Cole Easdon

TECHNICAL NOTE – 10417/01
SURFACE WATER DRAINAGE DESIGN

Proposed Residential Redevelopment, 72 Harefield Rd, Uxbridge, Middlesex UB8 1PL on Behalf of Twiglet Developments Ltd

DOCUMENT ISSUE RECORD

Client: **Twiglet Developments Ltd**

Project: **Proposed Residential Redevelopment, 72 Harefield Rd, Uxbridge, Middlesex UB8 1PL**

Job Number: **10417**

Document Title: **Technical Note – 10417/01 Surface Water Drainage Design**

Issue No.	1			
Date	April 2025			
Description / Status	Formal Issue			
Prepared	S. Starr BSc (Hons)			
Technical Check	D Frosoni CEng MICE MCIWEM			
Authorised	D Frosoni CEng MICE MCIWEM			
Document Check	C. Hall BSc (Hons) AMCIHT			

1.0 INTRODUCTION

1.1 This *Technical Note* has been prepared by Cole Easdon Consultants on behalf of Twiglet Developments Ltd in respect of a proposed residential redevelopment at 72 Harefield Rd, Uxbridge, Middlesex UB8 1PL. Refer to enclosed CE Drawing 10417/500 Figure 1 [*Site Location Plan*].

1.2 The proposals comprise the construction of a detached four storey building (including lower ground floor) containing nine apartments with parking, access and landscaping. An existing house at the site will be demolished. Ground levels in the vicinity of the proposed building and at the site frontage will will be lowered by up to 1m. Refer to Drawing 24_49_08 [*Discharge of Condition for 9 Flats Building Site Plan*] (by Oxbridge Design & Detailing Services) enclosed with this *Technical Note*.

1.3 The proposals were granted planning approval in April 2025 (Planning Reference 25767/APP/2024/2484). Refer to the Decision Notice enclosed with this *Technical Note*.

1.4 This *Technical Note* provides the information required to address surface water drainage planning condition 15 as below:

15. NONSC **Non Standard Condition**

Prior to commencement of the hereby approved development, (excluding demolition and site clearance) a scheme for the provision of sustainable water management shall be submitted to, and approved in writing by the Local Planning Authority. The scheme shall clearly demonstrate how the approved development will incorporate sustainable urban drainage (SuDs) in accordance with the hierarchy set out in Policy 5.13 of the London Plan and will:

i. provide information on all SuDs features including the method employed to delay and control the surface water discharged from the site and:
ii. provide a management and maintenance plan for the lifetime of the development of arrangements to secure the operation of the scheme throughout its lifetime. Including appropriate details of Inspection regimes, appropriate performance specification.
The scheme shall also demonstrate the use of methods to minimise the use of potable water through water collection, reuse and recycling and will:
iii. provide details of water collection facilities to capture excess rainwater; and how water usage will be reduced in the development.
Thereafter the development shall be implemented and retained/maintained in accordance with these details for as long as the development remains in existence.

REASON
To ensure that surface water run off is controlled to ensure the development does not increase the risk of flooding and is to be handled as close to its source as possible and Conserve water supplies in compliance with: Hillingdon Local Plan: Part 1- Strategic Policies Policy EM6 Flood Risk Management in (2012), Hillingdon Local Plan Part 2 Development Management Policies Policy DMEI 10 Water Management, Efficiency and Quality (2020), as well as relevant SuDs guidance contained within the London Plan (2021) and NPPF (2024).

2.0 THE EXISTING SITE

2.1 The site is located on the eastern side of Harefield Road, approximately 500m north of Uxbridge town centre.

2.2 It currently comprises a detached house with front and rear gardens.

2.3 The site is bounded to the north and south by neighbouring properties on Harefield Road; to the east by the gardens of properties on Cambridge Road; and to the west by Harefield Road.

2.4 Land use in the vicinity of the site is residential.

Existing Topography

2.5 Existing ground levels at the site fall to the west. Ground levels vary from approximately 54.50mALD (metres Above Local Datum) in the east of the site, to approximately 50.00mALD in the west adjacent to Harefield Drive. Refer to enclosed Drawing 24_49_ [*Topographical Survey*] (provided by Oxbridge Design & Detailing Services).

Nearby Watercourses/Drainage Features

2.6 The River Cole, a Main River and a tributary of the Thames, flows in a southerly direction approximately 500m west of the site.

2.7 The Grand Union canal is located approximately 250m west of the site.

2.8 Fray's River, Shire Ditch and Sand River and located 50m to 150m west of the site.

2.9 There are no watercourses or ditches within the site.

Existing Public Sewers

2.10 Public foul and surface water sewers are located beneath Harefield Road, at the site frontage. Refer to enclosed sewer records.

2.11 Existing Site Drainage

Details of the existing surface water drainage systems at the site are not available. It is assumed that foul flows are drained to the existing public foul sewer in Harefield Road.

Existing Ground Conditions

2.12 British Geological Survey (BGS) mapping indicates that the site is underlain by London Clay bedrock composed of clay, silt and sand, beneath superficial deposits of sand and gravel. Refer to Figures 2.1 and 2.2 below.

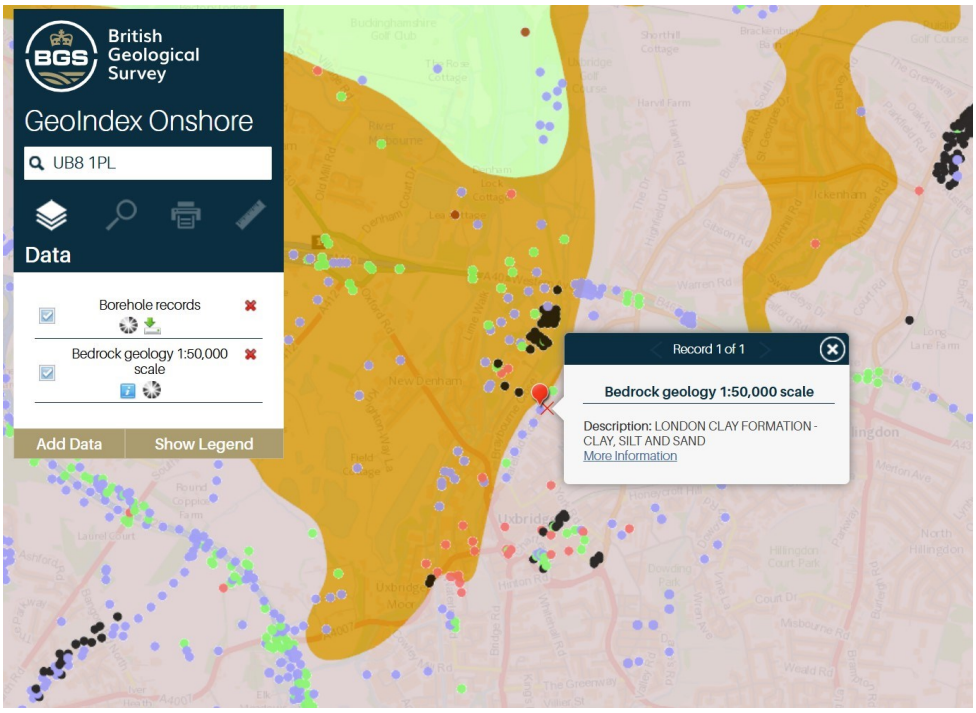


Figure 2.1: Bedrock Geology Map (Extract from British Geological Survey Geoindex)
Source : https://mapapps.bgs.ac.uk/geologyofbritain/home.html

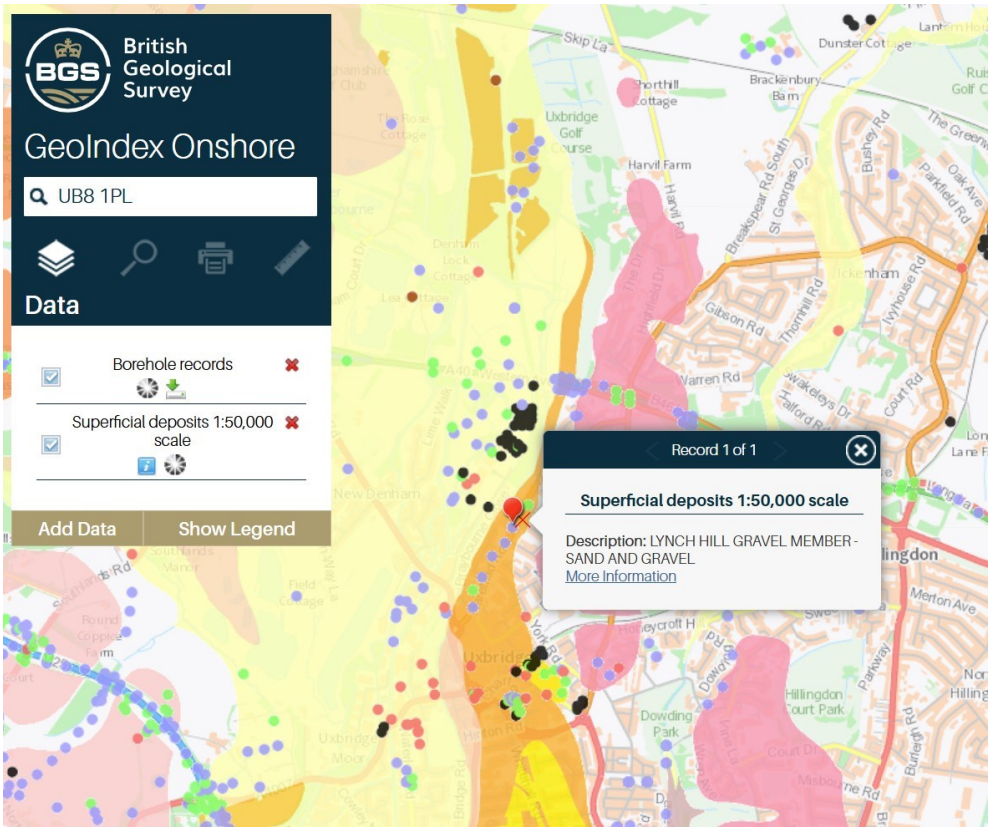


Figure 2.2: Superficial Geology Map (Extract from British Geological Survey Geoindex)
Source : https://mapapps.bgs.ac.uk/geologyofbritain/home.html

2.13 BGS logs for boreholes situated in Harefield Road indicate that gravel strata are present to a depth of 5m to 8m bgl (below ground level) at the site. Refer to the enclosed borehole logs and location plan.

2.14 The BGS logs include records of groundwater strikes at between 4m and 8m bgl.

3.0 PROPOSED SURFACE WATER DRAINAGE DESIGN

Refer to CE Drawing 10417/501 [*Proposed Surface Water Drainage Layout*] and CE Drawing 10417/502 [*Proposed Surface Water Drainage Construction Details*] enclosed with this *Technical Note*.

3.1 Without suitable mitigation, runoff from the proposed development could increase flood risk to the locality.

3.2 The drainage proposals for the site have been guided by the following national and local guidance:

- *Building Regulations 2010 – Approved Document H (Drainage and Waste Disposal);*
- *C753 The SuDS Manual (CIRIA, November 2015);*
- *Flood risk assessments: climate change allowances (May 2022);*
- *National Planning Policy Framework (December 2024);*
- *Non-Statutory Technical Standards for SuDS (March 2015);*
- *Planning Practice Guidance – Flood Risk and Coastal Change (February 2025);*
- *Sustainable Drainage Design & Evaluation Guide - London Borgh of Hillingdon (McCloy Consulting & Robert Bray Associates 2018)*
- *London Borough of Hillingdon Strategic Flood Risk Assessment (Scott Wilson Ltd 2008)*
- *West London Strategic Flood Risk Assessment* Mapping - West London Strategic Flood Risk Assessment

Drainage Hierarchy

3.3 The drainage proposals for the site have been developed in line with Building Regulations guidelines following the drainage hierarchy as discussed below and as summarised in Table 3.1:

- *Rainwater re-use;*
- *Infiltration to the maximum extent that is practical;*
- *Discharge to surface waters (watercourses);*
- *Discharge to a surface water sewer, highway drain or another drainage system; or*
- *Discharge to combined sewer.*

Rainwater Harvesting

3.4 A rainwater harvesting tank is proposed to the rear of the proposed building, allowing runoff from part of the rear roof area to be retained and re used, thereby reducing potable water consumption. The scope for providing a tank elsewhere is limited by the proposed infiltration systems proposed to the north and west of the building and by tree root protection zones. It is not possible to locate a tank in the east of the site as roof water cannot be drained into this area, which is approximately 3m higher than the land around the proposed building. The

tank will overflow into the proposed SuDS. Refer to the rainwater harvesting tank specification and CE Drawing 10417/501 [*Proposed Surface Water Drainage Layout*] enclosed with this Technical Note.

