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SUDS AND DRAINAGE STRATEGY

60 Long Lane, Ickenham, UB10 8SZ

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Prepared by: JOMAS ASSOCIATES LTD **For** Parmar Ventures Ltd

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Quality Standards Control

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the originators and approved by a director.

Revision	*V01*
Date	24/07/2026
Prepared by	A Wallace
Checked by	A Alsop
Authorised by	A Wallace

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1 EXECUTIVE SUMMARY

This SUDS and drainage strategy reviews the existing drainage arrangement at the application site and proposes a surface water drainage strategy in line with Local Authority and Lead Local Flood Authority (LLFA) guidance.

We understand that the proposed development will involve demolition of existing building and construction of a block of 8 new dwellings with associated external works and off-street parking.

Flooding

The site is located within flood zone 1, so no flood risk assessment is required. An overview of flooding has been completed with the sources of flooding assessed and proposed mitigation measures listed in the table below.

Source	**Risk Category (after mitigation)**	**Comments**
Fluvial (Rivers and Sea)	Very Low	Site within flood zone 1
Coastal and tidal	Negligible	Not near coast or tidal waterbody
Groundwater	Low	Low due to impermeable ground
Surface water	Low	Low due to natural topography and presence of surface water drainage and falls away from the site
Sewers	Low	Low due to natural topography and sewer location
Reservoirs	Very Low	Reservoir at low danger of failure

Surface Water Drainage

The proposed strategy presented in detail in this report aims to restrict surface water discharge to no greater than 2 l/s in accordance with best practice. Attenuation and reduced discharge will be provided for all storm events up to and including the 1 in 100-year storm plus 40% allowance for climate change.

An additional 10% allowance for urban creep has been included in the sizing of surface water storage.

Maintenance/management of all onsite drainage infrastructure has been considered within a separate maintenance plan appended to this report. This will be updated through the development process.

The proposed drainage strategy is entirely based on-site with the existing sewer connection to be reused, or a new connection built if the existing outfall cannot be found.

Overall, the proposals provide a high level of water treatment, runoff reduction and flooding protection for the proposed development and are in accordance with all requirements of the Lead Local Flood Authority (LLFA).

Foul Drainage

It is proposed to discharge the foul drainage from the site into the existing Thames Water sewer in the street.

2 INTRODUCTION

2.1.1 Jomas was commissioned to undertake a Drainage Assessment for the proposed development of land located at 60 Long Lane, Ickenham, UB10 8SZ

2.1.2 We understand that the proposed development will involve demolition of the existing buildings and construction of a new apartment block with associated external works.

2.1.3 This SUDS and Drainage Assessment has been produced in support of a planning application and should be read in conjunction with the other planning documents.

3 SITE DESCRIPTION

3.1.1 The site is approximately 1028 square metres in size and is occupied by an existing dwelling.

3.1.2 Pre-development, the site is 44% impermeable (450 square metres). Post development, the impermeable area will increase to 56% (580 square metres).

3.1.3 The site location information is as follows:

- Nearest Postcode: UB10 8SZ

3.2 Topography

Site Topography

3.2.1 The site survey is provided in Appendix A. The site is generally rectangular in shape and generally flat.

4 DESIGN PRINCIPLES AND POLICY REQUIREMENTS

4.1.1 Since April 2015, Lead Local Flood Authorities (LLFA's) have become a statutory consultee on surface water drainage for many planning applications. For this site, the following is considered to be the required level of detail required for planning approval:

4.1.2 Report to be prepared in accordance with the National Planning Policy Framework (NPPF), the accompanying Planning Practice Guidance (PPG), and the Local Strategic Flood Risk Assessment (SFRA), Preliminary Flood Risk Assessment (PFRA), Surface Water Management Plan (SWMP) and SUDS policies as the Lead Local Flood Authority (LLFA).

4.2 General Principles for Flooding

4.2.1 The National Planning Policy Framework (NPPF) states that when determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere and only consider development appropriate in areas at risk of flooding where informed by a site-specific FRA. This assessment is required for:

"Proposals of 1 hectare (ha) or greater in Flood Zone 1, all new development (including minor development and change of use) in Flood Zones 2 and 3 and an area within Flood Zone 1, which has critical drainage problems as notified to the local planning authority by the Environment Agency (EA)."

4.2.2 In accordance with the Planning Practice Guidance (PPG), which supports the NPPF, the objectives of this FRA are to establish:

- *Whether a proposed development is likely to be affected by current or future flooding from any source;*
- *Whether it will increase flood risk elsewhere;*
- *Whether the measures proposed to deal with these effects and risks are appropriate.*

4.3 General Principles for Surface Water Drainage

4.3.1 The DEFRA Sustainable Drainage Systems Non-Statutory Technical Standards for Sustainable Drainage Systems, Local Flood Risk Management Strategy and the London Plan require sustainable drainage systems in all development to reduce surface water runoff and provide water treatment on site. This includes but is not limited to addressing the following issues in order of preference:

- store rainwater for later use
- use infiltration techniques, such as porous surfaces in non-clay areas
- attenuate rainwater in ponds or open water features for gradual release
- attenuate rainwater by storing in tanks or sealed water features for gradual release
- discharge rainwater direct to a watercourse
- discharge rainwater to a surface water sewer/drain
- discharge rainwater to the combined sewer.

Consideration must be given to the direction of water flow across the site and where this may be dispersed and incorporating any features that will help reduce surface water run-off. All developments should achieve greenfield rates where possible, or at least a 50% reduction in surface water discharge and this needs to be demonstrated as part of the planning submission.

5 FLOODING INFORMATION

5.1 Flood Risk from Rivers (Fluvial)

5.1.1 As the site is within Flood Zone 1, there is a low risk of fluvial flooding to the site.

5.1.2 Based on the above, the risk of flooding from rivers is considered very low.

5.2 Coastal and Tidal Flood Risk

5.2.1 The site is located inland and is not near any tidally influenced watercourses; therefore, there is negligible risk of flooding from this source.

5.3 Geology and Hydrogeology

5.3.1 Groundwater flooding occurs when the water table rises to the surface and is most likely to occur in low-lying areas underlain by permeable rocks.

5.3.2 The British Geological Survey (BGS) and Aquifer Maps on the MAGIC map identifies the area as follows:

Bedrock – London Clay Formation-Clay, silt and sand. These sedimentary rocks are marine in origin. They are detrital and comprise coarse- to fine-grained slurries of debris from the continental shelf flowing into a deep-sea environment, forming distinctively graded beds.

Superficial Drift – None recorded

5.3.3 As the bedrock is predominantly clay and impermeable this will restrict the risk of groundwater flooding with the overall risk considered to be Low.

5.4 Surface Water Flood Risk (Overland Flows)

5.4.1 Surface water flooding occurs when the rainwater does not drain away through the normal drainage system or infiltrate the ground, but instead lies on or flows over the ground.

5.4.2 The EA produced a Risk of Flooding from Surface Water Map in January 2025. The maps were produced using 'direct rainfall' modelling. Although they consider local drainage capacity, non-surface water influences such as rivers, seas or groundwater are not considered. The map is based on LIDAR topographic data which is not suitable for site specific assessment and therefore, where available, topographic survey data should be used to provide a more accurate understanding of potential flow paths.

5.4.3 The map shows the entire country within four different risk categories, defined below in Table 1.

Table 1: EA Surface Water Flood Risk Categories

Risk Category	Definition

High	Each year, there is a chance of flooding of greater than 1 in 30 (3.3%)
Medium	Each year, there is a chance of flooding of between 1 in 30 (3.3%) and 1 in 100 (1%)
Low	Each year, there is a chance of flooding of between 1 in 100 (1%) and 1 in 1000 (0.1%)
Very Low	Each year, there is a chance of flooding of less than 1 in 1000 (0.1%)

5.4.4 An extract of the map, provided below, shows that the site is generally at low risk of surface water flooding.



Figure 1: EA Flood Risk from Surface Water Map

5.4.5 Proposed floor levels will be raised above the existing ground to ensure the risk of flooding is minimised, and overland flow paths are maintained through the site to ensure free flow of water.

5.4.6 Based on the EA's mapping, historical data and local topography, risk of surface water flooding to the site is considered to be Low.

5.5 Sewer/Drainage Flood Risk

5.5.1 Sewer flooding is often caused by excess surface water entering the drainage system when there is insufficient sewer capacity to cope with this excess water, but also due to 'one off' events such as blockages.

5.5.2 Thames Water is the statutory undertaker for the local public sewer network. The nearest sewers to the site are located in the street frontage.

5.5.3 As these sewers are at a lower level than the site, the risk of flooding is low. A review of the local PFRA does not identify any flooding incidents at or near to the site.

5.5.4 On the basis there is considered to be a Low risk of sewer flooding to the site.

5.6 Reservoir Flood Risk

5.6.1 The EA has produced a Reservoir Flood Map that shows that the site is at low risk from reservoir flooding. This map indicates very low risk of reservoir flooding at this site.

5.6.2 It should be emphasised that the risk of flooding from reservoir breach is very small since the EA is the enforcement authority for the Reservoirs Act (1975) and all large raised reservoirs are inspected and supervised by reservoir panel engineers.

5.6.3 On the basis there is considered to be a very low risk of reservoir flooding to the site.

5.7 Summary of risk levels

5.7.1 Post-development, the risk of flooding is summarised below.

Table 2: Flood Risk Categories

Source	Risk Category
Fluvial (Rivers and Sea)	Very low
Coastal and tidal	Negligible
Groundwater	Low
Surface water	Low
Sewers	Low
Reservoirs	Very low

6 SITE DRAINAGE INFORMATION

6.1.1 The DEFRA Sustainable Drainage Systems Non-Statutory Technical Standards for Sustainable Drainage Systems and the 2025 SUDS Guidance states that the following options must be considered for disposal of surface water runoff in order of preference:

- Reuse for non-potable purposes
- Discharge to ground
- Discharge to a surface water body
- Discharge to a surface water sewer
- Discharge to a combined sewer

Discharge to Ground

6.1.2 The potential for surface water to discharge to ground has been assessed through a review of the likely ground conditions and possible infiltration structures.

6.1.3 Geology is identified in section 5.3 above and identifies the area as underlain by impermeable clay.

6.1.4 Based on the above and presence of surface water sewers in street, it is concluded that infiltration is not possible on this site.

Discharge to Surface Water Body

6.1.5 There are no watercourses near the site suitable for discharge of surface water.

Discharge to Surface Water Sewer/Combined Sewer

6.1.6 Discharge to the public sewer network should only be considered once all other options for draining surface water from the site have been exhausted.

6.1.7 It is proposed to connect to the surface water sewer in the road frontage via the existing connection subject to approval from Thames Water.

6.2 Sustainable Drainage Systems (SuDS)

6.2.1 To maximise the potential use of SuDS at the site, a review has been undertaken as shown in Table 3 in accordance with the SuDS Hierarchy. This review highlights the components referenced in the SuDS Hierarchy and provides recommendations on whether the components could be incorporated into the development.

