89	93.69
791E	94.89	93.42
551A	107.85	105.7
5501	108.47	103.88
5502	108.88	104.82
6501	109.96	106.28
6504	108.54	105.63
6502	106.13	102.56
6601	.01	n/a
5601	102.39	99.7
5602	101.2	97.72
5701	97.25	93.65
5702	97.12	n/a
5801	94.04	90.94
5802	93.3	91.23
5803	92.43	89.32
5901	89.88	86.64
5902	89.74	87.09
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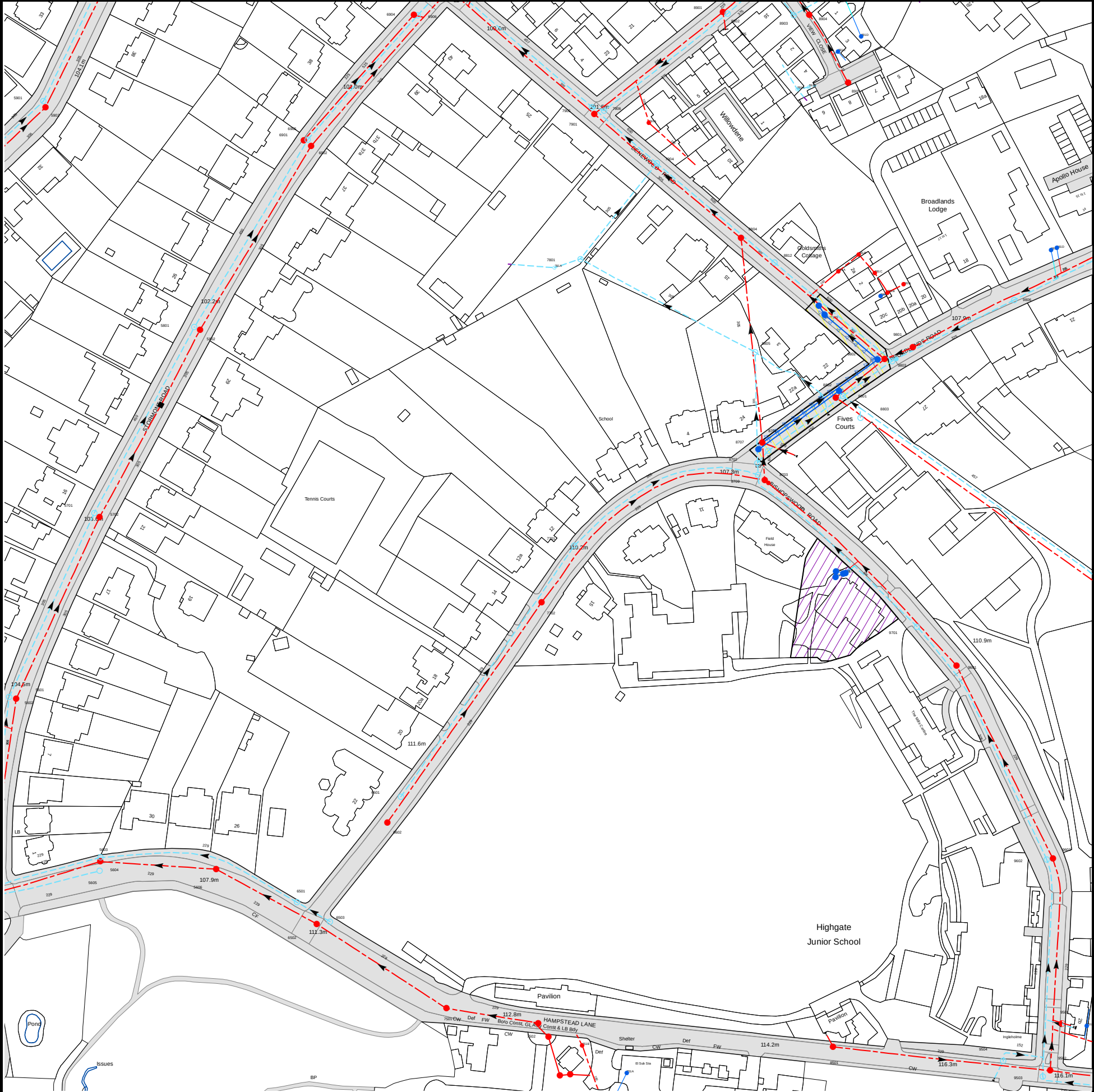
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 527250,187750