Infiltration Potential

3.5 BGS mapping and borehole data indicates that the site is underlain by gravel strata which are typically permeable and would therefore support the effective operation of infiltration based SuDS. In accordance with the Drainage Hierarchy, surface water runoff will therefore be disposed of to ground.

3.6 Infiltration testing has not yet been undertaken, as the site is currently inaccessible. An assumed rate of 1x10-5m/s has therefore been used as the basis of the SuDS design. BRE365 compliant testing will be carried out in due course.

Table 3.1: Review of SuDS Components in accordance with the Drainage Hierarchy

SuDS Techniques	Proposed	Not proposed	Reason
Store rainwater for re-use	X		Rainwater harvesting tank proposed
Use infiltration techniques	X		The site is underlain by gravel strata
Attenuate rainwater in ponds or open water features		X	Infiltration based SuDS proposed
Attenuate rainwater in sealed tanks		X	Infiltration based SuDS proposed
Discharge direct to a watercourse		X	Infiltration based SuDS proposed
Discharge to a surface water drain		X	Infiltration based SuDS proposed
Discharge to a combined sewer		X	Infiltration based SuDS proposed

Proposed Sustainable Drainage Systems (SuDS)

3.7 Post development runoff will be drained into infiltration based permeable sub base systems surfaced with porous tarmac. Three systems are proposed, as below.

Permeable Sub Base Area 1

3.8 Runoff from the proposed building roof will be piped into this system which will be located in the proposed parking/access area at the site frontage.

3.9 All inlets into the system will be situated at least 5m from proposed and existing buildings and retaining walls.

Permeable Sub Base Area 2

3.10 This system will drain runoff from the proposed access which ramps up to the rear parking area and garden. It will be self draining with no additional input of roof water, and will effectively drain as a permeable area of soft landscaping.

3.11 This system is located on sloping ground, therefore concrete baffles will be provided within its base to ensure that water is retained to allow infiltration and does not flow into the lower part of the system.

3.12 Adjacent building foundations/walls will be sealed against water ingress.

Permeable Sub Base Area 3

3.13 This system will drain the proposed rear parking area, which will be at a higher level than the remaining site area. It will be self draining with no additional inflow of roof water.

3.14 The Infodrainage network design calculations enclosed with this *Technical Note* demonstrate that that the proposed SuDS and pipework have the capacity required to drain runoff from the 1 in 100 year + 40% climate change design storm without flooding, in accordance with the latest EA guidance for the Colne Management Catchment.

3.15 For details and dimensions of the proposed SuDS and pipe network refer to CE Plans 10417/501 [*Proposed Surface Water Drainage Layout*] & 10417/502 [*Proposed Surface Water Drainage Construction Details*] enclosed with this *Technical Note*.

Tree Root Protection Zones

3.16 SuDS will not be installed in 'no dig' root protection zones, however the proposed SuDS have been sized to accommodate runoff from adjacent root protection zones where they occur in hard surfaced areas.

3.17 'No dig' construction incorporating Cellweb or a similar proprietary protection system will be required in root protection areas within hard areas, as specified in the Arboricultural Report submitted with the planning application.

Design Exceedance

3.18 The proposed drainage system has been designed to accommodate runoff from the1 in 100 year storm including a 40% allowance for climate change. Design exceedance is therefore unlikely. In the event of blockage or an exceedance storm event, overflow would gravitate onto adjacent landscaped areas without impacting upon the proposed development or adjacent sites. Any exceedance flows entering Harefield Road would be intercepted by existing highway gullies and drained to the existing surface water sewer. Refer to CE Plan 10417/501 [*Proposed Surface Water Drainage Layout*], enclosed with this *Technical Note*.

Water Quality

3.19 Water quality has been assessed in line with the Simple Index approach from Chapter 26 of CIRIA *C753 The SuDS Manual:*

1) *Step 1 – Allocate suitable pollution hazard indices for the proposed land use.*
2) *Step 2 – Select SuDS with a total pollution mitigation index that equals or exceeds the pollution hazard index.*

3.20 The pollution hazard indices for the proposed land use are low. Refer to Table 3.2 below.

Table 3.2: Pollution Hazard Indices for different land uses (based on Table 26.2 of *CIRIA C753 The SuDS Manual*)

Land use	Pollution hazard level	Total suspended solids (TSS)	Metals	Hydrocarbons
Residential car parks & low traffic roads	Low	0.5	0.4	0.4

3.21 The Pollution Mitigation Indices for permeable sub base are greater than the Pollution Hazard Indices for residential car parks and low traffic roads. Refer to Table 3.3 below. Therefore, the proposed drainage strategy will provide sufficient water quality treatment.

Table 3.3: Pollution Mitigation Indices for Discharge to Ground Water from the Proposed Site (from Table 26.4 of CIRIA C753 The SuDS Manual)

SuDS Feature	Total suspended solids (TSS)	Metals	Hydrocarbons
Permeable sub base	0.7	0.6	0.7

Adoption and Maintenance

3.22 All on site surface water drainage systems will remain private, and will be the responsibility of the site owner or a private management company acting on behalf of the owner. A draft Maintenance Schedule is outlined below and summarised in Tables 3.4 – 3.6.

Permeable Sub Base

3.23 Surfaces should be regularly cleaned of silt and other sediments to preserve their infiltration capability. The cleaning regime should be as follows:

- End of winter (April) – to collect winter debris;
- Mid-summer (July/August) – to collect dust, flower and grass-type deposits; and
- After autumn leaf fall (November).

3.24 If reconstruction is necessary, the following procedure should be followed:

1. Lift surface layer;
2. Remove any geotextile filter layer;
3. Inspect sub-base and remove, wash and replace if required;
4. Renew any geotextile layer; and
5. Renew surfacing if required

3.25 Materials removed from the voids or the layers below the surface may contain hazardous substances such as heavy metals and hydrocarbons which may need to be disposed of as controlled waste.

Pipework Catchpits & Flow Controls

3.26 The systems should be inspected every six months and silt removed as necessary.

Rainwater Harvesting

3.27 The system will be managed and regularly serviced in accordance with the manufacturer's guidance.

Table 3.4: Draft Maintenance Schedule for Permeable Sub Base

Drainage Element	Schedule	Maintenance Requirement	Frequency
Permeable Sub Base	Regular	▪ Cleaning surface	▪ Once a year, after autumn leaf fall
	Occasional	▪ Removal of weeds	▪ As required
	Remedial	▪ Remedial work to any depressions or damage considered a hazard to end users or detrimental to performance	▪ As required
		▪ Rehabilitation of surface, upper sub-structure and filter membrane	▪ Every 10 – 15 years, or as required
	Monitoring	▪ Inspect for evidence of weed growth or poor operation ▪ Inspect silt accumulation rates ▪ Monitor inspection chambers	▪ Initial inspection after construction ▪ Monthly for 3 months after installation ▪ Three monthly, 48 hours after large storms in first six months ▪ Annually
	Occasional	▪ Remove debris and litter Remove silt	▪ As required

Table 3.5: Draft Maintenance Schedule for Pipework & Catchpits

Drainage Element	Schedule	Maintenance Requirement	Frequency
Pipework & catchpits	Regular	▪ Inspect for accumulation of silt ▪ Inspect for debris and litter ▪ Inspect inlets and outlets for blockages	Every six months
	Occasional	▪ Remove debris and litter ▪ Remove silt	As required

Table 3.6: Draft Maintenance Schedule for Rainwater Harvesting Systems

Drainage Element	Schedule	Maintenance Requirement	Frequency
Rainwater Harvesting	Regular	▪ Inspect of tank, inlets, outlets, overflow areas, pumps and filters for debris and sediment build-up ▪ Cleaning of silt and debris from inlets, outlets, gutters, roof drain filters and tank	Annually
	Occasional	▪ Cleaning and replacement of filters as necessary	Annually
	Remedial	▪ Repair of overflow erosion damage or damage to tank ▪ Pump repairs	As required

Note: In addition to the above maintenance requirements, it is recommended that all drainage elements are inspected:

- Following the first storm event
- Monthly for the first 3 months following commissioning

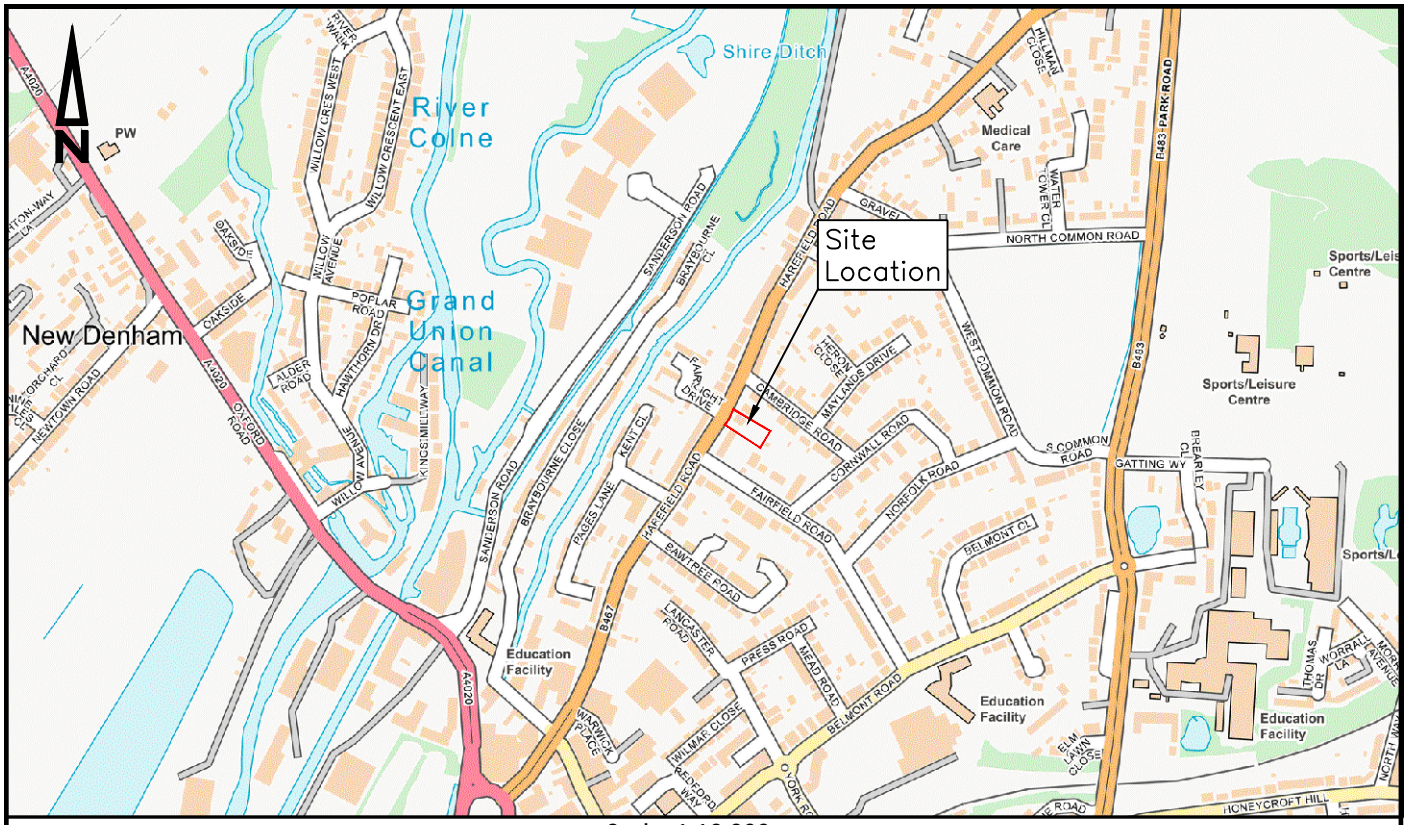
Cole Easdon Consultants Limited

April 2025

Enclosures

CE Drawing 10417/500/Figure 1	Site Location Plan
Proposed Layout (By Oxbridge Design & Detailing Services)	
Decision notice	
Topographical Survey	
Public Sewer records	
British Geological Survey Data	
SuDS design calculations	
CE Drawing 10417/501	Proposed Surface Water Drainage Layout
CE Drawing 10417/502	Proposed Surface Water Drainage Construction Details
Rainwater Harvesting System Details	