Table 3: SuDS Selection Based on the SuDS Hierarchy

Component	Recommendation
Green/Blue roofs	Whilst the use of green and blue roofs provides additional environmental benefits such as enhanced aesthetics and ecology, its exposure to wind and orientation must be considered. Access to undertake the construction and maintenance easily and safely is also a high priority. If feasible, depending on the roof design, a green/blue roof will provide water quality, biodiversity and aesthetic benefits to the site. Additionally, the green/blue roof/s will offer some attenuation for

Component	Recommendation
	run-off, reducing volumes of run-off and in higher frequency events (i.e. 1in2 year storms) will result in no run-off for the building. Roofs are pitched and not suitable for green roofs
Basins and Ponds	Ponds and attenuation basins can provide overland storage of surface water whilst also providing additional biodiversity and aesthetic/amenity value. There is insufficient space for a basin or pond
Filter Strips and Swales	Swales are linear vegetated drainage features, which provide overland conveyance and storage of surface water whilst trapping sediments and hydrocarbons within run-off. They also create biodiverse areas for planting and habitat. Swales are not considered suitable for this site due to the urban setting restricting the availability of space.
Infiltration Devices	Infiltration devices are unlikely to be suitable for the main drainage system due to the low permeability of the existing ground.
Permeable Paving	Whilst incorporating attenuation storage, permeable paving also provides treatment through filtration of silt (and attached pollutants), settlement and retention of solids, adsorption of pollutants and biodegradation of organic pollutants, including petrol and diesel. External areas will be permeable paved and tanked where required.
Tanked Systems	This is the least sustainable option in terms of the SuDS Hierarchy. However, the use of tanked systems would still be of benefit compared to traditional drainage systems as it does allow run-off to be slowed down to an acceptable discharge rate. There are no tanks proposed
Other	Rainwater reuse will be included within the design for use in external areas.

7 SURFACE WATER DRAINAGE DESIGN

7.1 Site Areas

7.1.1 The development area currently comprises a number of existing buildings and external green areas. The existing and proposed areas are summarised below.

Table 4: Site Areas

Parameter	Existing (m2)	Existing (%)	Proposed (m2)	Proposed (%)
Impermeable area	450	44	580	56
Permeable area	578	56	448	44
Total area	1028	100	1028	100

7.1.2 It is assumed that the surface water runoff from the site currently drains to the sewer in the street.

7.2 Design Considerations

7.2.1 Consideration has been given to the following when calculating the proposed impermeable areas.

- The 2013 EA 'Rainfall Run-off Management for Developments' Report (SC030219) states that urban creep, the process of gradually increasing impermeable area within an urban area (through paving soft landscaped surfaces and constructed outbuildings etc), is an acknowledged issue. To include an allowance for urban creep, the impermeable area used in the drainage calculations has been increased by 10% in accordance with the recommendation made in SC030219.

7.2.2 The climate change allowance used in the Drainage Strategy is in line with updated EA guidance values published in February 2016 for increased rainfall intensities by 2115.

7.3 Existing Run-Off Rates

7.3.1 The existing run-off rates for a variety of return periods have been calculated using the Wallingford method.

7.3.2 The total site area is 1028 square metres and is 44% impermeable, resulting in an impermeable area of 450 square metres. Taking conservative peak 1 year, 30 year and 100 year rainfall rates of 50mm/hr, 125mm/hr and 185mm/hr respectively, the maximum existing peak discharge rates have been calculated as follows.

Contributing Area (ha) x 1 yr Rainfall (mm/hr) x 2.78

450/1000 x 50 x 2.78 = **17.4 l/s**

Contributing Area (ha) x 30 yr Rainfall (mm/hr) x 2.78

450/1000 x 125 x 2.78 = **43.4 l/s**

Contributing Area (ha) x 100yr Rainfall (mm/hr) x 2.78

450/1000 x 185 x 2.78 = **64.3 l/s**

7.4 Greenfield Run-Off Rates

7.4.1 The greenfield runoff rates have been calculated using the Wallingford method and are summarised below with calculations provided in Appendix B.

Table 5: Existing Greenfield Run-off Rates

Parameter	Greenfield Discharge (l/s)	Existing Discharge (l/s)	Proposed Discharge (l/s)
QBAR	0.4	NA	NA
1 year	0.4	17.4	2
30 year	1.0	43.4	2
100 year	1.4	64.3	2
100 year +40%	NA	NA	2

7.4.2 Site discharge should be as close to greenfield values as possible. However, as the rates are low, discharge will be set at no greater than 2l/s for all storm events up to and including the 100 year +40% climate change storm.

7.5 Flood Risk Reduction

7.5.1 As infiltration is assumed not possible on this site, reducing the post development discharge rate to 2l/s is achieved through attenuation. Site discharge is via gravity to the existing sewer in the street.

7.5.2 By controlling run-off rates to less than existing and providing attenuation for all storm events up to and including a 1 in 100-year storm plus 40% climate change allowance, the risk of downstream flooding will be minimised.

7.5.3 Details of the drainage system and attenuation structures are presented in the design drawings and calculations in Appendix B.

7.5.4 Attenuation is provided in the permeable paving subbase with flow controlled via an orifice plate on site. A total attenuation volume of approximately 24 cubic metres is proposed within the permeable paving subbase and tank to cater for the 100 year +40% storm event.

7.5.5 The calculations include an assessment of the attenuation for all storm events up to the 100-year storm +40% climate change.

7.6 Exceedance Flooding and Overland Flow

7.6.1 The area is not subject to overland flow routes or surface water flooding as discussed in the Flooding section above.

7.6.2 The drainage system has been designed to cater for the 1 in 100 year + 40% climate change storm. ie in this storm event all surface water will be collected on site and slowly released.

Thus, the overland flow route will only be in use in the event of drainage network failure, storms in excess of the 1 in 100 year + 40% climate change storm or flows from offsite flowing through the site.

7.6.3 Due to the site levels being flat, all overland flow will pond within the green areas and permeable paving and either infiltrate into the ground or flow into the drainage system. See overland flow plan in Appendix B.

7.7 Consents, Offsite Works and Diversions

7.7.1 The proposed surface water drainage strategy is accommodated totally on-site, with the only requirement for off-site works being the new foul and surface water connection to the TW sewers should it be required.

7.8 Maintenance

7.8.1 A SuDS maintenance plan has been prepared to outline the management of the potential SuDS features. The maintenance plan is provided in Appendix C.

8 DRAINAGE DURING CONSTRUCTION

8.1 Construction Run-off Management

8.1.1 Installing the surface water and foul drainage system, whilst managing temporary run-off, are key aspects of the construction works involved in any development. The information provided below is in accordance with the 'C698 Site handbook for the construction of SUDS' (CIRIA, 2007).

8.1.2 Please note that the measures recommended below are recommendations only and need to be confirmed at the construction stage by the client and the contractor.

8.2 Management of Construction (Including Drainage)

8.2.1 Drainage is typically an early activity in the construction stage of a development, taking form during the earthworks phase. However, final construction i.e. piped drainage system connections to the SuDS devices, should not take place until the end of site development work, unless a robust strategy for silt-removal is implemented prior to occupation of the site.

8.2.2 A plan for the management of construction (including phasing of works, details of any offsite works etc.) cannot be provided at this early stage, as construction work plans are not yet known. However, the following key points are general construction issues associated with SuDS which will be addressed when these plans are complete:

- Silt-laden waters from construction sites represent a common form of waterborne pollution;
- These silt-laden waters cannot enter SUDS drainage systems unless specifically designed to accept this as it can clog the systems and pollute receiving waters. Therefore, piped drainage systems should not be connected to the attenuation SuDS devices until the late stages of construction.
- Any gullies and piped systems should be capped off during construction and fully jetted and cleaned prior to connection to the attenuation SuDS devices.

8.3 Temporary Drainage During Construction

8.3.1 The three principal aspects of drainage control during construction are trapping sediment, conveying run-off, and controlling run-off.

8.3.2 Sediment traps and barriers can include basin traps and sediment fences (with any necessary boundary controls). The principal basins are to be installed after the construction site is accessed. Sediment fences and barriers will then be installed as needed during grading.

8.3.3 Conveyance of run-off can be achieved through small ditches/stream, storm drains, channels and sloped drains with sufficient inlet/outlet protection.

8.3.4 Slope stability needs to be considered when using any channels to convey run-off across the site into any basins etc.

8.3.5 Run-off control measures will need to be implemented in order not overwhelm the temporary system and cause flooding issues. Run-off rates from the site will be managed so they are no greater than pre-development or in keeping with the best practice guidance to minimise risk of blockage. Any additional conveyance measures are to be installed as needed during grading.

8.3.6 Run-off control to include provision of perimeter ditches or appropriate levels grading to direct any water from the construction site to remain on site.

8.3.7 Any necessary surface stabilisation measures are to be applied immediately on all disturbed areas where construction work is either delayed or incomplete.

8.3.8 Maintenance inspections are to be performed weekly, and maintenance repairs to be made immediately after periods of rainfall.

8.4 Protection of Drainage Infrastructure during Construction

8.4.1 All drainage infrastructure should be protected from damage by construction traffic and heavy machinery through the implementation of measures such as protective barriers, and storing construction materials away from the drainage infrastructure.