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4506	105.75	103.01
4504	105.75	102.48
461C	n/a	n/a
2601	112.21	109.38
461B	n/a	n/a
271A	n/a	n/a
2702	107.64	105.1
2701	107.51	104.47
271B	107.02	105.08
3704	n/a	n/a
3702	105.07	99.64
2704	104.98	102.46
3703	104.97	101.26
3701	105.03	99.56
2703	104.54	101.24
2801	103.5	101.75
2803	103.09	101.72
4802	104.58	98.65
4801	104.48	100.26
3502	110.61	108.35
3501	110.75	106.72
4502	107.08	103.94
4501	107.01	102.02
4503	105.65	104.61
0604	115.26	112.76
1602	116.05	112.74
0603	115.21	111.42
1601	115.95	111.19
361A	n/a	n/a
461A	n/a	n/a
2602	112.29	110.03
0901	94.71	91.8
0801	101.17	98.19
0902	94.71	92.27
0802	101.24	98.8
0702	104.17	100.77
0701	104.27	101.72
091A	92.26	90.15
0601	110.66	106.93
0602	109.5	106.2
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 527750,187750

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
9504	115.8	114.66
9503	115.94	112.48
9502	115.99	112.31
9501	115.23	112.64
951A	n/a	n/a
8801	106.81	103.64
n/a	n/a	n/a
9803	107.33	103.43
n/a	n/a	n/a
9802	107.32	102.8
9801	107.56	104.76
9806	109.08	107.62
981B	n/a	n/a
981A	n/a	n/a
881C	n/a	n/a
881A	n/a	n/a
881B	n/a	n/a
981C	n/a	n/a
981D	n/a	n/a
9602	112.88	109.8
9603	112.98	109.96
9601	110.97	107.69
9701	110.19	106.84
871B	110.01	106.94
871A	109.1	105.94
871C	109.1	105.89
871D	108.98	107.88
8803	105.55	104.66
75ZT	n/a	n/a
75ZV	n/a	n/a
751A	n/a	n/a
8501	115.33	114.56
751B	n/a	n/a
75ZS	n/a	n/a
7502	112.94	108.8
7501	112.34	107.8
6502	111.2	105.51
6503	111.32	110.34
6501	110.67	109.7
5605	106.2	103.73
5606	107.93	104.27
5604	106.35	103.11
5603	106.4	105.06
6602	111.71	105.29
6601	111.6	109.39
5602	104.94	101.27
5601	104.54	101.88
7702	110.8	103.52
7701	109.91	106.25
5702	103.51	100.07
8905	104.6	103.38
891C	n/a	n/a
891D	n/a	n/a
6904	100.4	97.82
6906	100.4	97.46
8901	102.67	99.27
8902	102.7	99.8
891A	n/a	n/a
891B	n/a	n/a
8904	103.89	102.57
5901	104.3	98.43
5902	104.33	96.97
5701	103.45	100.22
5801	102.33	99.27
5802	102.34	99.03
6905	101.23	98.63
6901	101.22	98.15
6902	101.26	97.81
781A	n/a	n/a
7801	102.55	101.27
7905	101.38	98.38
7901	101.44	98.27
7906	101.46	98.93
791A	n/a	n/a
7904	102.12	99.57
8804	104	100.57
8805	104.58	102.73
8702	107.02	104.73
8709	107.01	104.86
n/a	n/a	n/a
8701	106.94	102.06
8703	107.18	102.03
8707	106.91	104.59
8812	104.27	101.55
n/a	n/a	n/a
n/a	n/a	n/a
8802	106.81	103.11
981E	n/a	n/a
8903	103.8	102.56

Manhole Reference	Manhole Cover Level	Manhole Invert Level
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Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