Enclosures



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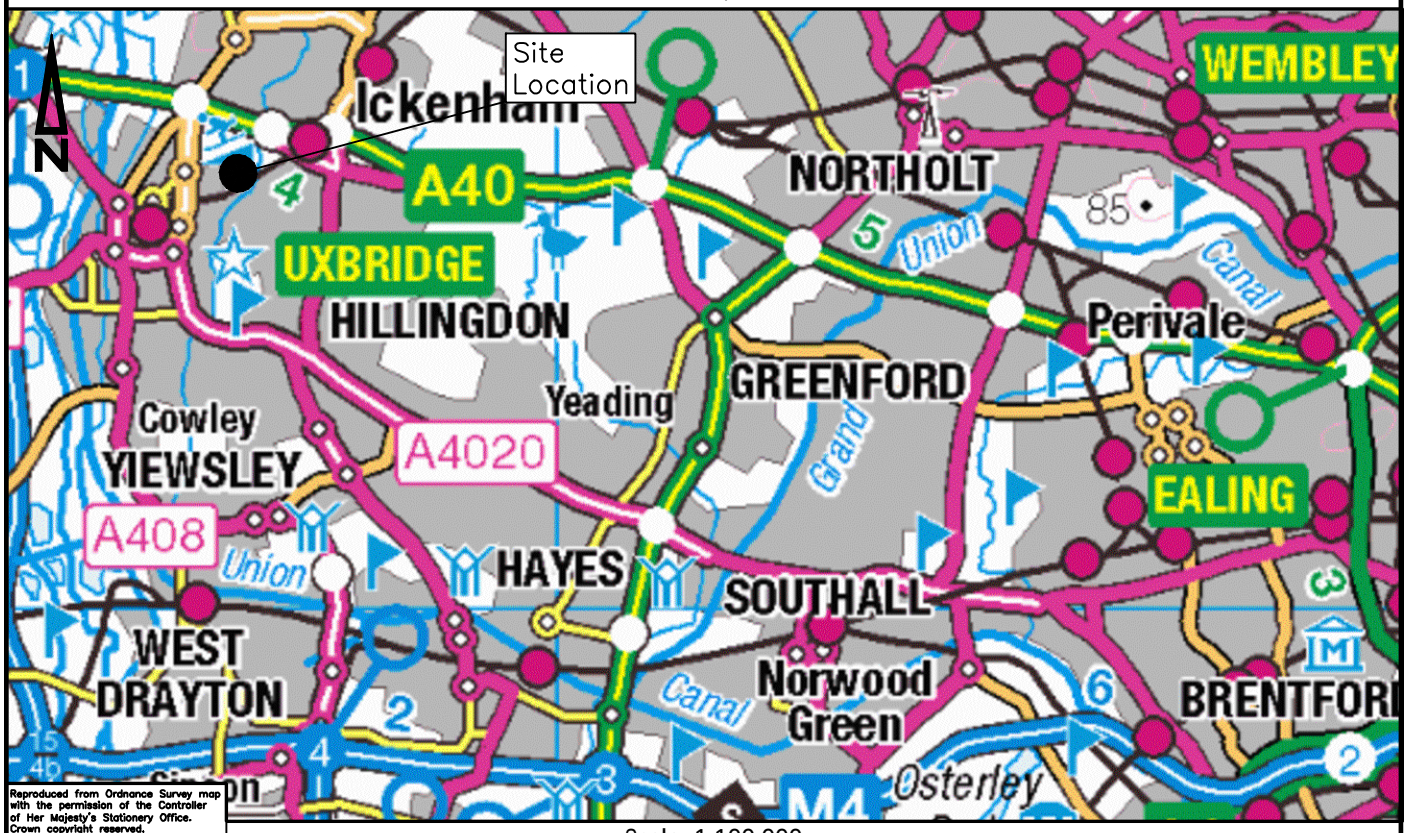

Scale: 1:100,000

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Job Title:
72 Harefield Road
Uxbridge, Middlesex
UB8 1PL
UB8 1PL

Client:
Twiglet Developments Ltd

Drawing Status:

CONSTRUCTION AT CLIENT AND/OR CONTRACTOR RISK	FOR COMMENT	
	FOR PLANNING	X
	FOR TENDER	
	FOR APPROVAL	
	FOR CONSTRUCTION	
	AS BUILT	

Drawing Title:
Site Location Plan

Drawn By	Date Drawn	Scale
BT	April 2025	As Shown (A4)

Checked By	Drawing No.	Revision
SS	10417/500 Figure 1	-

All planting and boundary treatments within the vision splay to be a maximum of 600mm high

1 No. semi-mature tree

Proposed vehicle crossover

Vision splay

External Wall Led Lighting

74 Harefield Road

Close board fence 2mH

External Low Level Lighting

Communal Green Amenity Space: 147 sqm

Private Patio Amenity Space: 38 sqm

Private Balcony Amenity Space: 40 sqm

Levels
51.98 Existing Ground Levels
53.03 Proposed Ground Levels

FAIRLIGHT DRIVE

HAREFIELD ROAD

Drive

1 Disabled Parking

Permeable Tarmac

Drive

DPC Lvl.=52.24m
Eaves Lvl.=57.43m
Ridge Ht.=60.43m

FFL 51.05

Balcony (Flat 3) 10sqm

Balcony (Flat 6) 6sqm

Balcony (Flat 4) 9sqm

Patio (Flat 1) 26sqm

Balcony (Flat 7) 6sqm

Balcony (Flat 5) 9sqm

Patio (Flat 2) 12sqm

Landscaping to be agreed

Ash 12mH

Permeable Tarmac

97sqm

Ash 9mH

Cypress 13mH

Shrubs

Cherry

Ash 15mH

Close board fence 2mH

Parking

2 No. semi-mature trees

Lime 20mH

Existing property outline to be demolished

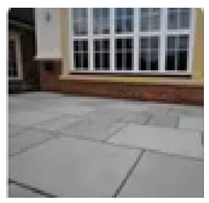
Cycle store

Bay 11mH

Holly

56 - 60 Harefield Road

Grey Porcelain Paving Tiles



Grey Permeable Block Paving

Wall 1.5mH

No excavation in this area. See detail in Arboricultural Report prepared by Tim Moya Associates

Site Plan
Scale – 1:100

REV	DATE	DRAWN BY	DESCRIPTION

Oxbridge Design
& DETAILING SERVICES
The Studio, at 114 High Street, Chalgrove, OX44 7ST
T. 01895 255791
E. info@oxbridgedesign.co.uk
W. www.oxbridgedesign.co.uk

CLIENT: Twiglets Developments

PROJECT: 72 Harefield Road, Uxbridge, Middx, UB8 1PL

TITLE: Discharge of Conditions for new 9 flats building
Site Plan

DATE	SCALE	DRN	DRG NO	REV	SIZE
April 2025	1:100	CF	24_49_08		A1

SCALE 1:50
0m 1m 2m 3m 4m

HILLINGDON
LONDON

Mr. David Webb
Oxbridge Design
Tudor Cottage
114 High Street
Chalgrove
OX44 7ST

Application Ref: 25767/APP/2024/2484

TOWN AND COUNTRY PLANNINGACT 1990 (AS AMENDED)

GRANT OF PLANNING PERMISSION

The Council of the London Borough of Hillingdon as the Local Planning Authority within the meaning of the above Act and associated Orders **GRANTS** permission for the following:

Description of development:
Demolition of existing dwelling and erection of building to provide 3 x 1-bed, 5 x 2-bed, 1 x 3 bed flats with associated parking and amenity space.

Location of development:	72 Harefield Road Uxbridge
Date of application:	16th September 2024
Plan Numbers:	See attached Schedule of plans

Permission is subject to the condition(s) listed on the attached schedule:-

Head of Development Management and Building Control
Date: 7th April 2025

NOTES: (i) Please also see the informatives included in the Schedule of Conditions.

(ii) Should you wish to appeal against any of the conditions please read the attached sheet which explains the procedure.

(iii) This decision does not convey any approval or consent which may be required under any by-laws, building regulations or under any Act other than the Town and Country Planning Act 1990 (as amended).

TOWN AND COUNTRY PLANNINGACT 1990 (AS AMENDED)

GRANT OF PLANNING PERMISSION

Application Ref: 25767/APP/2024/2484

SCHEDULE OF CONDITIONS

1 The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

REASON
To comply with Section 91 of the Town and Country Planning Act 1990.

2 The development hereby permitted shall not be carried out except in complete accordance with the details shown on the submitted plans, numbers:

PP-13383304v1
19_01_00
24_49_01
24_49_02
24_49_03
24_49_04
24_49_06 Rev C
24_49_07 Rev A
Design and Access Statement - August 2024
Biodiversity Net Gain Metric Plan
Biodiversity Net Gain Report 13-11-24

REASON
To ensure the development complies with the provisions of the Hillingdon Local Plan Part 1 (2012) and Part 2 (2020), and the London Plan (2021).

3 Prior to the commencement of above ground work details of all materials and external surfaces, including details of balconies have been submitted to and approved in writing by the Local Planning Authority. Thereafter the development shall be constructed in accordance with the approved details and be retained as such. Details should include information relating to make, product/type, colour and photographs/images.

REASON
To ensure that the development presents a satisfactory appearance in accordance with Policy DMHB 11 of the Hillingdon Local Plan Part 2 (2020).

4 No development shall take place until plans of the site showing the existing and proposed ground levels and the proposed finished floor levels of all proposed buildings have been submitted to and approved in writing by the Local Planning Authority. Such levels shall be shown in relation to a fixed and know datum point. Thereafter the development shall not be carried out other than in accordance with the approved details.

REASON
To ensure that the development relates satisfactorily to adjoining properties in accordance with Policy DMHB 11 of the Hillingdon Local Plan Part 2 (2020).

5 No development shall take place until a landscape scheme has been submitted to and approved in writing by the Local Planning Authority. The scheme shall include: -

1. Details of Soft Landscaping
1.a Planting plans (at not less than a scale of 1:100),
1.b Written specification of planting and cultivation works to be undertaken,
1.c Schedule of plants (including pollution absorbing planting) giving species, plant sizes, and proposed numbers/densities where appropriate

2. Details of Hard Landscaping
2.a Refuse Storage
2.b Means of enclosure/boundary treatments
2.c Car Parking Layouts
2.d Hard Surfacing Materials
2.e External Lighting

3. Details of Landscape Maintenance
3.a Landscape Maintenance Schedule for a minimum period of 5 years.
3.b Proposals for the replacement of any tree, shrub, or area of surfing/seeding within the landscaping scheme which dies or in the opinion of the Local Planning Authority becomes seriously damaged or diseased.

5. Schedule for Implementation

6. Other
6.a Existing and proposed functional services above and below ground
6.b Proposed finishing levels or contours

Thereafter the development shall be carried out and maintained in full accordance with the approved details.

REASON
To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provide adequate facilities in compliance with Policies DMHB 11, DMHB 14, DMEI 1 and DMT 6 of the Hillingdon Local Plan Part 2 (2020) and the London Plan (2021).

6 All windows located on either side elevation of the building shown as 'Obscured' on drawing 24_49_07 Rev A shall be glazed with permanently obscured glass to at least scale 4 on the Pilkington scale and be non-opening below a height of 1.8 metres taken from internal finished floor level for so long as the development remains in existence.

REASON
To prevent overlooking to adjoining properties in accordance with Policy DMHB 11 of the Local Plan Part 2 - Development Management Policies.

7 Prior to the first occupation of the development hereby approved, details of the proposed privacy screening to be located on the side sections of all balconies shall be submitted to, and approved in writing by, the Local Planning Authority.

The privacy screens shall thereafter be implemented in accordance with the approved details prior to the first occupation of any of the flats retain as such in perpetuity.

REASON
To prevent overlooking to adjoining properties in accordance with Policy BE1 of the Hillingdon Local Plan: Strategic Policies (2012) and Policy DMHB 11 of the Local Plan Part 2 - Development Management Policies.

8 No building or use hereby permitted shall be occupied until a Parking Design and Management Plan ensuring that all car parking spaces are allocated and leased, not sold, to the dwellings to which they relate including drawings/documents addressing the demarcation of the shared surface have been

prepared, submitted to and approved in writing by the Highway Authority. The measures shall thereafter be implemented in accordance with the approved Parking Design and Management Plan for the lifetime of the development.