Appendix A: Proposed Development Details

AMENDMENDS	
A	No 58 and 62 amended 19/09/17
B	Car park adjusted 18/02/21

MILTON ROAD

Cycle store for 8 bikes

Existing Laurels retained, spread reduced to 2.5m

No 66

No 64

No 62

No 60

No58

Parking area

Disable Parking space

Parking space

Parking space

Parking space

Parking space

Parking space

Parking space

Parking space

Parking space

Hard standing

LONG LANE

PROPOSED SITE PLAN

60 LONG LANE, ICKENHAM, UB10 8SZ

Scale Bar

0 1 2 3 4 5 6 7 8 9 10 Metres

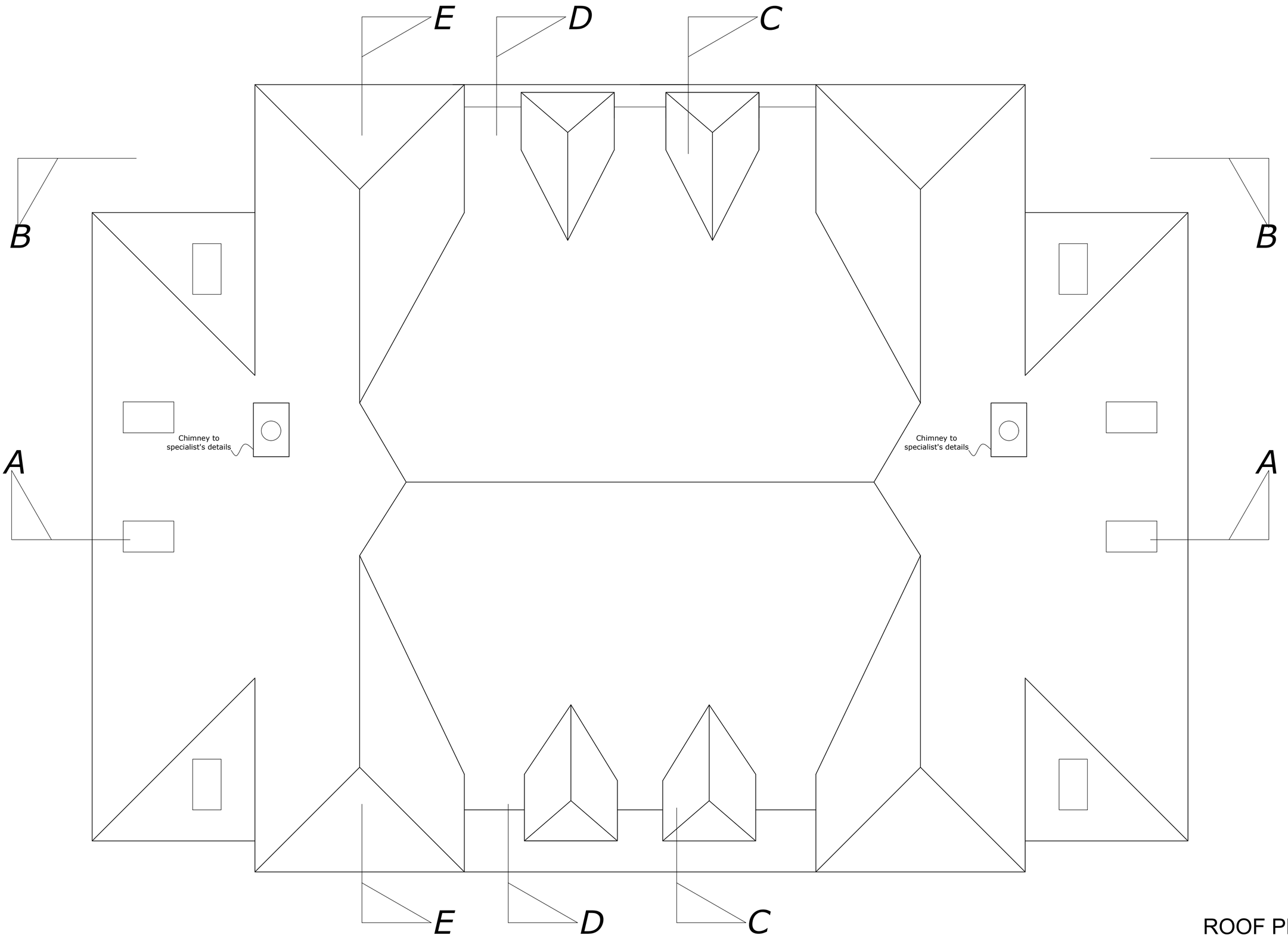
1:200 @ A1

THE GILLETT MACLEOD PARTNERSHIP
Chartered Architects & Town Planning Consultants
1 High Road Old Eastcote Pinner Middlesex HA5 2EW tel. 0208 868 1333

Drg. No. 17/3124/102B
Scale 1:200
Date 19/09/17
Drawn by SB

REVISION B

C drawer



ROOF PLAN

60 LONG LANE, ICKENHAM, UB10 8SZ

Scale Bar 1:50 @ A2 Metres

0 1 2 3 4 5

THE GILLETT MACLEOD PARTNERSHIP
Chartered Architects & Town Planning Consultants
1 High Road Old Eastcote Pinner Middlesex HA5 2EW tel. 0208 868 1333

Drg. No. 17/3124/505
Scale 1:50
Date 13/12/23
Drawn by AK

REVISION

C drawer

Appendix B: Drainage Drawings and Calculations

Asset Location Search

Property Searches

Wallace Engineering
22 PARK RISE,
HARPENDEN
AL5 3AL

Search address supplied 60
Long Lane
Ickenham
Uxbridge
UB10 8SZ

Your reference LONG LANE

Our reference ALS/ALS Standard/2026_5360024

Search date 20 July 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

Asset Location Search

Property Searches

Search address supplied: 60, Long Lane, Ickenham, Uxbridge, UB10 8SZ

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

Asset Location Search

Thames Water Property Searches

Waste Water Services

Please provide a copy extract from the public sewer map.

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.

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way

Hatfield
AL10 9EZ
Tel: 0845 7823333

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

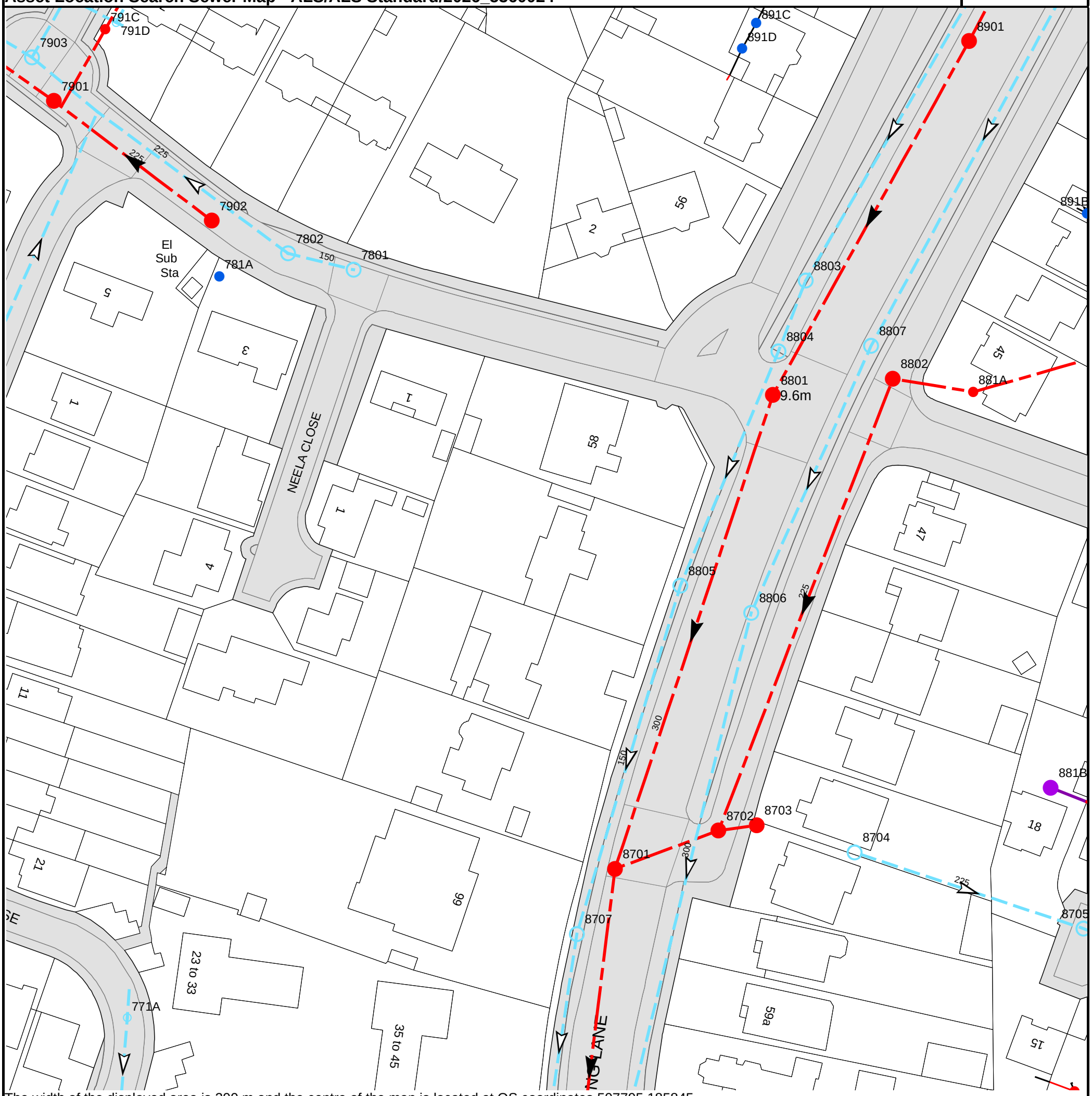
Clean Water queries

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

Asset Location Search Sewer Map - ALS/ALS Standard/2026_5360024



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 507795,185845

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
8705	38.49	36.69
8805	39.47	38.57
7801	39.92	38.83
771A	n/a	n/a
8801	39.24	36.45
791D	n/a	n/a
7802	39.98	38.71
891B	n/a	n/a
7902	39.90	38.06
871B	n/a	n/a
7903	39.98	37.46
881B	n/a	n/a
8707	39.13	38.18
8701	38.96	36.27
8901	39.65	36.95
8803	39.68	38.68
8704	n/a	n/a
881A	n/a	n/a
8802	n/a	n/a
891D	n/a	n/a
8807	39.51	38.26
791C	n/a	n/a
781A	n/a	n/a
8703	38.99	37.39
8804	39.68	38.68
8806	39.10	37.95
8702	38.77	36.61
7901	n/a	n/a
891C	n/a	n/a

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

Asset Location Search
Sewer Key

0800 009 4540
property.searches@thameswater.co.uk
thameswater.co.uk/propertysearches

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 (eg. rain water from roofs, driveways 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.

Trunk Sewer: A strategic sewer which collects either foul or surface water flow from a number of subsidiary catchments and transfers this flow to a pumping station, river outfall or 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

Gulley: These sewers are generally maintained by the relevant highway authority.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. eg. 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.

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

End symbols appear at the start or end of the sewer pipe. eg. 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 that 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 and agreements etc.

- Agreement/Adoption
- Operational Site
- Chamber
- Awaiting Ordnance Survey data

Ducts or Crossings

Ducts may contain high voltage cables. Please check with Thames Water.

- Casement
- Subway
- Conduit Bridge
- Tunnel

Notes

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

If you are unsure about any text or symbology, please contact Property Searches.