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

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

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

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

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

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

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

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

	Inlet		Outfall
	Undefined End		

Other Symbols

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

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

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Chamber
	Operational Site

Ducts or Crossings

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

5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 526750,187750

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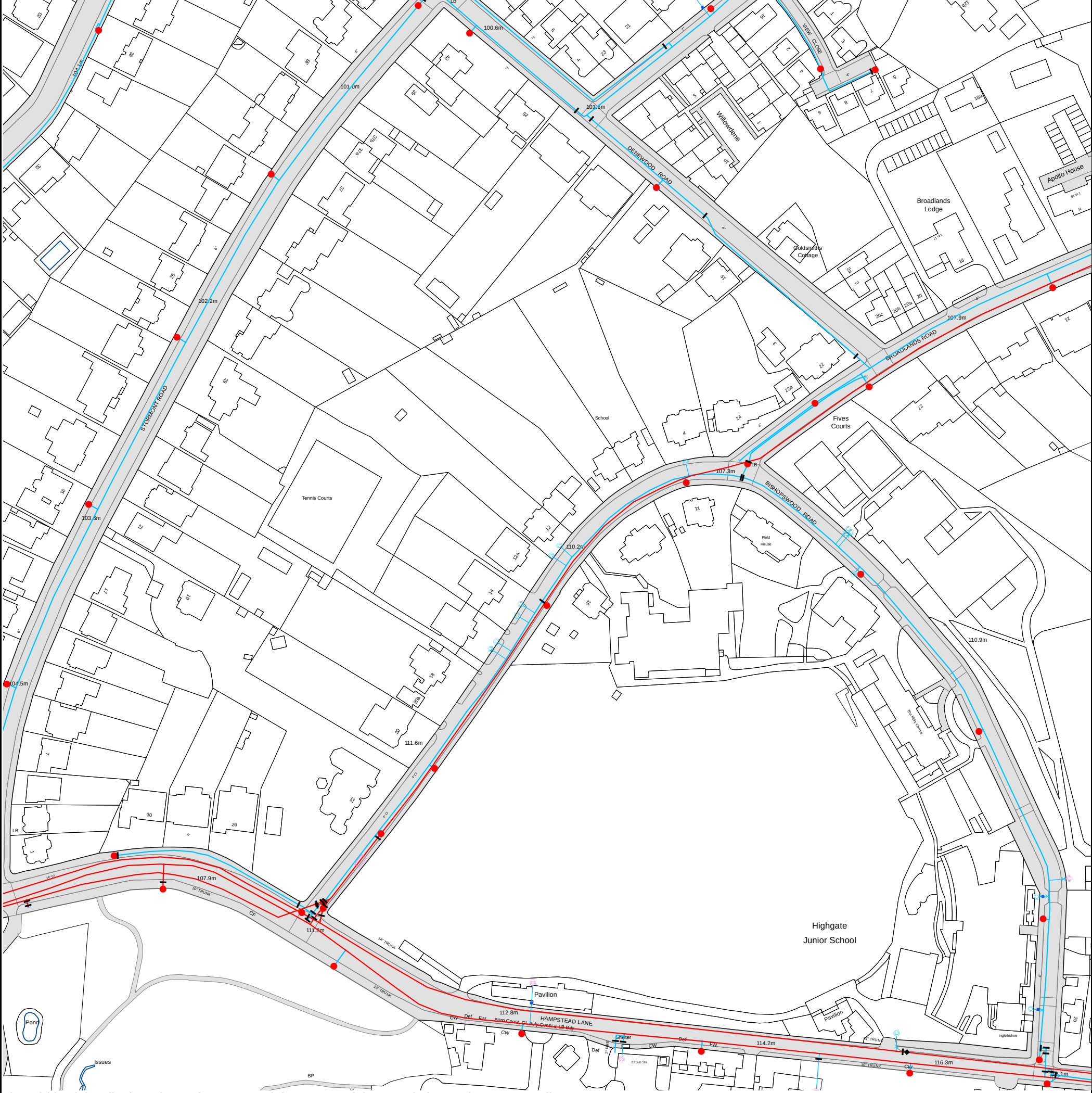
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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 527250,187750

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Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

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

Hydrants

- Single Hydrant

Meters

- Meter

End Items

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

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

Operational Sites

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

Other Symbols

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

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

- Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.