REASON
To ensure that the proposed development will provide appropriate levels of parking and to be in accordance with the London Plan 2021 Policy T6 Residential Parking.

9 Prior to first occupation of the development hereby approved, details of the provision of active electric vehicle charging points shall be submitted to and approved in writing by the Local Planning Authority. The development shall not be occupied until the approved electric vehicle charging points have been implemented. These shall be retained as such thereafter.

REASON
To support carbon-free travel and more sustainable modes of transport, in accordance with Policy T6 of the London Plan (2021).

10 Prior to the first occupation of the development, details of covered and secure cycle storage for a minimum of 10 bicycles, shall be submitted to and approved in writing by the Local Planning Authority. Thereafter, the development shall not be occupied or brought into use until the approved cycling facilities have been implemented in accordance with the approved plan, with the facilities being permanently retained for use by cyclists.

REASON
To ensure the provision and retention of facilities for cyclists to the development and hence the availability of sustainable forms of transport to the site in accordance with Part 2 Development Management Policies (2020) - Policy DMT 1, DMT 2 & DMT 6 and Policies T4 and T6 of the London Plan (2021).

11 Prior to development commencing, the applicant shall submit a Demolition and Construction Management Plan to the Local Planning Authority for its approval. The plan shall detail:

(i) The phasing of development works
(ii) The hours during which development works will occur (please refer to informative I15 for maximum permitted working hours).
(iii) A programme to demonstrate that the most valuable or potentially contaminating materials and fittings can be removed safely and intact for later re-use or processing.
(iv) Measures to prevent mud and dirt tracking onto footways and adjoining roads (including wheel washing facilities).
(v) Traffic management and access arrangements (vehicular and pedestrian) and parking provisions for contractors during the development process (including measures to reduce the numbers of construction vehicles accessing the site during peak hours).
(vi) Measures to reduce the impact of the development on local air quality and dust through minimising emissions throughout the demolition and construction process.
(vii) The storage of demolition/construction materials on site.
The approved details shall be implemented and maintained throughout the duration of the demolition and construction process.

REASON
To safeguard the amenity of surrounding areas in accordance with Policy DMHB 11 of the Hillingdon Local Plan Part 2 (2020).

12 Prior to any works on site above damp proof course level, details of step free access via all points of entry and exit shall be submitted to, and approved in writing, by the Local Planning Authority. The measures implemented as approved shall be retained thereafter.

REASON

To ensure housing of an inclusive design is achieved and maintained in accordance with Policies D5 and D7 of the London Plan (2021).

13 The dwellings hereby approved shall not be occupied until certification of compliance with the technical specifications for an M4(2) dwelling, as set out in Approved Document M to the Building Regulations (2010) 2015, has been submitted to, and approved in writing, by the Local Planning Authority. All such provisions must remain in place for the life of the building.

REASON
To not only allow the Building Control body to require the development to comply with the optional Building Regulations standards, but to also ensure the appropriate quantity and standard of accessible and adaptable housing is constructed and maintained in accordance with Policy D7 of the London Plan (2021).

14 No development shall take place until a written 30 year Habitat Management Plan (HMP) for the site has been submitted to and approved in writing by the Local Planning Authority. The approved HMP shall be strictly adhered to and development commenced and operated in accordance with it. The HMP should, as a minimum, include;

a) Description and evaluation of the features to be managed;
b) Aims, objectives and targets for management
c) Description of the management operations necessary to achieving aims and objectives;
d) Prescriptions for management actions;
e) Preparation of a works schedule, including annual works schedule;
f) Details of the monitoring needed to measure the effectiveness of management;
g) Details of the timetable for each element of the monitoring programme; and
h) Details of the persons responsible for the implementation and monitoring;
i) Reporting to the Council routinely as to the state of the Biodiversity Net Gain requirements of the development on years 1 (post completion), 3, 5, 10, 20 and 30, with biodiversity reconciliation calculations at each stage.

REASON
To ensure the development delivers a biodiversity net gain within the borough and secures the protection and effective management of the remaining habitat on site in accordance with Policy EM7 of the Hillingdon Local Plan: Part 1, Policies DMEI 7 and DMHB 14 of the Hillingdon Local Plan: Part Two, Policy G6 of the London Plan and Schedule 7A of the Town and Country Planning Act 1990 and the Environment Act 2021.

15 Prior to commencement of the hereby approved development, (excluding demolition and site clearance) a scheme for the provision of sustainable water management shall be submitted to, and approved in writing by the Local Planning Authority. The scheme shall clearly demonstrate how the approved development will incorporate sustainable urban drainage (SuDs) in accordance with the hierarchy set out in Policy 5.13 of the London Plan and will:

i. provide information on all SuDs features including the method employed to delay and control the surface water discharged from the site and:
ii. provide a management and maintenance plan for the lifetime of the development of arrangements to secure the operation of the scheme throughout its lifetime. Including appropriate details of Inspection regimes, appropriate performance specification.
The scheme shall also demonstrate the use of methods to minimise the use of potable water through water collection, reuse and recycling and will:
iii. provide details of water collection facilities to capture excess rainwater; and how water usage will be reduced in the development.
Thereafter the development shall be implemented and retained/maintained in accordance with these details for as long as the development remains in existence.

REASON

To ensure that surface water run off is controlled to ensure the development does not increase the risk of flooding and is to be handled as close to its source as possible and Conserve water supplies in compliance with: Hillingdon Local Plan: Part 1- Strategic Policies Policy EM6 Flood Risk Management in (2012), Hillingdon Local Plan Part 2 Development Management Policies Policy DMEI 10 Water Management, Efficiency and Quality (2020), as well as relevant SuDs guidance contained within the London Plan (2021) and NPPF (2024).

16 The development hereby permitted shall be carried out fully in accordance with the tree protection measures specified in the Arboricultural Report reference 190603-PD-11 dated 10th December 2020.

REASON
To ensure that the proposed development will preserve and enhance the visual amenities of the locality and provide adequate facilities in compliance with Policy DMHB 14 of the Hillingdon Local Plan Part 2 (2020).

17 Pedestrian visibility splays measuring 2.4m by 2.4m shall be provided and maintained for the lifetime of the dropped kerb. Fences, walls, and shrubs within these areas shall not exceed a maximum height of 0.6m.

REASON
In the interests of highway safety in compliance with Policies DMT 1 and DMT 2 of the Hillingdon Local Plan Part 2 (2020).

INFORMATIVES

1 The decision to GRANT planning permission has been taken having regard to all relevant planning legislation, regulations, guidance, circulars and Council policies, including The Human Rights Act (1998) (HRA 1998) which makes it unlawful for the Council to act incompatibly with Convention rights, specifically Article 6 (right to a fair hearing); Article 8 (right to respect for private and family life); Article 1 of the First Protocol (protection of property) and Article 14 (prohibition of discrimination).

2 Nuisance from demolition and construction works is subject to control under The Control of Pollution Act 1974, the Clean Air Acts and other related legislation. In particular, you should ensure that the following are complied with:-

A. Demolition and construction works which are audible at the site boundary shall only be carried out between the hours of 08.00 and 18.00 hours Monday to Friday and between the hours of 08.00 hours and 13.00 hours on Saturday. No works shall be carried out on Sundays, Bank or Public Holidays.

B. All noise generated during such works shall be controlled in compliance with British Standard Code of Practice BS 5228:2009.

C. Dust emissions shall be controlled in compliance with the Mayor of London's Best Practice Guidance' The Control of dust and emissions from construction and demolition.

D. No bonfires that create dark smoke or nuisance to local residents.

You are advised to consult the Council's Environmental Protection Unit (www.hillingdon.gov.uk/noise Tel. 01895 250155) or to seek prior approval under Section 61 of the Control of Pollution Act if you anticipate any difficulty in carrying out construction other than within the normal working hours set out in (A) above, and by means that would minimise disturbance to adjoining premises.

3 The Council will recover from the applicant the cost of highway and footway repairs, including damage to grass verges.

Care should be taken during the building works hereby approved to ensure no damage occurs to the

verge or footpaths during construction. Vehicles delivering materials to this development shall not override or cause damage to the public footway. Any damage will require to be made good to the satisfaction of the Council and at the applicant's expense.

For further information and advice contact - Highways Maintenance Operations, Central Depot - Block K, Harlington Road Depot, 128 Harlington Road, Hillingdon, Middlesex, UB3 3EU (Tel: 01895 277524).

For Private Roads: Care should be taken during the building works hereby approved to ensure no damage occurs to the verge of footpaths on private roads during construction. Vehicles delivering materials to this development shall not override or cause damage to a private road and where possible alternative routes should be taken to avoid private roads. The applicant may be required to make good any damage caused.

The decision to GRANT planning permission has been taken having regard to the policies and proposals in the Hillingdon Local Plan Part 1 (2012) and Part 2 (2020) set out below, including Supplementary Planning Guidance, and to all relevant material considerations, including The London Plan - The Spatial Development Strategy for London consolidated with alterations since 2011 (2016) and national guidance.

Part 1 Policies

PT1.BE1	(2012) Built Environment
PT1.H1	(2012) Housing Growth

Part 2 Policies

DMH 2	Housing Mix
DMH 6	Garden and Backland Development
DMEI 14	Air Quality
DMHB 11	Design of New Development
DMHB 12	Streets and Public Realm
DMHB 14	Trees and Landscaping
DMHB 15	Planning for Safer Places
DMHB 16	Housing Standards
DMHB 17	Residential Density
DMHB 18	Private Outdoor Amenity Space
DMT 1	Managing Transport Impacts
DMT 2	Highways Impacts
DMT 5	Pedestrians and Cyclists
DMT 6	Vehicle Parking

LPP D1	(2021) London's form, character and capacity for growth
LPP D3	(2021) Optimising site capacity through the design-led approach
LPP D4	(2021) Delivering good design
LPP D5	(2021) Inclusive design
LPP D6	(2021) Housing quality and standards
LPP D7	(2021) Accessible housing
LPP H1	(2021) Increasing housing supply
LPP H2	(2021) Small sites
LPP SI13	(2021) Sustainable drainage
LPP T5	(2021) Cycling
LPP T6	(2021) Car parking
LPP T6.1	(2021) Residential parking
NPPF11 - 23	NPPF11 23 - Making effective use of land
NPPF12 - 23	NPPF12 23 - Achieving well-designed and beautiful places
NPPF5 -23	NPPF5 23 - Delivering a sufficient supply of homes

END OF SCHEDULE

Address:

Development Management
Directorate of Place
Hillingdon Council
3 North, Civic Centre, High Street, Uxbridge UB8 1UW
www.hillingdon.gov.uk

GRANT OF PLANNING PERMISSION

Application Ref: 25767/APP/2024/2484

SCHEDULE OF PLANS

PP-13383304v1 - received 16 Sep 2024

19_01_00 - received 16 Sep 2024

24_49_01 - received 16 Sep 2024

24_49_02 - received 16 Sep 2024

24_49_03 - received 16 Sep 2024

24_49_04 - received 16 Sep 2024

Design and Access Statement - August 2024 - received 16 Sep 2024

Site survey - received 16 Sep 2024

24_49_06 Rev C - received 14 Nov 2024

Biodiversity Net Gain Metric Plan - received 14 Nov 2024

Biodiversity Net Gain Report 13-11-24 - received 14 Nov 2024

24_49_07 Rev A - received 16 Sep 2024

RIGHTS OF APPLICANTS AGGRIEVED BY DECISION OF LOCAL PLANNING AUTHORITY

TOWN AND COUNTRY PLANNING ACT 1990 (AS AMENDED)

If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the office of the First Secretary of State under Section 78 of the Town and Country Planning Act 1990.

If you want to appeal, then you must do so within six months of the date of this notice, using a form which you can get from the Planning Inspecorate at Customer Support Unit, Room 3/15 Eagle Wing, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6PN (Tel 0117 372 8424) Appeal forms can be downloaded from the Planning Inspectorate website at www.Planning-inspectorate.gov.uk

If you intend to submit an appeal that you would like examined by inquiry then you must notify the Local Planning Authority and Planning Inspectorate (inquiryappeals@planninginspectorate.gov.uk) at least 10 days before submitting the appeal.
Further details are available at www.gov.uk/government/collections/casework-dealt-with-by-inquiries

The Secretary of State can allow a longer period for giving notice of an appeal, but he will not normally be prepared to use this power inless there are special circumstances, which excuse the deploy in giving notice of an appeal.

The Secretary of State need not consider an appeal if it seems to him that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

In practice, the Secretary of State does not refuse to consider appeals solely because the local planning authority based their decision on a direction given by him.