16129 - 12/25

Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

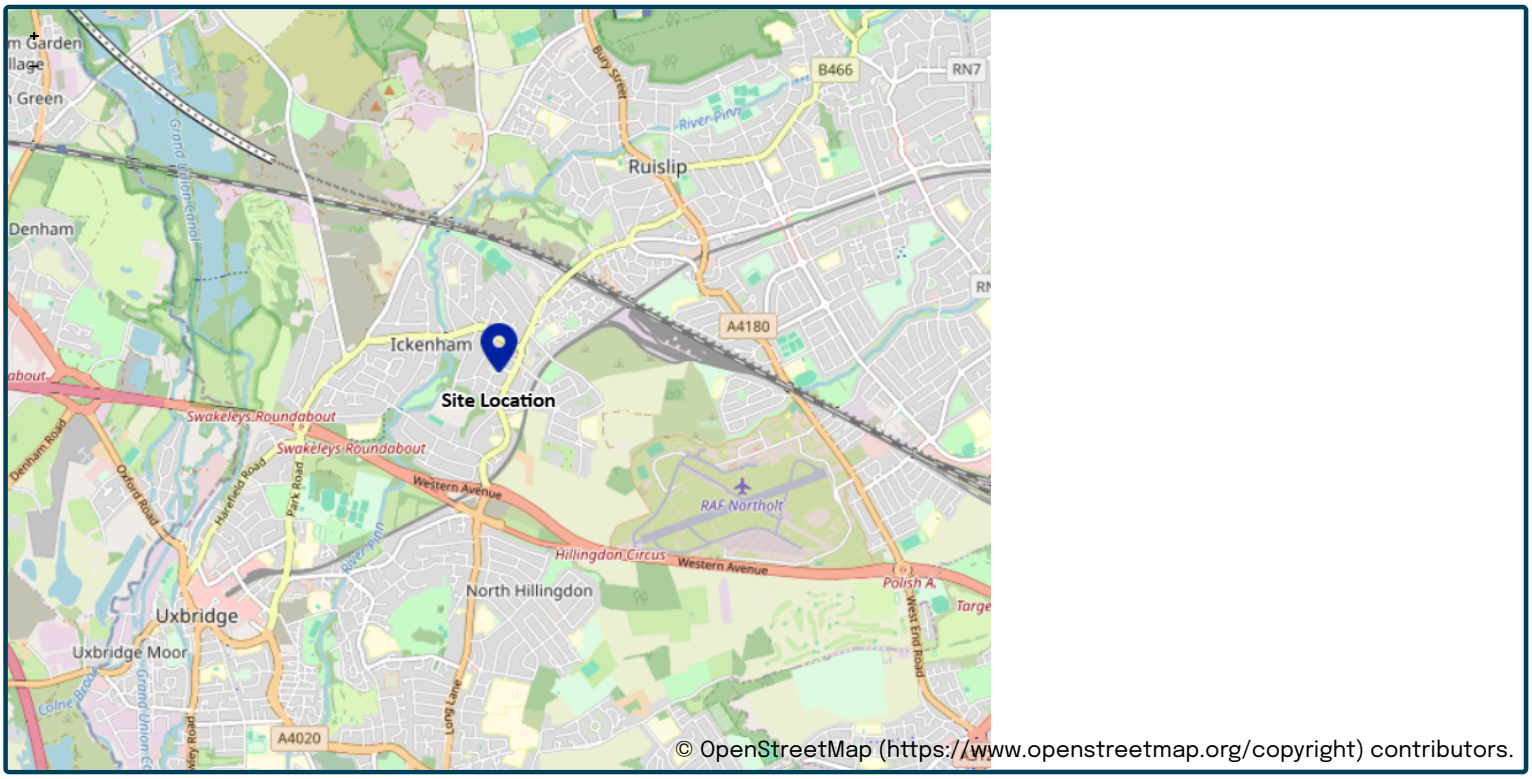
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	21/07/2026
Calculated by	AW
Reference	LONG LANE
Model version	2.2.3

Location

Site name	LONG LANE
Site location	UXBRIDGE



Site easting (British National Grid)	507791
Site northing (British National Grid)	185825

Site details

Total site area (ha)	.1028 ha

Greenfield runoff

Method

Method	IH124

IH124

	My value		Map value
SAAR (mm)	636 mm		636
How should SPR be derived?	WRAP soil type		
WRAP soil type	4		4
SPR	0.47		
QBar (IH124) (l/s)	0.4 l/s		

Growth curve factors

	My value		Map value
Hydrological region	6		6
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	IH124
Flow rate 1 year (l/s)	0.4 l/s
Flow rate 2 year (l/s)	0.4 l/s
Flow rate 10 years (l/s)	0.7 l/s
Flow rate 30 years (l/s)	1.0 l/s
Flow rate 100 years (l/s)	1.4 l/s
Flow rate 200 years (l/s)	1.7 l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://www.uksuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

ALL DIMENSIONS TO BE CHECKED BY CONTRACTOR
NOTE: CONTRACTOR TO NOTE THE LIKELY PRESENCE OF MULTIPLE EXISTING SERVICES.
ALL SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION AND DIVERTED AS NECESSARY

N
W E
S

NODE 8
SWIC
CL 39.50
IL 39.14

NODE 5
SWIC
CL 39.50
IL 39.19

NODE 7
SWIC
CL 39.40
IL 38.96

NODE 4
SWIC
CL 39.40
IL 39.02

NODE 3
SWIC
CL 39.45
IL 38.93

NODE 9
SWIC
CL 39.49
IL 39.00

NODE 6
SWIC
CL 39.51
IL 39.07

NODE 1

FWIC
CL 39.40
IL 38.62

FWIC
CL 39.40
IL 38.53

FWIC
CL 39.40
IL 38.60

FWIC
CL 39.40
IL 38.64

FWIC
CL 39.40
IL 38.75

FWIC
CL 39.45
IL 38.40

RWP AND WATER BUTT

RWP AND WATER BUTT

FFL 39.550

39.40+

39.40+

+39.40

+39.49

+39.49

+39.57

39.51+

EX. SWMH
CL 39.33
IL 38.87
ORIFICE PLATE TO BE INSTALLED TO OUTFALL TO RESTRICT DISCHARGE TO 2l/s
NODE 2

<Ø150

PERMEABLE PAVED ATTENUATION AREA
GL 39.40
TOP OF STORAGE 39.30
BASE OF STORAGE 39.00
AREA = 240m2
VOLUME = 24m3

BREAK INTO EXISTING FOUL SEWER AND CONSTRUCT NEW DEMARCATION CHAMBER TO TW APPROVAL

APPROX LOCATION OF EXISTING CONNECTION TO TW SEWER
FOUL INVERT 36.70 (TBC)

EXISTING CONNECTION TO EXISTING TW SEWER (TBC)
IL 38.60 (TBC)

<APPROX ROUTE OF TW SW SEWER (TBC)

<APPROX ROUTE OF TW FOUL SEWER (TBC)

MH CL 39.51

Cycle store for 8 bikes

Area Of Bushes & Bramble

Parking area

Disable Parking space

Parking space

Hard standing

No. 62

No. 60

No. 58

No 62

No 60

No58

Shed

Machine Room

Solar Panels

Concrete Paving

Gravel / Concrete

Grass

Asphalt

Concrete Paving

Kerb

Drop Kerb

Brick Wall 1.4m & Pillars 2.4m

Brick Wall 1.4m & Pillars 4.4m

Brick Wall 1.7m & Pillars 2.1m

Laurel Hedge 7m

Lanboard Fence 1.95m

Panel Fence 1.8m

Chain Link Fence 1.1m

Hedge 6m

Holly 9m

Cypress Screen 6m

Elderberry 5m

Holly 5m

Cherry 4.5m

Silver Birch 10m

Ash 11m

Fruit 6m

Cypress 8m

Cypress 5m

Stump 6m

Laurel 6m

Ash 7m

Cypress 7m

Trees 11m

Wall Remains

Brick Wall 0.8m

Conc. Par.

Roof GU

Eave

Ridge

Fascia

Chimney

Floor level

Threshold

Up

GU

RWP

SVP

OHC

LC

SC

TP

Kerb

Roof

Eave

Ridge

Fascia

Chimney

Threshold

Floor level

Solar Panels

Gravel / Concrete

Grass

Asphalt

Concrete Paving

Kerb

Drop Kerb

Brick Wall 1.4m & Pillars 2.4m

Brick Wall 1.4m & Pillars 4.4m

Brick Wall 1.7m & Pillars 2.1m

Laurel Hedge 7m

Lanboard Fence 1.95m

Panel Fence 1.8m

Chain Link Fence 1.1m

Hedge 6m

Holly 9m

Cypress Screen 6m

Elderberry 5m

Holly 5m

Cherry 4.5m

Silver Birch 10m

Ash 11m

Fruit 6m

Cypress 8m

Cypress 5m

Stump 6m

Laurel 6m

Ash 7m

Cypress 7m

Trees 11m

Wall Remains

Brick Wall 0.8m

Conc. Par.

Roof GU

Eave

Ridge

Fascia

Chimney

Floor level

Threshold

Up

GU

RWP

SVP

OHC

LC

SC

TP

Kerb

Roof

Eave

Ridge

Fascia

Chimney

Threshold

Floor level

Solar Panels

Gravel / Concrete

Grass

Asphalt

Concrete Paving

Kerb

Drop Kerb

DRAINAGE CONCEPT LEGEND

18.30+	Proposed Level
FFL 80.90	Finished floor level
	Tanked Permeable Paving
Øxx@1:xx>	Perforated Pipe - Diameter and fall
Øxx@1:xx>	Stormwater Pipe - Diameter and fall
SMH Ø1200 CL 80.90 IL 80.00	Manhole type - SMH Surface Water Diameter Cover Level Invert Level
SWIC Ø450	Polypropylene Inspection Chamber (PPIC)
RWP	Rain Water Pipe
Øxx@1:xx>	Foul Pipe - Diameter and fall
FMH Ø1200 CL 80.90 IL 80.00	Manhole type - FMH Foul Water Diameter Cover Level Invert Level
FWIC Ø450/Ø300	Polypropylene Inspection Chamber (PPIC)
FO	Sewer Vent Pipe/Sub Stack/Outlet
Øxx@1:xx>	Existing Stormwater Pipe
Øxx@1:xx>	Existing Foul Pipe
	Sewer to be made redundant

Job No. **P7302J3411** Rev.

DRAINAGE NOTES

1. THIS DRAWING IS FOR PLANNING ONLY AND IS NOT FOR CONSTRUCTION. IT IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.
2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES ABOVE LOCAL DATUM.
4. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION.
5. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS.
6. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD, FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1, SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE.
7. NODE NUMBERS REFER TO CALCULATIONS WITHIN DRAINAGE REPORT
8. ALL DRAINAGE INCLUDING RWP AND FO SHOWN ARE INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN AND COUNCIL APPROVAL.
9. NOTE THE PRESENCE OF NUMEROUS TREES. DRAINAGE DESIGN TO BE REVISED AS NECESSARY TO ACCOMMODATE TREE PROTECTION AND HAND DIGGING MAY BE REQUIRED FOR DRAINAGE INSTALLATION.
10. UNLESS NOTED OTHERWISE, PIPES TO BE:
    FOUL PIPES UNDER BUILDING ø100@1:40,
    FOUL PIPES EXTERNAL ø100@1:80,
    SURFACE WATER PIPES ø100@1:100

Notes.

Copyright of this plan is held by Jomas Associates Ltd.
No responsibility is taken for amendments by others.
Do not scale from copies or PDF's.

Key dimensions to be checked by engineer before major structural works commence on site.

1. This survey has been computed and drawn about O S National Grid.
2. All levels are in metres and relate to O S National Datum by GPS instruments.
3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.

Amendments

Rev	Date		By	Chkd

JOMAS
ENGINEERING ENVIRONMENTAL
Jomas Associates Ltd.
Unit 24 Sarum Complex,
Salisbury Road,
Uxbridge, UB8 2RZ

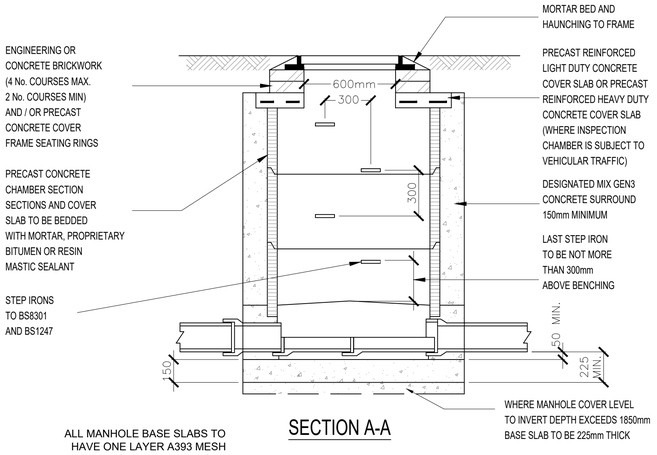
Project
60 Long Lane, Ickenham, UB10 8SZ

Drawing
Proposed Drainage Plan

Dwg no	Checked	Surveyor
C01	AW	-
Date 20.07.26	Scale 1:100 @ A1	
Job No. P7302J3411		Rev. -
Grid	Contours	Level Datum

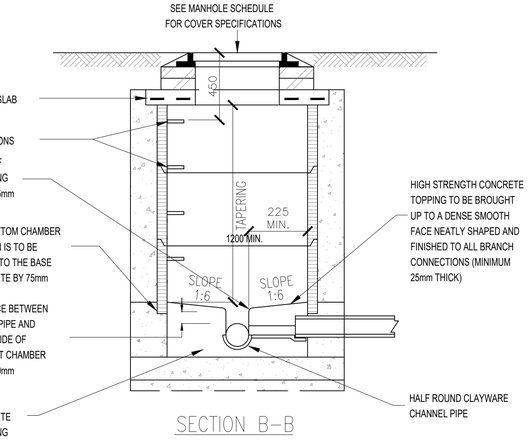
ALL DIMENSIONS TO BE CHECKED BY CONTRACTOR

NOTE: Details for private drainage only.



ALL MANHOLE BASE SLABS TO HAVE ONE LAYER A393 MESH CENTRALLY PLACED

SECTION A-A



SECTION B-B

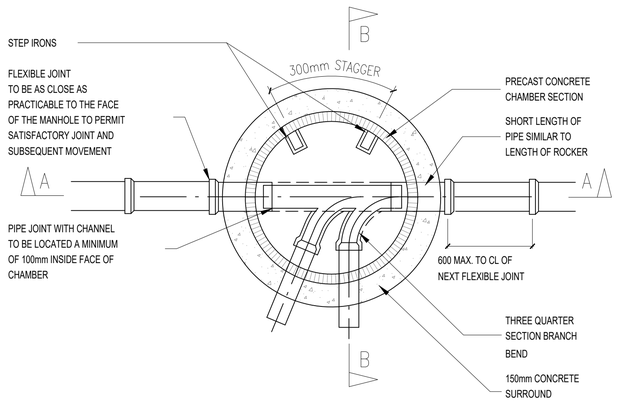
NOTES:
CHAMBERS WITH OUTGOING PIPES GREATER THAN 500mm DIAMETER SHALL BE FITTED WITH GUARD BARS, SAFETY CHAINS OR OTHER SAFETY DEVICES. TOE HOLES TO BE PROVIDED IN BENCHING OF SEWERS GREATER THAN 450mm DIAMETER FOR ACCESS TO INVERT. WHERE INTERNAL HEIGHT EXCEEDS 1800mm MANHOLE MAY BE PROVIDED WITH REDUCING COVER AND SHAFT. SHAFT DIAMETER TO BE 600mm DIAMETER OR 900mm DIAMETER IF LONGER THAN 900mm.

PIPE DIAMETER	ROCKER PIPE * LENGTH
150mm-450mm	500mm-750mm
475mm-750mm	750mm-1000mm
OVER 750mm	1200mm

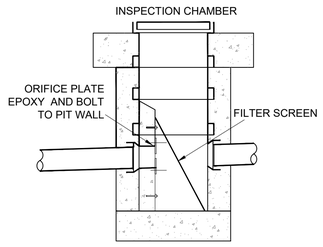
* OR LINTEL AND COMPRESSIBLE SEALANT IN ACCORDANCE WITH CLAUSE 689 OF THE SPECIFICATION.

PRECAST CONCRETE MANHOLE TYPE B (PCC) IN EXTERNAL AREAS DETAIL

SCALE 1:20



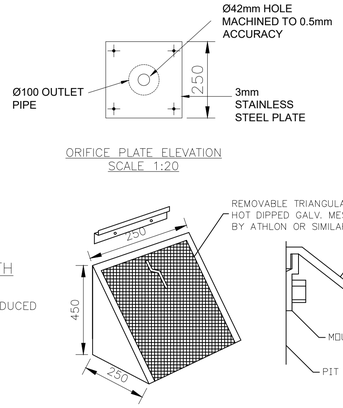
PLAN



EXTERNAL POLYPROPYLENE INSPECTION CHAMBER WITH ORIFICE PLATE (PPIC)

MAXIMUM DEPTH TO INVERT OF CHAMBER TO BE 1200mm (3000mm FOR REDUCED ACCESS)
CUT TO INTERMEDIATE SIZES

SCALE 1:20



ORIFICE PLATE ELEVATION

SCALE 1:20

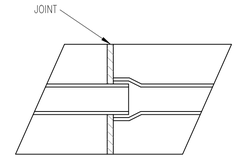
MULTI PURPOSE FILTER SCREEN

SECTION A-A

TANKED PERMEABLE PAVING DETAIL

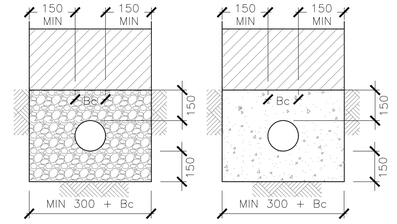
SCALE 1:20

18mm MINIMUM THICK FLEXIBLE JOINTS AT 5000c/c MAXIMUM PRE-CUT TO PIPE DIAMETER AND WITH HEIGHT AND WIDTH EQUAL TO THAT OFCONCRETE PROTECTION. JOINTS TO BE FORMED OF COMPRESSIVE BOARD



FLEXIBLE JOINTS IN CONCRETE PROTECTION

SCALE 1:10



GENERAL PIPE BEDDING DETAIL

PIPE BEDDING DETAIL FOR ALL PIPES THAT PASS BELOW OR NEAR FOUNDATIONS, PIPES WITH LESS THAN 600mm COVER IN ALL EXTERNAL AREAS AND PIPES WITH LESS THAN 1200mm COVER BELOW ROADS AND DRIVEWAYS

SELECTED FILL: FREE FROM STONES LARGER THAN 40mm, LUMPS OF CLAY OVER 100mm, TIMBER, FROZEN MATERIAL, VEGETABLE MATTER.

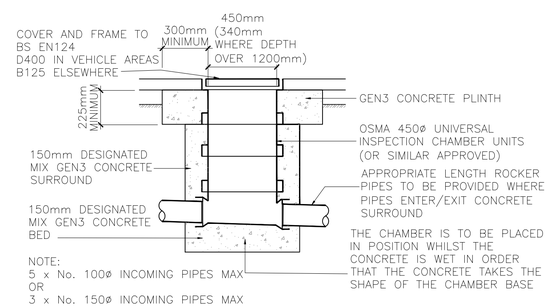
GRANULAR MATERIAL: TO CONFORM TO BS EN 1610 ANNEX B TABLE B.15 AND SHOULD BE SINGLE SIZE MATERIAL OR GRADED MATERIAL FROM 5mm UP TO A MAXIMUM SIZE OF 10mm FOR 100mm PIPES, 14mm FOR 150mm PIPES, 20mm FOR PIPES FROM 150mm UP TO 600mm DIAMETER AND 40mm FOR PIPES MORE THAN 600mm DIAMETER.

GEN1 CONCRETE IN ACCORDANCE WITH BS 8500-1:2002.

NOTE:
PIPES LESS THAN 1200mm BELOW ROADS AND LESS THAN 600mm BELOW OTHER EXTERNAL AREAS SHALL HAVE A 150mm GEN1 CONCRETE SURROUND. OTHER THAN PIPES CAST WITHIN PILECAPS ALL PIPES BELOW SUSPENDED SLAB SHALL HAVE GRANULAR SURROUND AS SHOWN.

PIPE BEDDING DETAIL

SCALE 1:10



EXTERNAL POLYPROPYLENE INSPECTION CHAMBER (PPIC)

MAXIMUM DEPTH TO INVERT OF CHAMBER TO BE 1200mm (3000mm FOR REDUCED ACCESS)
CUT TO INTERMEDIATE SIZES

SCALE 1:20

Job No. P7302J3411 | Rev.

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.
2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS.
3. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION
4. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS.
5. FOR GRAVITY SEWERS, ALL DRAINAGE AND FITTINGS ARE TO BE FLEXIBLY JOINTED UPVC TO BS EN 1401-1 OR CLAYWARE TO BS EN295 OR CONCRETE TO BS5911 PART 100
6. CHAMBER WALLS 225 THICK TO BE CONSTRUCTED IN CLASS B ENGINEERING BRICKS TO SHW SERIES 2400 IN DESIGNATION (i) MORTAR OR IN-SITU STRENGTH CLASS C16/20 CONCRETE TO CLAUSE 2602
7. CHAMBER WALLS AND COVER SLAB TO BE CONSTRUCTED IN PRECAST CONCRETE TO BS EN 1917 AND BS 5911-3.
8. CONCRETE MIXES INDICATED ON THIS DRAWING ARE DESIGNATED MIXES IN ACCORDANCE WITH BS8500-1:2006. ALL CONCRETE TO BE SULPHATE RESISTANT
9. BACKFILL TO ALL TRENCHES UNDER CARRIAGEWAYS TO BE TYPE 1 SUB-BASE MATERIAL, ELSEWHERE BACKFILL TO BE IN ACCORDANCE WITH THE SPECIFICATION, FREE DRAINING READILY COMPACTIBLE MATERIAL, FREE FROM RUBBISH AND ORGANIC MATTER, FROZEN SOIL CLAY LUMPS AND LARGE STONES. TO BE COMPACTED IN LAYERS NOT EXCEEDING 150mm THICK.
10. A FLEXIBLE JOINT SHALL BE PROVIDED AS CLOSE AS IS FEASIBLE TO OUTSIDE FACE OF ANY STRUCTURE INTO WHICH A PIPE IS BUILT, IN ACCORDANCE WITH THE DETAIL.
11. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1. SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE.
12. ALL PIPES TO BE LAID SOFFIT TO SOFFIT UNLESS NOTED OTHERWISE.
13. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH BS EN124 AND SHALL BE OF A NON-ROCKING DESIGN WHICH DOES NOT RELY ON THE USE OF CUSHION INSERTS. CLASS D COVERS SHALL BE USED IN CARRIAGEWAYS, HARD SHOULDERS AND PARKING AREAS USED BY ALL TYPE OF ROAD VEHICLES. CLASS C SHALL BE USED IN FOOTWAYS, PEDESTRIAN AREAS AND ALL COMPARABLE LOCATIONS.