Purchase Notices.

If either the local planning authority or the officer of the First Secretary of State refuses permission to develop land or grants it subject to conditions, the owner may claim that he can neither put the land to a reasonably beneficial use by carrying out of any development which has been or would be permitted.

In these circumstances, the owner may serve a purchase notice on the Council (District Council, London Borough Council or Common Council of the City of London) in whose area the land is situated. This notice will require the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.


N
500mN
450mN
500mE
550mE
Harefield Road
Fairlight Drive
No.72
Shed
Shed
Station Information

Asset Location Search

Property Searches

Catherine Spanner
UNIT 1, YORK HOUSE, HINDLE WAY
SWINDON
SN3 3RB

Search address supplied 72
Harefield Road
Uxbridge
UB8 1PL

Your reference (10417) 72 Harefield Road

Our reference ALS/ALS Standard/2025_5147622

Search date 10 April 2025

Keeping you up-to-date

We have a new website and email address

Website URL: thameswater.co.uk/propertysearches

Email address: property.searches@thameswater.co.uk

Please do get in contact with us if you have any questions.

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: 72, Harefield Road, Uxbridge, UB8 1PL

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

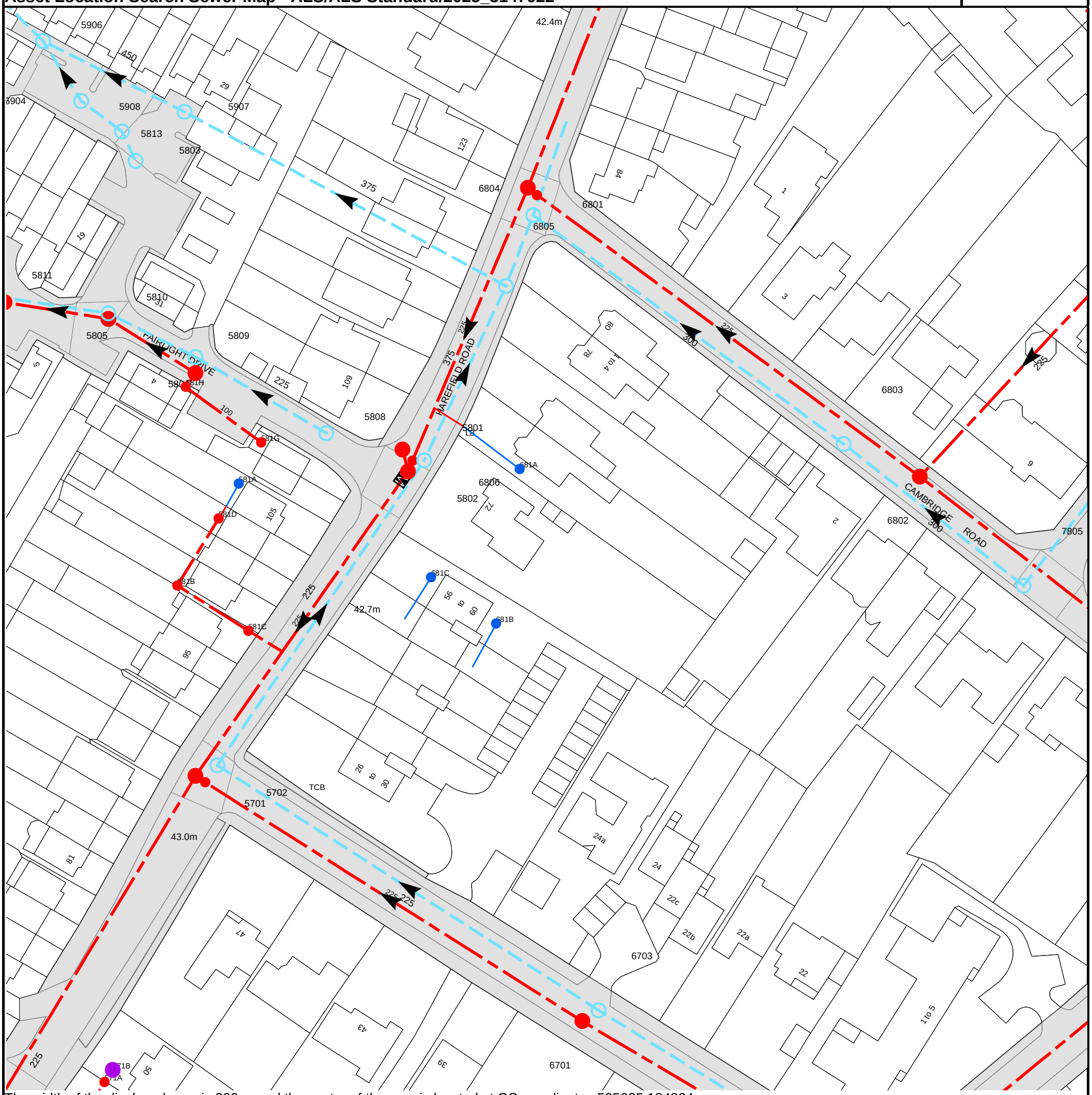
Clean Water queries

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/2025_5147622



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 505625,184824

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.

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
581C	n/a	n/a
581G	n/a	n/a
5808	n/a	n/a
5801	42.26	40.55
5802	41.44	36.26
6806	42.4	41.63
681C	n/a	n/a
681B	n/a	n/a
6805	42.31	41.29
681A	n/a	n/a
6801	42.41	37.41
6804	42.47	41.39
6701	48.39	46.1
6703	48.47	47.42
6803	45.76	43.96
6802	46.78	44.22
7805	48.49	44.39
5906	n/a	n/a
5908	n/a	n/a
5806	n/a	n/a
5805	n/a	n/a
5810	n/a	n/a
5813	n/a	n/a
5803	n/a	n/a
5907	n/a	n/a
581H	n/a	n/a
5804	n/a	n/a
5809	n/a	n/a
571A	n/a	n/a
571B	n/a	n/a
581B	n/a	n/a
5701	43.1	36.9
5702	42.98	41.96
581D	n/a	n/a
581A	n/a	n/a

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

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

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

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

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

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

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

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

Sewer Fittings

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

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

Operational Controls

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

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

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

- Inlet
- Outfall
- Undefined End

Other Symbols

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

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

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

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

- Conduit Bridge
- Subway
- Tunnel

Notes:

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

If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

TQ08SE - 25

Contract Name	UXBRIDGE 0548 8469	Borehole No. 3
		Sheet 1 of 1

Method of boring	Shell and Auger	Ground level	42.21 m OD
Diameter	200 mm nominal	Start	8.8.78
		Finish	10.8.78

Daily progress	Water levels	In-situ tests	Samples	Depth (m)	Reduced level (m O.D.)	Thickness (m)	Description of Strata
			B			1.40	Soft dark grey and brown sandy gravelly clay with brick and glass Made ground
				1.40	40.81		
		N=62	B	1.60	40.61	0.20	Soft brown sandy clay
8/8		N=46	B				
8/8						6.40	Medium dense to very dense coarse to medium gravel
		N=48	B				
		N=42	B				
9/8							
9/8		N=48	B				
	▽	N=34	B W				
	10/8						
		N=27	B				
10/8							
10/8				8.00	34.21		Bottom of Borehole

Notes Surface broken out by pneumatic breaking tools
Noticeable water loss during boring through granular soil

Terresearch Limited	Report No. S.28/586	Appendix 1 Sheet 3

TQ08SE 216

Contract Name	UXBRIDGE 0555 8476	Borehole No. 4
		Sheet 1 of 1

Method of boring	Shell and Auger	Ground level	43.10 m OD
Diameter	200 mm nominal	Start	15.8.78
		Finish	18.8.78

Daily progress	Water levels	In-situ tests	Samples	Depth (m)	Reduced level (m O.D.)	Thickness (m)	Description of Strata
				0.20	42.90	0.20	Tarmac
				0.50	42.60	0.30	Concrete, bricks, and clays — Made ground
						1.00	Medium to fine gravel
15/8				1.50	41.60		
15/8		N=57	B			1.90	Very dense coarse to medium gravel
		N=64	B				
		N=31	B	3.40	39.70	0.70	Dense coarse to medium gravel with a trace of brown sand
16/8				4.10	39.00		
16/8		N=69	B			3.90	Very dense coarse to medium gravel with occasional cobbles
	▽ 17/8	N=56	B				
		N=58	B				
		N=55	B				
17/8				8.00	35.10		Bottom of Borehole
17/8							

Notes

Surface broken out by pneumatic breaking tools

Noticeable water loss during boring through granular soils

Water level observation tubing installed to 8.00 m

Terresearch Limited	Report No. S.28/586	Appendix 1 Sheet 4

TQ08SE - 217

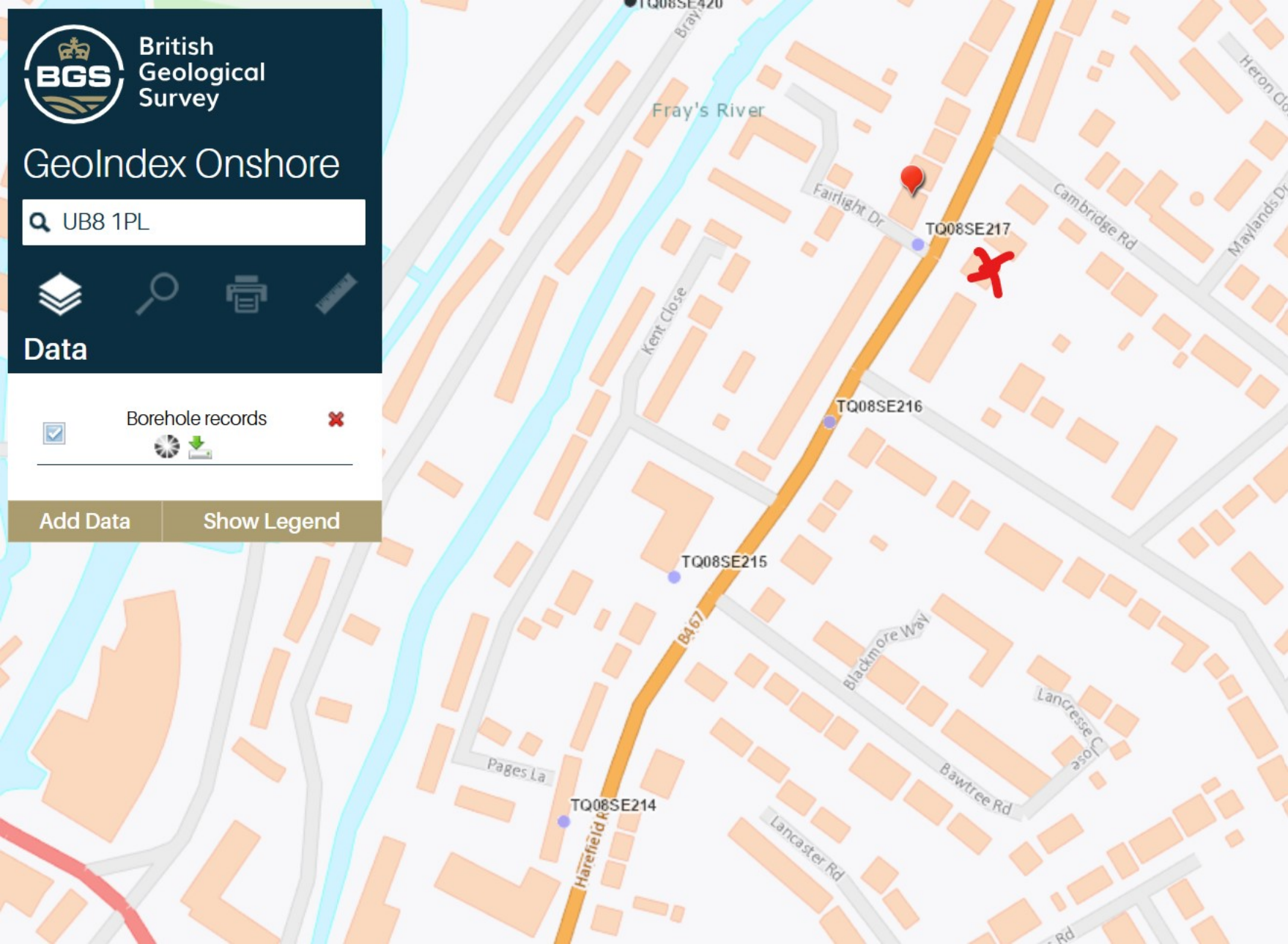
Contract Name	UXBRIDGE 0559 8484	Borehole No. 5
		Sheet 1 of 1