Notes.

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Key dimensions to be checked by engineer before major structural works commence on site.

1. This survey has been computed and drawn about O S National Grid.
2. All levels are in metres and relate to O S National Datum by GPS instruments.
3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.

Amendments

Rev	Date		By	Chkd

JOMAS
ENGINEERING ENVIRONMENTAL
Jomas Associates Ltd.
Unit 24 Sarum Complex,
Salisbury Road,
Uxbridge, UB8 2RZ

Project
60 Long Lane, Ickenham, UB10 8SZ

Drawing
Proposed Drainage Details

Dwg no	Checked	Surveyor
C02	AW	-

Date 20.07.26 | Scale AS SHOWN

Job No. P7302J3411 | Rev. -

Grid	Contours	Level Datum

ALL DIMENSIONS TO BE CHECKED BY CONTRACTOR
NOTE: CONTRACTOR TO NOTE THE LIKELY PRESENCE OF MULTIPLE EXISTING SERVICES.
ALL SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION AND DIVERTED AS NECESSARY

N
W E
S
ASL

Cycle store for 8 bikes

FFL 39.550

EXISTING DRAINAGE SYSTEM DESIGNED FOR THE 100 YEAR +40% STORM EVENT. OVERFLOW W ILL ONLY OCCUR IN STORM EVENTS GREATER THAN THIS OR IN CASE OF SYSTEM FAILURE

+39.49

+39.57

39.51+

No. 62

No. 60

No. 58

No 64

No 62

No 60

No58

Parking area

Parking space

Disabled Parking space

Area Of Bushes & Bramble

Swimming Pool

Solar Panels

Roof storage area

Wall Remains

Concrete Paving

Gravel / Concrete

Grass

Asphalt

Kerb

Drop Kerb

Concrete Paving

Brick Wall 1.4m & Pillars 2.4m

Brick Wall 2.1m & Pillars 2.1m

Brick Wall 1.77m & Pillars 2.1m

Brick Wall 2.1m & Pillars 2.1m

Brick Wall 1.7m & Pillars 2.1m

Laurel 7m

Laurel 6m

Cypress 8m

Cypress 5m

Cypress Screen 6m

Ash 7m

Ash 11m

Holly 8m

Holly 9m

Holly 5m

Cherry 8m

Cherry 4.5m

Elderberry 5m

Silver Birch 16m

Silver Birch 10m

Fruit 6m

Hazel 6m

Trellis 1m

Laburnum 7m

Lapboard Fence 1.95m

Panel Fence 1.8m

Brick Wall 1.2m

Brick Wall 0.8m

Madrid Room

Shed

MH CL 39.51

SW 100mm

SVP

RWP

GU

SC

LC

OHC

Chimney

Ridge

Fascia

Gutter

Roof

Eave

Threshold

Floor level

Solar Panels

Job No. P7302J3411 Rev.

DRAINAGE NOTES

1. THIS DRAWING IS FOR PLANNING ONLY AND IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT SERIES DESIGN DRAWINGS, SPECIFICATIONS AND DOCUMENTATION.
2. CONSTRUCTION TO BE IN ACCORDANCE WITH ALL BRITISH AND EUROPEAN STANDARDS AND BUILDING REGULATIONS.
3. ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES ABOVE LOCAL DATUM.
4. ANY DISCREPANCIES IN THE DETAILS SHOWN ARE TO BE REPORTED TO THE EMPLOYER'S REPRESENTATIVE/ENGINEER PRIOR TO CONSTRUCTION.
5. ALL EXISTING SERVICES ARE TO BE LOCATED PRIOR TO THE COMMENCEMENT OF ANY WORKS. THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT WITH THE PROPOSED WORKS.
6. THE GENERAL SPECIFICATION OF MATERIALS AND WORKMANSHIPS FOR THE CONSTRUCTION OF THE ACCESS ROAD, FOOTPATHS AND OTHER AREAS OF HARDSTANDING SHALL BE THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME 1. SPECIFICATION OF HIGHWAY WORKS (SHW) PUBLISHED BY THE STATIONARY OFFICE.
7. ALL RWP AND FO SHOWN ARE INDICATIVE ONLY AND SUBJECT TO APPROVAL AND SETTING OUT BY THE ARCHITECT.
8. UNLESS NOTED OTHERWISE, PIPES TO BE:
   FOUL PIPES UNDER BUILDING ø100@1:40,
   FOUL PIPES EXTERNAL ø100@1:80,
   SURFACE WATER PIPES ø150@1:100

STORMWATER CONCEPT LEGEND

18.30x	Proposed Level
FFL 80.90	Finished floor level
	Overland flow

Notes.

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2. All levels are in metres and relate to O S National Datum by GPS instruments.
3. This survey was measured for a scale of 1:100, any subsequent enlargements should be verified on site.

Amendments

Rev	Date		By	Chkd

JOMAS
ENGINEERING ENVIRONMENTAL
Jomas Associates Ltd.
Unit 24 Sarum Complex,
Salisbury Road,
Uxbridge, UB8 2RZ

Project
60 Long Lane, Ickenham, UB10 8SZ

Drawing
Proposed Overland Flow

Dwg no	Checked	Surveyor
C03	AW	-
Date 20.07.26	Scale 1:100	
Job No. P7302J3411		Rev. -

Grid	Contours	Level Datum

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	10	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	0.600
Time of Entry (mins)	2.00	Include Intermediate Ground	x
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1			39.220	1200	100.000	100.000	0.620
2	0.009	2.00	39.330	1200	104.000	119.000	0.460
3	0.007	2.00	39.450	450	111.000	119.000	0.520
4	0.006	2.00	39.400	450	119.000	122.000	0.380
5	0.006	2.00	39.500	450	119.000	139.000	0.310
6	0.008	2.00	39.510	450	119.000	108.000	0.440
7	0.007	2.00	39.400	450	97.000	121.000	0.440
8	0.007	2.00	39.500	450	98.000	139.000	0.360
9	0.008	2.00	39.490	450	97.000	111.000	0.490

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.003	2	1	19.416	0.600	38.870	38.600	0.270	71.9	100	3.03	50.0
1.002	3	2	7.000	0.600	38.930	38.870	0.060	116.7	150	2.67	50.0
1.001	4	3	8.544	0.600	39.020	38.930	0.090	94.9	100	2.55	50.0
1.000	5	4	17.000	0.600	39.190	39.020	0.170	100.0	100	2.37	50.0
2.000	6	3	13.601	0.600	39.070	38.930	0.140	97.2	100	2.29	50.0
3.001	7	2	7.280	0.600	38.960	38.870	0.090	80.9	100	2.53	50.0
3.000	8	7	18.028	0.600	39.140	38.960	0.180	100.2	100	2.39	50.0
4.000	9	2	10.630	0.600	39.000	38.870	0.130	81.8	100	2.21	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.003	0.909	7.1	7.9	0.360	0.520	0.058	0.0	100	0.933
1.002	0.929	16.4	3.7	0.370	0.310	0.027	0.0	48	0.751
1.001	0.789	6.2	1.6	0.280	0.420	0.012	0.0	35	0.662
1.000	0.769	6.0	0.8	0.210	0.280	0.006	0.0	25	0.531
2.000	0.780	6.1	1.1	0.340	0.420	0.008	0.0	29	0.587
3.001	0.856	6.7	1.9	0.340	0.360	0.014	0.0	36	0.735
3.000	0.768	6.0	0.9	0.260	0.340	0.007	0.0	27	0.560
4.000	0.851	6.7	1.1	0.390	0.360	0.008	0.0	27	0.621

Simulation Settings

Rainfall Methodology	FSR	Summer CV	0.750
Rainfall Events	Singular	Winter CV	0.840
FSR Region	England and Wales	Analysis Speed	Normal
M5-60 (mm)	19.000	Skip Steady State	x
Ratio-R	0.400	Drain Down Time (mins)	240

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Simulation Settings

Additional Storage (m³/ha)	0.0	Check Discharge Rate(s)	x
Starting Level (m)		Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	10	0
10	0	10	0
30	0	10	0
100	0	10	0
100	40	10	0

Node 2 Online Orifice Control

Flap Valve	x	Invert Level (m)	38.870	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Diameter (m)	0.042		

Node 2 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	39.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	218

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	240.0	0.0	0.300	240.0	0.0	0.301	0.1	0.0

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year +10% A 15 minute summer	103.832	29.381
1 year +10% A 15 minute winter	72.865	29.381
1 year +10% A 30 minute summer	67.515	19.105
1 year +10% A 30 minute winter	47.379	19.105
1 year +10% A 60 minute summer	45.726	12.084
1 year +10% A 60 minute winter	30.379	12.084
1 year +10% A 120 minute summer	28.340	7.489
1 year +10% A 120 minute winter	18.828	7.489
1 year +10% A 180 minute summer	21.894	5.634
1 year +10% A 180 minute winter	14.231	5.634
1 year +10% A 240 minute summer	17.401	4.599
1 year +10% A 240 minute winter	11.561	4.599
1 year +10% A 360 minute summer	13.397	3.448
1 year +10% A 360 minute winter	8.709	3.448
1 year +10% A 480 minute summer	10.573	2.794
1 year +10% A 480 minute winter	7.024	2.794
1 year +10% A 600 minute summer	8.677	2.373
1 year +10% A 600 minute winter	5.929	2.373
1 year +10% A 720 minute summer	7.750	2.077
1 year +10% A 720 minute winter	5.209	2.077
1 year +10% A 960 minute summer	6.393	1.683