Method of boring	Shell and Auger	**Ground level**	42.45 m OD
Diameter	200 mm nominal	**Start**	11.8.78
		Finish	15.8.78

Daily progress	Water levels	In-situ tests	Samples	Depth (m)	Reduced level (m O.D.)	Thickness (m)	Description of Strata
	12/8					0.55	Brown and black sandy clay with bricks — Made ground
				0.55	41.90		
11/8		N=64	B			2.75	Very dense coarse to medium gravel
11/8		N=68	B				
			J	3.30	39.15		
	14/8	N=35	B	3.40	39.05	0.10	Soft brown sandy clay with some coarse to fine gravel
	▽ 14/8					2.20	Dense coarse to medium gravel with a little brown sand
		N=45					
12/8							
12/8			U	5.60	36.85	0.60	Firm brown sandy silty clay (London Clay)
14/8				6.20	36.25	0.70	Firm dark grey sandy silty clay with pockets of blue silty clay and yellow-brown fine sand and some shell fragments (London Clay)
			U	6.90	35.55	0.10	Firm grey sandy silty clay (London Clay)
14/8				7.00	35.45		Bottom of Borehole

Notes Surface broken out by pneumatic breaking tools
Noticeable water loss to 3.30 m during boring through granular soil

Terresearch Limited	Report No. S.28/586	Appendix 1 Sheet 5


British Geological Survey
GeoIndex Onshore
UB8 1PL
Data
Borehole records
Add Data
Show Legend
Fray's River
Fairlight Dr
Cambridge Rd
Kent Close
TQ08SE217
TQ08SE216
TQ08SE215
TQ08SE214
B467
Blackmore Way
Bawtree Rd
Pages La
Lancaster Rd

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		

Cole Easdon

Catchment Area 1

Type : Catchment Area

Area (ha)	0.01

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Catchment Area 2

Type : Catchment Area

Area (ha)	0.001

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Catchment Area 3

Type : Catchment Area

Area (ha)	0.01

Preliminary Sizing

Volumetric Runoff Coefficient	0.750
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Catchment Area 4

Type : Catchment Area

Area (ha)	0.016

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

Catchment Area 5

Type : Catchment Area

Area (ha)	0.007

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

10417 - Proposed Residential Development :	Date:		
72 Harefield Road Uxbridge Permeable Subbase Area 1	17/04/2025		
	Designed by:	Checked by:	Approved By:
	BT	SS	DF
Report Details: Type: Junctions Storm Phase: Phase	Company Address:		

Cole Easdon

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
S2	Manhole	-628.699	-202.310	50.900	0.700	50.200	Circular	0.600
S1	Manhole	-610.304	-211.681	52.550	0.700	51.850	Circular	0.600
S3	Manhole	-619.108	-225.447	50.900	0.700	50.200	Circular	0.600
S4	Manhole	-638.695	-215.474	50.900	1.200	49.700	Circular	0.600

Name	Lock
S2	None
S1	None
S3	None
S4	None

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S2	Outlet	1.001	Free Discharge
S1	Outlet	1.000	Free Discharge
S3	Outlet	2.000	Free Discharge
S4	Outlet	2.001	Free Discharge

10417 - Proposed Residential Development :	Date:		
72 Harefield Road Uxbridge Permeable Subbase Area 1	17/04/2025 Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		

Cole Easdon

Permeable Paving

Type : Porous Paving

Dimensions

Exceedance Level (m)	50.200
Depth (m)	1.120
Base Level (m)	49.080
Paving Layer Depth (mm)	120
Membrane Percolation (m/hr)	2.5
Porosity (%)	30
Length (m)	15.105
Long. Slope (1:X)	1000.00
Width (m)	6.375
Total Volume (m^3)	28.889

Advanced

Base Infiltration Rate (m/hr)	0.036
Side Infiltration Rate (m/hr)	0.036
Safety Factor	2.0
Conductivity (m/hr)	400.0

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Connections Storm Phase: Phase	Company Address:		

Name	Length (m)	Connection Type	Slope (1:X)	Manning's n	Colebrook-White Roughness (mm)	Diameter / Base Width (mm)	Upstream Cover Level (m)	Upstream Invert Level (m)
1.000	20.645	Pipe	12.512		0.6	100	52.550	51.850
1.001	6.034	Pipe	5.388		0.6	100	50.900	50.200
2.000	21.980	Pipe	43.960		0.6	100	50.900	50.200
2.001	8.200	Pipe	13.226		0.6	100	50.900	49.700

Name	Downstream Cover Level (m)	Downstream Invert Level (m)	Part Family	Lock
1.000	50.900	50.200		None
1.001	50.215	49.080		None
2.000	50.900	49.700		None
2.001	50.215	49.080		None

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area 1	S1		Time of Concentration	0.010	100	0	100	0.010
Catchment Area 2	S2		Time of Concentration	0.001	100	0	100	0.001
Catchment Area 3	Permeable Paving		Time of Concentration	0.010	100	0	100	0.010
Catchment Area 4	S3		Time of Concentration	0.016	100	0	100	0.016
Catchment Area 5	S4		Time of Concentration	0.007	100	0	100	0.007
TOTAL		**0.0**		**0.044**				**0.044**

10417 - Proposed Residential Development :	Date:		
72 Harefield Road Uxbridge Permeable Subbase Area 1	17/04/2025 Designed by: BT	Checked by: SS	Approved By: DF
Report Title: Rainfall Analysis Criteria	Company Address:		

Cole Easdon

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FEH

Type: FEH

Site Location	GB 505500 184850 TQ 05500 84850
Rainfall Version	2022
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Junctions Summary Storm Phase: Phase	Company Address:		

Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
S2	FEH: 100 years: +40 %: 15 mins: Summer	50.900	50.200	50.239	0.039	8.6	0.011	0.000	8.5	3.818	OK
S1	FEH: 100 years: +40 %: 15 mins: Summer	52.550	51.850	51.900	0.050	7.9	0.014	0.000	7.8	3.473	OK
S3	FEH: 100 years: +40 %: 15 mins: Summer	50.900	50.200	50.458	0.258	12.6	0.073	0.000	9.0	5.540	Surcharged
S4	FEH: 100 years: +40 %: 15 mins: Summer	50.900	49.700	50.128	0.428	14.5	0.121	0.000	11.7	7.962	Surcharged

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Permeable Paving	FEH: 100 years: +40 %: 240 mins: Winter	50.088	50.063	0.993	0.983	6.3	28.484	0.000	17.459	0.0	0.000	376	1.403

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Status
OK

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 1	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Connections Summary Storm Phase: Phase	Company Address:		

Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S1	S2	52.550	51.900	0.045	3.473	2.3	0.45	7.8	OK
1.001	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S2	Permeable Paving	50.900	50.239	0.100	3.818	1.1	0.32	8.5	OK
2.000	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S3	S4	50.900	50.458	0.100	5.540	1.1	0.98	9.0	Surcharged
2.001	FEH: 100 years: +40 %: 15 mins: Summer	Pipe	S4	Permeable Paving	50.900	50.128	0.100	7.962	1.5	0.7	11.7	Surcharged

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		

Cole Easdon

Catchment Area 6

Type : Catchment Area

Area (ha)	0.012

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:			

Permeable Paving 2

Type : Porous Paving

Dimensions

Exceedance Level (m)	50.900
Depth (m)	0.500
Base Level (m)	50.400
Paving Layer Depth (mm)	120
Membrane Percolation (m/hr)	2.5
Porosity (%)	30
Length (m)	15.000
Long. Slope (1:X)	1000.00
Width (m)	5.000
Total Volume (m^3)	8.550

Advanced

Base Infiltration Rate (m/hr)	0.036
Side Infiltration Rate (m/hr)	0.036
Safety Factor	2.0
Conductivity (m/hr)	400.0

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area 6	Permeable Paving 2		Time of Concentration	0.012	100	0	100	0.012
TOTAL		**0.0**		**0.012**				**0.012**

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FEH

Type: FEH

Site Location	GB 505500 184850 TQ 05500 84850
Rainfall Version	2022
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Permeable Paving 2	FEH: 100 years: +40 %: 120 mins: Winter	50.661	50.659	0.246	0.259	2.9	5.684	0.000	5.741	0.0	0.000	129	33.524

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 2	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Status
OK

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 3	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflows Storm Phase: Phase	Company Address:		

Cole Easdon

Catchment Area 7

Type : Catchment Area

Area (ha)	0.023

Preliminary Sizing

Volumetric Runoff Coefficient	0.900
Percentage Impervious (%)	100
Time of Concentration (mins)	5

Dynamic Sizing

Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.900
Winter Volumetric Runoff	0.900
Time of Concentration (mins)	5
Percentage Impervious (%)	100

10417 - Proposed Residential Development :	Date:		
72 Harefield Road Uxbridge Permeable Subbase Area 3	17/04/2025		
	Designed by:	Checked by:	Approved By:
	BT	SS	DF
Report Details: Type: Stormwater Controls Storm Phase: Phase	Company Address:		

Cole Easdon

Permeable Paving 3

Type : Porous Paving

Dimensions

Exceedance Level (m)	54.000
Depth (m)	0.500
Base Level (m)	53.500
Paving Layer Depth (mm)	120
Membrane Percolation (m/hr)	2.5
Porosity (%)	30
Length (m)	5.000
Long. Slope (1:X)	1000.00
Width (m)	25.000
Total Volume (m^3)	14.250

Advanced

Base Infiltration Rate (m/hr)	0.036
Side Infiltration Rate (m/hr)	0.036
Safety Factor	2.0
Conductivity (m/hr)	400.0

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 3	Date: 17/04/2025		
	Designed by: BT	Checked by: SS	Approved By: DF
Report Details: Type: Inflow Summary Storm Phase: Phase	Company Address:		

Cole Easdon

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area 7	Permeable Paving 3		Time of Concentration	0.023	100	0	100	0.023
TOTAL		**0.0**		**0.023**				**0.023**

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 3	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Title: Rainfall Analysis Criteria	Company Address:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	300
Perform No Discharge Analysis	☐

Rainfall

FEH

Type: FEH

Site Location	GB 505500 184850 TQ 05500 84850
Rainfall Version	2022
Summer	☑
Winter	☑

Return Period

Return Period (years)	Increase Rainfall (%)
100.0	40.000

Storm Durations

Duration (mins)	Run Time (mins)
15	30
30	60
60	120
120	240
180	360
240	480
360	720
480	960
600	1200
720	1440
960	1920
1440	2880
2160	4320
2880	5760
4320	8640
5760	11520
7200	14400
8640	17280
10080	20160

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 3	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Critical Storm Per Item: Rank By: Max. Resident Volume

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Half Drain Down Time (mins)	Percentage Available (%)
Permeable Paving 3	FEH: 100 years: +40 %: 120 mins: Winter	53.809	53.809	0.304	0.309	5.5	11.498	0.000	9.683	0.0	0.000	155	19.316

10417 - Proposed Residential Development : 72 Harefield Road Uxbridge Permeable Subbase Area 3	Date: 17/04/2025			Cole Easdon
	Designed by: BT	Checked by: SS	Approved By: DF	
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	Company Address:			

Status
OK

Proposed Permeable Sub Base Area 1
Area: 96m²
Base level: 49.08mAOD
Effective sub base depth: 0.993m
Contributing catchment: 440m2

Proposed Permeable Sub Base Area 2
Area: 75m²
Base level: varies. Refer to Drawing 10417 – 502
Effective sub base depth: 0.259m
Minimum construction depth: 0.50m
Baffles to be provided. Refer to Drawing 10417 – 502
Contributing catchment: 120m2

Proposed Permeable Sub Base Area 3
Area: 125m²
Base level: 53.50mAOD
Effective sub base depth: 0.309m
Contributing catchment: 225m2

Proposed Rainwater Harvesting Tank with overflow into SuDS
Stormsaver SD 300L with Monsoon Favourit control unit or similar approved
Base level: 49.785
Overflow level: 50.30

Key:

- Area draining to proposed SuDS: 790m2
- Proposed permeable sub base Area 1
- Permeable 'no dig' area draining into permeable sub base Area 1
- Proposed permeable sub base Area 2
- Permeable 'no dig' area draining into permeable sub base Area 2
- Proposed permeable sub base Area 3
- Permeable 'no dig' area draining into permeable sub base Area 3
- Tree root protection zone
- Proposed 100mmø surface water drain and inspection chamber. Minimum gradient 1 in 80.
- CP — Proposed catchpit
- Proposed permavoid distribution tank
- RE — Proposed rodding eye
- Design exceedance route
- Proposed gully
- ACO — Proposed linear drain
- 51.28 — Proposed ground level
- Proposed concrete baffle
- +51.28 — Existing ground level
- Existing public surface water sewer
- Existing public foul sewer

INSET SHOWING AREA DRAINING TO PROPOSED SUDS
SCALE: NTS

NOTES
1. All levels are in metres above local datum
2. Refer to Drawing 10417 – 502 – Proposed Surface Water Drainage Details for drainage notes.
3. Surface water drainage systems designed to accommodate the 1 in 100 year critical storm including a 40% allowance for climate change
4. All SuDS designed using an assumed infiltration rate of 1X10-5m/s
5. Permeable sub base to be surfaced with permeable tarmac
6. Surfacing design in 'no dig' areas designed by others
7. Any drainage works constructed prior to technical approval are entirely at the risk of the contractor/client
8. The contractor is to comply fully with CDM regulations
9. All drainage works to comply with Building Regulations

REFERENCE DRAWINGS:

Drawing No.	Drawing Title	Revision	Date	Company
24_49_08	Discharge of Conditions for 9 Flats Building Site Plan		April 2025	Oxbridge Detailing & Design Services Ltd
24_49	Topographical Survey			Oxbridge Detailing & Design Services Ltd

No.	By	Date	Revision Details

Cole Easdon
01793 619 965 | cec@ColeEasdon.com | www.ColeEasdon.com

Client: Twiglets Developments Ltd

Job Title: 72 Harefield Rd
Uxbridge
Middlesex
UB8 1PL

Drawing Title: Proposed Surface Water Drainage Layout

Drawing Status:

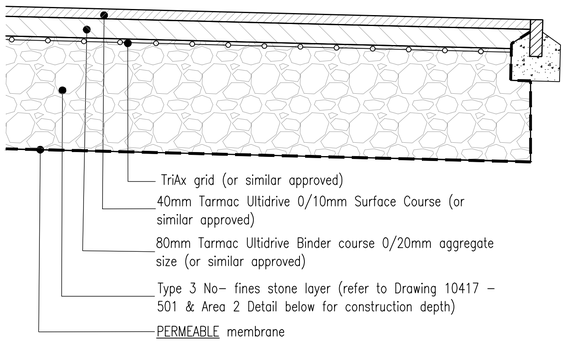
FOR COMMENT	FOR PLANNING	FOR TENDER	FOR APPROVAL	FOR CONSTRUCTION	AS BUILT
	X				

CONSTRUCTION AT CLIENT / CONTRACTOR RISK

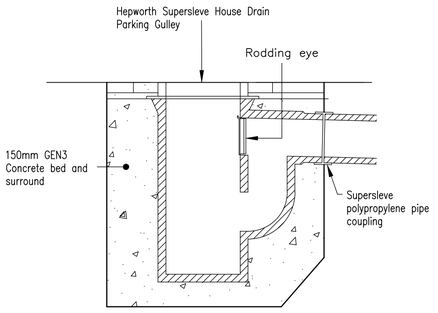
Designed by:	Drawn by:	Checked by:
SS	SS	JP

Date: April 2024
Scale: 1:100 @ A2

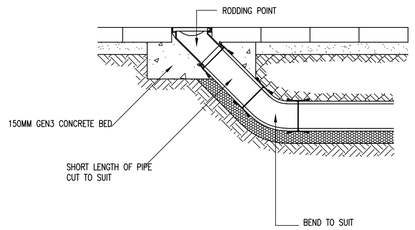
Drg. No.: 10417/501
Rev.



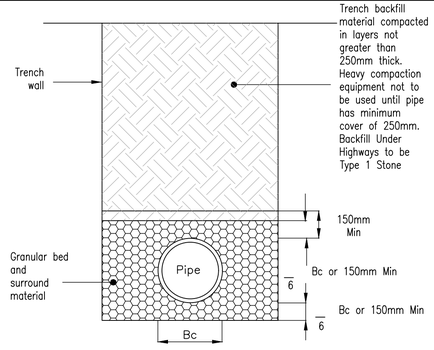
POROUS TARMAC CONSTRUCTION DETAIL
Not To Scale



PRIVATE YARD GULLY
Not To Scale

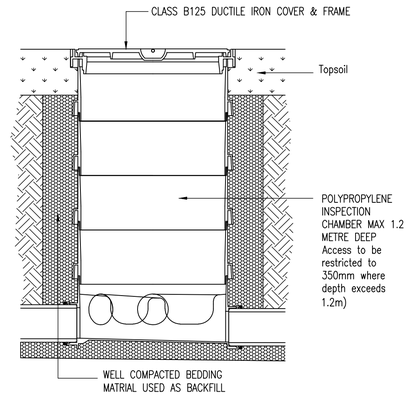


RODDING EYE DETAIL
Not To Scale

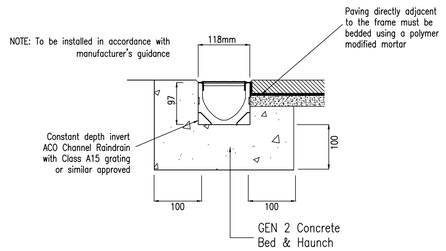


PIPE BEDDING DETAIL
Not To Scale

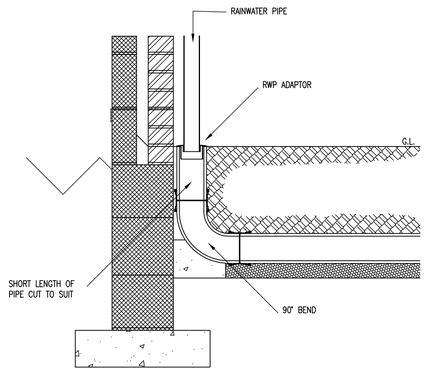
SITED IN SOFT LANDSCAPED AREAS



POLYPROPYLENE INSPECTION CHAMBER INSTALLATION DETAIL
Not To Scale

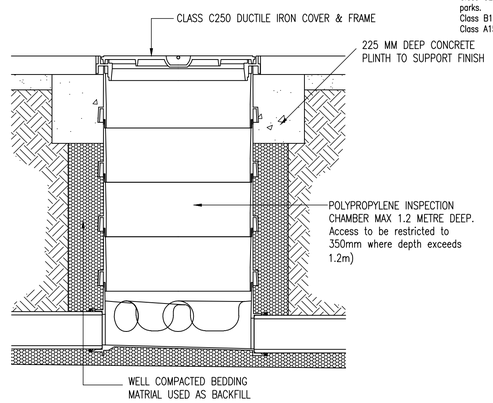


ACO RAINDRAIN DETAIL
Not To Scale

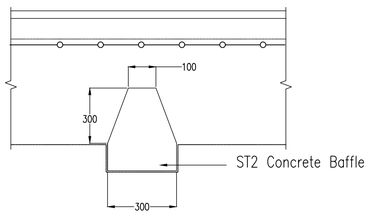


EXTERNAL RAINWATER PIPE CONNECTION DETAIL
Not To Scale

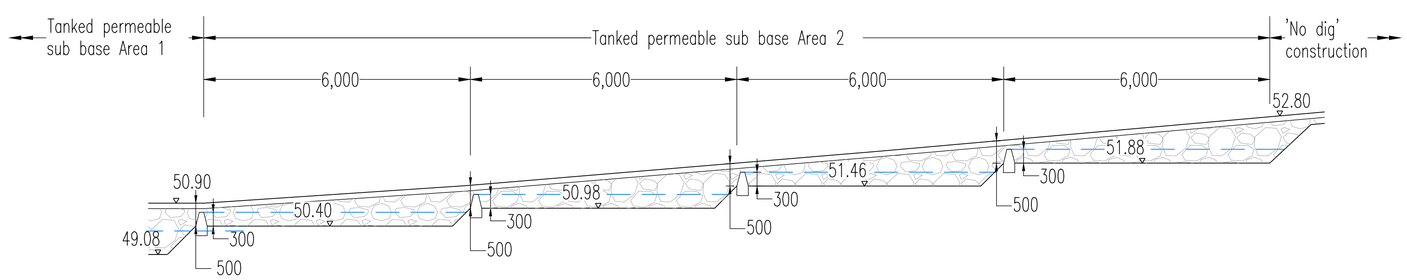
SITED IN DRIVEWAYS / HARD LANDSCAPED AREAS



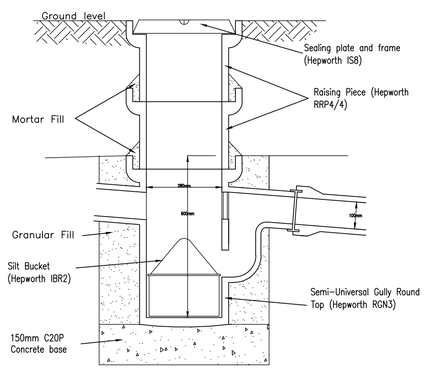
POLYPROPYLENE INSPECTION CHAMBER INSTALLATION DETAIL
Not To Scale



CONCRETE BAFFLE DETAIL (SUB BASE AREA 2)
Not To Scale



PERMEABLE SUB BASE AREA 2 DETAIL
Not To Scale



The references on this detail refer to 'Hepworth Clay Drainage' products. Alternatives using similar approved products are also acceptable.

CATCHPIT DETAIL
Not To Scale

DOMESTIC DRAINAGE NOTES

All Domestic Drainage to comply with the British Standard BS EN 752:2008 'Drain and Sewer Systems Outside Buildings' and Part H of the Building Regulations 2010.

Underground drainage components shall be one of the following: i) Wavin Osma ii) Hepworth clay or iii) Polypipe and installed in accordance with the manufacturers recommendations.

Domestic drainage to be 100mm dia. laid at a minimum gradient of 1 in 80 unless stated otherwise on the drawings. All spur connections to be laid at 1 in 80 unless otherwise stated on the drawings. Minimum cover to be 350mm (600mm for UpVC) unless concrete bed and surround is provided.

Pipe bedding as specified by the drainage manufacturer. All pipes that pass under buildings to have a minimum 100mm granular surround. Where drains pass through external walls the pipe is to be lintelled over with a minimum 50mm clear space around the pipe. Rigid pipes to be fixed to the wall externally and internally to prevent movement within the granular material.

Types of access to be as follows :-

1. 0 to 0.6m deep: - Type A Inspection Chamber
2. 0.6m to 1m deep: - Type B Inspection Chamber
3. 1m to 1.8m deep:- Type C Inspection Chamber

Where required, Step Irons to be built into the inspection chamber in accordance with the requirements of the aforementioned British Standard and Building Regulations. The top step iron shall be fixed not more than 750mm below the surface and the lowest step to be fixed not more than 300mm above the benching.

Manhole Covers and Frames to comply with BS EN 124.

Class D400 for areas with frequent vehicular usage such as roads.
Class C250 for areas with light vehicular usage such as car parks.
Class B125 for pavements and pedestrian areas.
Class A15 for areas inaccessible to motor vehicles.

TABLE 1: PROCESSED AND AS-DUG GRANULAR BEDDING AND SIDEFILL MATERIALS FOR RIGID PIPES

Pipe nominal size (DN)	Nominal maximum particle size (mm) See note (c)	Class of bedding See note (d)	Suitable Materials	
			EITHER: Maximum CF value for acceptability See note (b)	OR: Materials specified in British Standards See note (a)
100	10	S	0.15	10nn nominal single-size
		B	0.30	
		F	0.15	
		N	0.30	Fine aggregate
Over 100 to 150	16	S	0.15	10nn or 14nn nominal single-size or 14nn to 5nn graded
		B	0.30	
		F	0.15	
		N	0.30	Fine aggregate
Over 150 to 300	20	S	0.15	10, 14 or 20nn nominal single-size or 14nn to 5nn graded or 20 to 5nn graded
		B	0.30	
		F	0.15	
		N	0.30	All-in aggregate or fine aggregate
Over 300 to 550	20	S	0.15	14nn or 20nn nominal single-size or 14nn to 5nn graded or 20 to 5nn graded
		B	0.30	
		F	0.15	
		N	0.30	All-in aggregate or fine aggregate
Over 550	40	S	0.15	14, 20 or 40nn nominal single-size crushed rock or 14nn to 5nn, 20 to 5nn or 40 to 5nn graded
		B	0.30	
		F	0.15	
		N	0.30	All-in aggregate or fine aggregate

Notes:
(a) Processed granular materials to include aggregates to BS EN 13242.
(b) Compaction Fraction value (CF), see Appendix B of WIs IGN No. 4-08-02.
(c) The nominal maximum particle sizes apply both to processed and as-dug materials (see Section 4 of IGN No. 4-08-01-Issue 4 and No4-08-01 Amendment (Nov 2008)).
(d) Bedding classes are defined in:- BS EN 1295-1:1997 'Structural Design of Buried Pipelines under various conditions of loading. TRRL - Simplified Table of External Loads on Buried Pipelines.
(e) The sulphate content of bedding and sidefill materials for use with cementitious pipe should not be greater than 0.3% as sulphur trioxide.