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year +10% A 960 minute winter	4.235	1.683
1 year +10% A 1440 minute summer	4.671	1.252
1 year +10% A 1440 minute winter	3.140	1.252
1 year +10% A 2160 minute summer	3.372	0.932
1 year +10% A 2160 minute winter	2.323	0.932
1 year +10% A 2880 minute summer	2.820	0.756
1 year +10% A 2880 minute winter	1.895	0.756
1 year +10% A 4320 minute summer	2.149	0.562
1 year +10% A 4320 minute winter	1.415	0.562
1 year +10% A 5760 minute summer	1.779	0.455
1 year +10% A 5760 minute winter	1.151	0.455
1 year +10% A 7200 minute summer	1.517	0.387
1 year +10% A 7200 minute winter	0.979	0.387
1 year +10% A 8640 minute summer	1.329	0.339
1 year +10% A 8640 minute winter	0.858	0.339
1 year +10% A 10080 minute summer	1.188	0.303
1 year +10% A 10080 minute winter	0.767	0.303
10 year +10% A 15 minute summer	200.971	56.868
10 year +10% A 15 minute winter	141.032	56.868
10 year +10% A 30 minute summer	129.855	36.744
10 year +10% A 30 minute winter	91.126	36.744
10 year +10% A 60 minute summer	86.243	22.792
10 year +10% A 60 minute winter	57.298	22.792
10 year +10% A 120 minute summer	52.179	13.789
10 year +10% A 120 minute winter	34.667	13.789
10 year +10% A 180 minute summer	39.634	10.199
10 year +10% A 180 minute winter	25.763	10.199
10 year +10% A 240 minute summer	31.075	8.212
10 year +10% A 240 minute winter	20.646	8.212
10 year +10% A 360 minute summer	23.443	6.033
10 year +10% A 360 minute winter	15.239	6.033
10 year +10% A 480 minute summer	18.333	4.845
10 year +10% A 480 minute winter	12.180	4.845
10 year +10% A 600 minute summer	14.935	4.085
10 year +10% A 600 minute winter	10.205	4.085
10 year +10% A 720 minute summer	13.257	3.553
10 year +10% A 720 minute winter	8.909	3.553
10 year +10% A 960 minute summer	10.821	2.849
10 year +10% A 960 minute winter	7.168	2.849
10 year +10% A 1440 minute summer	7.784	2.086
10 year +10% A 1440 minute winter	5.231	2.086
10 year +10% A 2160 minute summer	5.523	1.526
10 year +10% A 2160 minute winter	3.806	1.526
10 year +10% A 2880 minute summer	4.561	1.223
10 year +10% A 2880 minute winter	3.066	1.223
10 year +10% A 4320 minute summer	3.418	0.894
10 year +10% A 4320 minute winter	2.251	0.894
10 year +10% A 5760 minute summer	2.794	0.715
10 year +10% A 5760 minute winter	1.808	0.715
10 year +10% A 7200 minute summer	2.359	0.602
10 year +10% A 7200 minute winter	1.522	0.602
10 year +10% A 8640 minute summer	2.048	0.522

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
10 year +10% A 8640 minute winter	1.322	0.522
10 year +10% A 10080 minute summer	1.817	0.463
10 year +10% A 10080 minute winter	1.173	0.463
30 year +10% A 15 minute summer	254.498	72.014
30 year +10% A 15 minute winter	178.595	72.014
30 year +10% A 30 minute summer	165.775	46.909
30 year +10% A 30 minute winter	116.334	46.909
30 year +10% A 60 minute summer	110.635	29.238
30 year +10% A 60 minute winter	73.503	29.238
30 year +10% A 120 minute summer	66.994	17.704
30 year +10% A 120 minute winter	44.509	17.704
30 year +10% A 180 minute summer	50.789	13.070
30 year +10% A 180 minute winter	33.014	13.070
30 year +10% A 240 minute summer	39.713	10.495
30 year +10% A 240 minute winter	26.384	10.495
30 year +10% A 360 minute summer	29.789	7.666
30 year +10% A 360 minute winter	19.364	7.666
30 year +10% A 480 minute summer	23.214	6.135
30 year +10% A 480 minute winter	15.423	6.135
30 year +10% A 600 minute summer	18.859	5.158
30 year +10% A 600 minute winter	12.885	5.158
30 year +10% A 720 minute summer	16.698	4.475
30 year +10% A 720 minute winter	11.222	4.475
30 year +10% A 960 minute summer	13.576	3.575
30 year +10% A 960 minute winter	8.993	3.575
30 year +10% A 1440 minute summer	9.708	2.602
30 year +10% A 1440 minute winter	6.524	2.602
30 year +10% A 2160 minute summer	6.844	1.892
30 year +10% A 2160 minute winter	4.716	1.892
30 year +10% A 2880 minute summer	5.625	1.508
30 year +10% A 2880 minute winter	3.780	1.508
30 year +10% A 4320 minute summer	4.184	1.094
30 year +10% A 4320 minute winter	2.755	1.094
30 year +10% A 5760 minute summer	3.402	0.871
30 year +10% A 5760 minute winter	2.202	0.871
30 year +10% A 7200 minute summer	2.859	0.729
30 year +10% A 7200 minute winter	1.845	0.729
30 year +10% A 8640 minute summer	2.473	0.631
30 year +10% A 8640 minute winter	1.596	0.631
30 year +10% A 10080 minute summer	2.187	0.558
30 year +10% A 10080 minute winter	1.411	0.558
100 year +10% A 15 minute summer	329.664	93.284
100 year +10% A 15 minute winter	231.343	93.284
100 year +10% A 30 minute summer	216.648	61.304
100 year +10% A 30 minute winter	152.034	61.304
100 year +10% A 60 minute summer	145.356	38.413
100 year +10% A 60 minute winter	96.571	38.413
100 year +10% A 120 minute summer	88.100	23.282
100 year +10% A 120 minute winter	58.532	23.282
100 year +10% A 180 minute summer	66.650	17.151
100 year +10% A 180 minute winter	43.325	17.151
100 year +10% A 240 minute summer	51.959	13.731

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +10% A 240 minute winter	34.521	13.731
100 year +10% A 360 minute summer	38.732	9.967
100 year +10% A 360 minute winter	25.177	9.967
100 year +10% A 480 minute summer	30.068	7.946
100 year +10% A 480 minute winter	19.977	7.946
100 year +10% A 600 minute summer	24.351	6.660
100 year +10% A 600 minute winter	16.638	6.660
100 year +10% A 720 minute summer	21.505	5.763
100 year +10% A 720 minute winter	14.452	5.763
100 year +10% A 960 minute summer	17.408	4.584
100 year +10% A 960 minute winter	11.531	4.584
100 year +10% A 1440 minute summer	12.367	3.314
100 year +10% A 1440 minute winter	8.311	3.314
100 year +10% A 2160 minute summer	8.657	2.393
100 year +10% A 2160 minute winter	5.965	2.393
100 year +10% A 2880 minute summer	7.077	1.897
100 year +10% A 2880 minute winter	4.756	1.897
100 year +10% A 4320 minute summer	5.223	1.365
100 year +10% A 4320 minute winter	3.439	1.365
100 year +10% A 5760 minute summer	4.221	1.080
100 year +10% A 5760 minute winter	2.732	1.080
100 year +10% A 7200 minute summer	3.530	0.900
100 year +10% A 7200 minute winter	2.278	0.900
100 year +10% A 8640 minute summer	3.041	0.776
100 year +10% A 8640 minute winter	1.962	0.776
100 year +10% A 10080 minute summer	2.680	0.684
100 year +10% A 10080 minute winter	1.729	0.684
100 year +40% CC +10% A 15 minute summer	461.530	130.597
100 year +40% CC +10% A 15 minute winter	323.881	130.597
100 year +40% CC +10% A 30 minute summer	303.307	85.825
100 year +40% CC +10% A 30 minute winter	212.847	85.825
100 year +40% CC +10% A 60 minute summer	203.498	53.779
100 year +40% CC +10% A 60 minute winter	135.199	53.779
100 year +40% CC +10% A 120 minute summer	123.340	32.595
100 year +40% CC +10% A 120 minute winter	81.944	32.595
100 year +40% CC +10% A 180 minute summer	93.311	24.012
100 year +40% CC +10% A 180 minute winter	60.654	24.012
100 year +40% CC +10% A 240 minute summer	72.743	19.224
100 year +40% CC +10% A 240 minute winter	48.329	19.224
100 year +40% CC +10% A 360 minute summer	54.225	13.954
100 year +40% CC +10% A 360 minute winter	35.248	13.954
100 year +40% CC +10% A 480 minute summer	42.096	11.125
100 year +40% CC +10% A 480 minute winter	27.967	11.125
100 year +40% CC +10% A 600 minute summer	34.091	9.325
100 year +40% CC +10% A 600 minute winter	23.293	9.325
100 year +40% CC +10% A 720 minute summer	30.106	8.069
100 year +40% CC +10% A 720 minute winter	20.233	8.069
100 year +40% CC +10% A 960 minute summer	24.371	6.417
100 year +40% CC +10% A 960 minute winter	16.144	6.417
100 year +40% CC +10% A 1440 minute summer	17.314	4.640
100 year +40% CC +10% A 1440 minute winter	11.636	4.640
100 year +40% CC +10% A 2160 minute summer	12.120	3.350

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC +10% A 2160 minute winter	8.351	3.350
100 year +40% CC +10% A 2880 minute summer	9.908	2.656
100 year +40% CC +10% A 2880 minute winter	6.659	2.656
100 year +40% CC +10% A 4320 minute summer	7.312	1.912
100 year +40% CC +10% A 4320 minute winter	4.815	1.912
100 year +40% CC +10% A 5760 minute summer	5.909	1.513
100 year +40% CC +10% A 5760 minute winter	3.824	1.513
100 year +40% CC +10% A 7200 minute summer	4.942	1.261
100 year +40% CC +10% A 7200 minute winter	3.189	1.261
100 year +40% CC +10% A 8640 minute summer	4.257	1.086
100 year +40% CC +10% A 8640 minute winter	2.747	1.086
100 year +40% CC +10% A 10080 minute summer	3.751	0.957
100 year +40% CC +10% A 10080 minute winter	2.421	0.957

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Results for 1 year +10% A Critical Storm Duration. Lowest mass balance: 99.35%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	38.600	0.000	1.4	0.0000	0.0000	OK
30 minute winter	2	27	39.035	0.165	6.8	2.7254	0.0000	FLOOD RISK
30 minute winter	3	26	39.035	0.105	3.3	0.0167	0.0000	OK
15 minute summer	4	9	39.063	0.043	2.4	0.0068	0.0000	OK
15 minute summer	5	9	39.220	0.030	1.2	0.0048	0.0000	OK
15 minute summer	6	9	39.105	0.035	1.6	0.0055	0.0000	OK
30 minute winter	7	26	39.035	0.075	1.8	0.0119	0.0000	OK
15 minute summer	8	9	39.173	0.033	1.4	0.0052	0.0000	OK
30 minute winter	9	26	39.035	0.035	1.0	0.0056	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	2	Orifice	1	1.4				5.1
30 minute winter	3	1.002	2	3.1	0.250	0.187	0.1076	
15 minute summer	4	1.001	3	2.4	0.440	0.386	0.0450	
15 minute summer	5	1.000	4	1.2	0.462	0.199	0.0443	
15 minute summer	6	2.000	3	1.6	0.317	0.261	0.0662	
30 minute winter	7	3.001	2	1.6	0.237	0.243	0.0514	
15 minute summer	8	3.000	7	1.4	0.396	0.232	0.0683	
30 minute winter	9	4.000	2	1.0	0.183	0.145	0.0546	

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Results for 10 year +10% A Critical Storm Duration. Lowest mass balance: 98.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	38.600	0.000	1.5	0.0000	0.0000	OK
60 minute winter	2	50	39.092	0.222	8.2	6.9314	0.0000	FLOOD RISK
60 minute winter	3	49	39.093	0.163	4.0	0.0258	0.0000	SURCHARGED
15 minute summer	4	9	39.094	0.074	4.6	0.0118	0.0000	OK
15 minute summer	5	9	39.233	0.043	2.3	0.0068	0.0000	OK
15 minute summer	6	9	39.119	0.049	3.0	0.0078	0.0000	OK
15 minute summer	7	9	39.101	0.141	5.4	0.0224	0.0000	FLOOD RISK
15 minute summer	8	9	39.187	0.047	2.7	0.0074	0.0000	OK
60 minute winter	9	50	39.092	0.092	1.2	0.0147	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	2	Orifice	1	1.7				12.2
60 minute winter	3	1.002	2	3.9	0.227	0.238	0.1232	
15 minute summer	4	1.001	3	4.2	0.563	0.683	0.0600	
15 minute summer	5	1.000	4	2.3	0.541	0.381	0.0799	
15 minute summer	6	2.000	3	3.0	0.449	0.490	0.0794	
15 minute summer	7	3.001	2	5.1	0.647	0.753	0.0570	
15 minute summer	8	3.000	7	2.7	0.410	0.448	0.1029	
60 minute winter	9	4.000	2	1.1	0.212	0.166	0.0818	

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Results for 30 year +10% A Critical Storm Duration. Lowest mass balance: 99.22%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	38.600	0.000	1.6	0.0000	0.0000	OK
60 minute winter	2	57	39.131	0.261	10.3	9.7332	0.0000	FLOOD RISK
60 minute winter	3	56	39.131	0.201	4.8	0.0319	0.0000	SURCHARGED
15 minute summer	4	9	39.167	0.147	5.8	0.0234	0.0000	FLOOD RISK
15 minute summer	5	9	39.239	0.049	2.9	0.0078	0.0000	OK
60 minute winter	6	58	39.131	0.061	1.5	0.0097	0.0000	OK
15 minute summer	7	9	39.149	0.189	6.7	0.0301	0.0000	FLOOD RISK
15 minute summer	8	9	39.195	0.055	3.4	0.0087	0.0000	OK
60 minute winter	9	56	39.131	0.131	1.5	0.0208	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	2	Orifice	1	1.8				15.7
60 minute winter	3	1.002	2	4.7	0.273	0.287	0.1232	
15 minute summer	4	1.001	3	5.0	0.643	0.812	0.0669	
15 minute summer	5	1.000	4	2.9	0.533	0.480	0.0987	
60 minute winter	6	2.000	3	1.5	0.257	0.245	0.0874	
15 minute summer	7	3.001	2	6.3	0.805	0.936	0.0570	
15 minute summer	8	3.000	7	3.3	0.474	0.542	0.1102	
60 minute winter	9	4.000	2	1.4	0.257	0.206	0.0832	

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Results for 100 year +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	38.600	0.000	1.8	0.0000	0.0000	OK
60 minute winter	2	58	39.188	0.318	13.5	13.9478	0.0000	FLOOD RISK
60 minute winter	3	58	39.188	0.258	6.4	0.0411	0.0000	FLOOD RISK
15 minute summer	4	9	39.234	0.214	7.0	0.0340	0.0000	FLOOD RISK
15 minute summer	5	10	39.276	0.086	3.7	0.0136	0.0000	OK
15 minute summer	6	9	39.201	0.131	5.0	0.0208	0.0000	SURCHARGED
15 minute summer	7	10	39.194	0.234	7.8	0.0373	0.0000	FLOOD RISK
15 minute summer	8	10	39.262	0.122	4.3	0.0194	0.0000	FLOOD RISK
60 minute winter	9	58	39.189	0.189	2.0	0.0300	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	2	Orifice	1	2.0				20.7
60 minute winter	3	1.002	2	6.2	0.353	0.379	0.1232	
15 minute summer	4	1.001	3	6.1	0.779	0.983	0.0669	
15 minute summer	5	1.000	4	3.4	0.535	0.559	0.1271	
15 minute summer	6	2.000	3	4.1	0.557	0.670	0.1064	
15 minute summer	7	3.001	2	7.1	0.906	1.055	0.0570	
15 minute summer	8	3.000	7	3.7	0.514	0.605	0.1411	
60 minute winter	9	4.000	2	1.8	0.243	0.275	0.0832	

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Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.41%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	38.600	0.000	2.0	0.0000	0.0000	OK
120 minute winter	2	96	39.285	0.415	11.6	21.0034	0.0000	FLOOD RISK
120 minute winter	3	98	39.285	0.355	5.5	0.0564	0.0000	FLOOD RISK
15 minute summer	4	10	39.371	0.351	8.6	0.0558	0.0000	FLOOD RISK
15 minute summer	5	10	39.448	0.258	5.2	0.0411	0.0000	FLOOD RISK
15 minute summer	6	10	39.336	0.266	7.0	0.0422	0.0000	FLOOD RISK
15 minute summer	7	10	39.318	0.358	10.4	0.0569	0.0000	FLOOD RISK
15 minute summer	8	10	39.438	0.298	6.1	0.0474	0.0000	FLOOD RISK
120 minute winter	9	98	39.285	0.285	1.7	0.0453	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	2	Orifice	1	2.3				34.9
120 minute winter	3	1.002	2	5.4	0.307	0.329	0.1232	
15 minute summer	4	1.001	3	7.5	0.961	1.212	0.0669	
15 minute summer	5	1.000	4	3.8	0.522	0.623	0.1330	
15 minute summer	6	2.000	3	5.6	0.716	0.914	0.1064	
15 minute summer	7	3.001	2	9.0	1.154	1.343	0.0570	
15 minute summer	8	3.000	7	4.6	0.585	0.759	0.1411	
120 minute winter	9	4.000	2	1.6	0.200	0.234	0.0832	

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Appendix C: Maintenance Report

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DRAINAGE MAINTENANCE PLAN

60 Long Lane, Ickenham, UB10 8SZ

JOMAS ASSOCIATES LTD

Unit 24 Sarum Complex, Salisbury Road, Uxbridge, UB8 2RZ

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Report Title: Drainage Maintenance Report for 60 Long Lane, Ickenham, UB10 8SZ

Report Status: Final

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Date: June 2026

Control: Previous Release

Version	Date	Issued By
V1.0	24/06/2026	A Wallace

Prepared by: JOMAS ASSOCIATES LTD **For:** Parmar Ventures Ltd

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1.1 General

1.1.1 Sustainable Drainage Systems (SuDS) are an environmentally friendly approach to managing rainfall. SuDS techniques use landscape features to deal with surface water with the aim to:

- Control the flow, volume and frequency of water leaving a development.
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces.
- Provide attractive surroundings for the community.

1.1.2 The surface water drainage strategy for this development utilises permeable paving as the main SUDS feature. The following sections provides a brief description of these features and outlines the maintenance programme that should be adopted.

1.2 Cleaning of the Drainage System

1.2.1 Drainage systems should be inspected at regular intervals and where necessary, thoroughly cleaned out at the same time. Any defects discovered should be made good.

1.2.2 The following operations should be carried out during the periodic cleaning of a drainage system.

Table 1: Drainage Maintenance

Product Type	Period	Responsibility	Maintenance Methods
Silt Trap	As necessary and before winter season	Site Owner	• Sediment and debris that accumulated during summer needs to be removed before the wet season. • Inspect and clean out routinely prior to inlet pipework to minimise debris reaching the tank. • Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed.
Standard Manholes/ Inspection Chambers	As required (Min. Annually)	Site Owner	• Remove and clean any soil and vegetation that covers the manhole cover to prevent blockage of the drainage system at the manhole. • Renew/replace any damaged/missing bolts and damaged/missing manhole covers.
Drainage Pipes	Six monthly interval	Site Owner	• Inspect underground drainage pipes to ensure that the distribution pipework arrangement is operational and free from blockages. If required, take remedial action.

Product Type	Period	Responsibility	Maintenance Methods
Permeable Paving	Winter season	Site Owner	• De-icing may be used without causing significant detrimental effects towards the permeable pavement's performance. When used carefully, the use of these chlorides will not result in an increase in the chloride levels in the local ground.
	Six monthly (Ideally, this activity to be carried out in spring and autumn seasons)	Site Owner	• Agitate (e.g. brush, vacuum, etc.) the block paving to ensure no vegetation of any sort is allowed to grow and develop in the joints (where may affect performance).
	As required	Site Owner	• Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed. • Inspection/check of all inlets to ensure that they are in good condition and operating as designed. • Debris removal from catchment surface (where may cause risks to performance).
Water Butt	As required (Min. Annually)	Site Owner	• Inspection/check of all inlets to ensure that they are in good condition and operating as designed. • Debris removal from catchment surface (where may cause risks to performance). • Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed.
Flow Control	As required (Min. Annually)	Maintenance Company	• Inspection/check of all inlets to ensure that they are in good condition and operating as designed. • Debris removal from catchment surface (where may cause risks to performance). • Renew/replace any damaged/missing bolts and damaged/missing manhole covers. • Conduct inspections more frequently during the wet season for the area where sediment or trash accumulates more often. Clean and repair as needed.

1.3 Sketches and Plans

1.3.1 The locations of the above features can be found by examining Drawing P7302J3411-C01

1.4 Maintenance Checklist

1.4.1 As well as the above checklist, the below Inspection Regime should be completed on a 6 monthly basis and the above inspection checklist table updated as required.

Inspection date								
	Details	Y/N	Action required	Date completed	Details	Y/N	Action required	Date Completed
General inspection items								
Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance?								
Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?								
Have any health and safety risks been identified to either the public or maintenance operatives?								
Is there any deterioration in the surface of permeable or porous surfaces (eg rutting, spreading of blocks or signs of ponding water)?								
Silt/sediment accumulation								

Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains or infiltration basins and within proprietary devices)? If yes, state depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator)								
Is surface clogging visible (potentially problematic where water has to soak into the underlying construction or ground (eg underdrained swale or infiltration basin)?								
Does permeable or porous surfacing require sweeping to remove silt?								
System blockages and litter build-up								
Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?								
Is there any evidence of any other clogging or blockage of outlets or drainage paths?								
Vegetation								

Is the vegetation condition satisfactory (density, weed growth, coverage etc)? (Check against approved planting regime.)								
Does any part of the system require weeding, pruning or mowing? (Check against maintenance frequency stated in approved design.)								
Is there any evidence of invasive species becoming established? If yes, state action required								
Infrastructure								
Are any check dams or weirs in good condition?								
Is there evidence of any accidental damage to the system (eg wheel ruts?)								
Is there any evidence of cross connections or other unauthorised inflows?								
Is there any evidence of tampering with the flow controls?								
Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects? (Specify.)								
Other observations								

Information appended (eg photos)								
Suitability of current maintenance regime								
Continue as current Increase maintenance Decrease maintenance								
Next inspection								
Proposed date for next inspection								

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