TABLE 2: PROCESSED GRANULAR BEDDING AND SIDEFILL MATERIALS FOR FLEXIBLE PIPES

Pipe nominal bore (nn) See note (d)	Nominal maximum particle size (nn)	Suitable Materials		
		EITHER: Maximum CF value for acceptability See note (b)		OR: Materials specified in British Standards See note (a)
		Non-pressure pipe	Pressure pipe	
100	10	0.15	0.30	10nn nominal single-size
Over 100 to 150	16	0.15	0.30	10 or 14nn nominal single-size or 14nn to 5nn graded
Over 150 to 300	20	0.15	0.30	10, 14 or 20nn nominal single-size or 14nn to 5nn graded or 20nn to 5nn graded
Over 300 to 550	20	0.15	0.30	14nn or 20nn nominal single-size or 14nn to 5nn graded or 20 to 5nn graded
Over 550	40	0.15	0.30	14, 20 or 40nn single-size or 14nn to 5nn graded or 20nn to 5nn graded or 40 to 5nn graded.

Notes:
(a) Processed granular materials to include aggregates to BS EN 13242.
(b) Compaction Fraction value (CF), see Appendix B of WIs IGN No. 4-08-02.
(c) For the purpose of this table, PE pipes of 630nn OD can be regarded as having nominal bores of over 550nn, irrespective of wall thickness.
(d) Nominal bore is used in preference to DN because of the different nominal size classification for flexible pipes.
(e) For PE80 and PE100 polyethene pipe complying with current relevant Water Industry Specifications, the maximum sidefill particle size may be increased to 10% of the pipe nominal size.
(f) For E' values for processed granular materials reference should be made to Table A3 of WIs IGN No. 4-08-02 where specific site tests have not been performed.
(g) For ferrous cementitious pipeline materials, the sulphate content of bedding and sidefill materials should not be greater than 0.3% as sulphur trioxide.

No.	By	Date	Revision Details

Cole Easdon
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Client
Twiglets Developments Ltd

Job Title
72 Harefield Rd
Uxbridge
Middlesex
UB8 1PL

Drawing Title
Proposed Surface Water Drainage Details

Drawing Status:

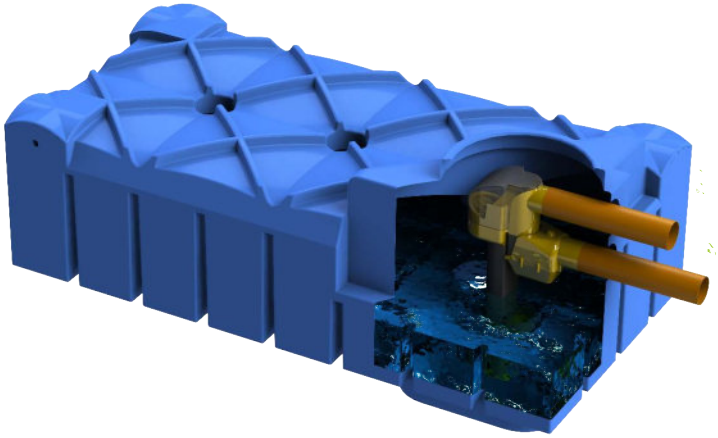
FOR COMMENT	FOR PLANNING	FOR TENDER	FOR APPROVAL	FOR CONSTRUCTION	AS BUILT
	X				

CONSTRUCTION AT CLIENT / CONTRACTOR RISK

Designed by:	Drawn by:	Checked by:
SS	SS	JP

Date: April 2024
Scale: NTS

Drg. No.: 10417/502
Rev.



STORMSAVER 25 YEAR GUARANTEE

save water,
save money,
save the
environment

Shallow Dig (SD)
Tank Product Data Sheet

Product Description

The Stormsaver Shallow Dig (SD) storage tanks are ideal for storage of rainwater for domestic rainwater harvesting systems.

Combined with our Monsoon Eco or Monsoon Favorit unit, the SD range of tanks provides a simple and cost effective solution to installing a rainwater system in any home.

Rainwater can be harvested and re-used for a number of applications including toilet flushing, laundry and garden watering and can reduce household water consumption by up to 50%.

The Shallow Dig (SD) range comes with many benefits including:

- Minimum installation depth
- Less earth to excavate and remove from site
- One piece, light and easy to manoeuvre without the need for plant equipment
- No concrete surround required
- Suitable for high water tables
- Integral leaf filter, overflow siphon and inlet calmer all pre-fitted
- Durable and economical
- Access for maintenance is easier than other circular tanks

Materials & Manufacture

The SD range is manufactured from high quality rotationally moulded Polyethylene. Being manufactured all in one piece makes it easy to deliver, manoeuvre and install.

The tanks carry a 25 Year Guarantee!

The unique anti-buoyancy technology applied to the design and manufacture means it can be installed in high water table locations so long as the earth coverage requirements are followed.

Installation

As the height of the tanks range from as little as 1015mm to 1415mm the hole needed in the ground is much less than for standard circular or oval tanks. Access for maintenance is also easier.

This also means that the hole can be dug by hand if a JCB is not available and there is no need to shore up the sides.

The structural strength of the SD range means there is no need to concrete it in, again reducing cost and easing installation.

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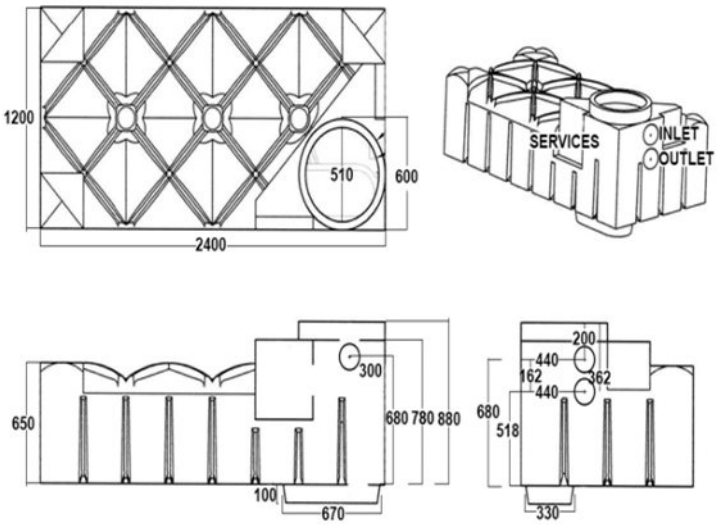
Technical Details

Size	Length	Width	Height (tank body)	Height (inc 235mm turret)	Weight	Inlet & overflow sizes	Service duct size	Height from base of tank to inlet	Height from base of tank to overflow
1500L	2400mm	1200mm	650mm*	1115mm	80kg**	110mm	110mm	680mm	518mm
3000L	2400mm	2400mm	650mm*	1115mm	170kg**	110mm	110mm	680mm	518mm
5000L	2960mm	2220mm	920mm*	1450mm	250kg**	110mm	110mm	1015mm	853mm
7500L	3340mm	2310mm	1125mm	1520mm	310kg**	110mm	110mm	1085mm	923mm

* Sump basin height is 100mm in addition. ** Weight without integral leaf filter and inlet calmer. Add 5kg for tanks which include these items.

Maximum depth of ALL tanks is 1.5m from the top of the tank to finished ground level

Technical Drawing (1500L)



Accessories

235mm
Entrance Shaft

Pedestrian duty lid

635mm
Entrance Shaft

600mm
Spacer Ring

Either a 235mm or 635mm entrance shaft must be used with the SD tank. A spacer ring can be used to extend the 235mm shaft. Vehicle duty lids and 635mm entrance shafts are available on request for driveways.

Complimentary Products

Stormsaver offer a wide range of products. Please contact our sales team to find out more about:

- Monsoon Eco and Monsoon Favorit control units low energy, compact control units housing all technology necessary to control your rainwater system and mains water back up
- Floating suction filter kits – and other fittings to make your rainwater harvesting system complete
- Suction Hose supplied in 20m or 40m lengths to connect your floating suction filter in your SD tank to the control unit in your home
- Commercial rainwater harvesting solutions

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40% Less energy*

Monsoon Favorit 20/40
Control Panel Data Sheet

Product Description

The Monsoon Favorit range of control panels have been specially developed for rainwater harvesting in large family homes or small commercial buildings. With a range of flow rates and both fixed and variable speed options, they provide the most cost effective and sustainable solution for rainwater harvesting.

The Monsoon Favorit Range

Rainwater can be harvested and re-used for a number of applications including toilet flushing, laundry, garden watering and sprinkler systems and can reduce household water consumption by up to 50%.

The control panels are easy to install and can be sited anywhere in the home. High quality components guarantee reliability and durability, all in a system compliant with BS8515 - 2009.

The Monsoon Favorit control panel activates on demand to supply a clean, clear, odourless supply of water.

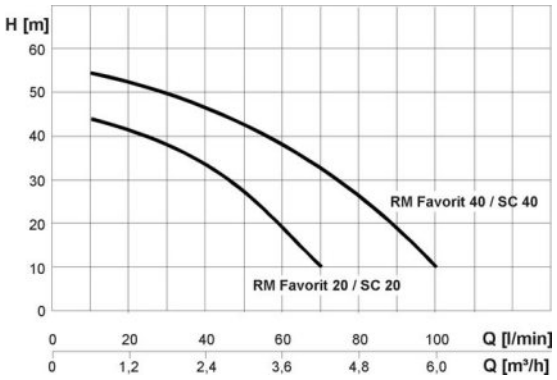
For projects where the installation goes beyond the control panel limitations, a small boosted floating suction filter kit may be required (fixed speed panels only).

During periods of low rainfall a sensor in the storage tank activates the integrated motorised valve within the control panel, switching from rainwater to mainswater. Mains water is supplied to the control panel via an automatic refill unit compliant with the Water Supply (Fittings) Regulations 1999.

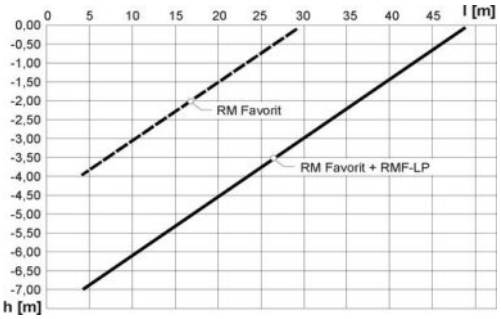
Special Features

- Compliant with Water Supply (Fittings) Regulations 1999
- Low noise levels in operation with only 65 dbA
- Available in the following range: Monsoon Favorit 20 (fixed and variable speed) Monsoon Favorit 40 (fixed and variable speed)
- Monsoon Favorit 20 = 80L/ min
- Monsoon Favorit 40 = 110L/ min
- Variable speed units can reduce energy consumption by up to 40% when compared to 800W pumped systems.
- Self priming, refer to graph below.
- Dry run protection
- Optimised for usual consumption points such as toilets, washing machines, garden tap. Also suitable for permanent running and large garden sprinklers
- Unit includes 2 x 300mm flexible reinforced hoses for potable water pipe connection and for rainwater discharge connection.
- Includes valve, expansion vessel, gauge & 10% float switch

Favorit Pump Capabilities (Head)



Do you require a Floating Booster Pump kit?



Floating booster pumps are not suitable for use with the variable speed units. This graph shows an example of when a floating suction booster kit is required as an additional item to be used with the Monsoon Favorit (fixed speed) unit:

Example A: Length of suction pipe = 12m. Depth of suction = 2.4m. Unit can be used without the booster pump as it is above the characteristic curve.

Example B: Length of suction pipe = 18m. Depth of suction = 3.2m. Unit requires the booster pump as it is below the characteristic curve

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Technical Details

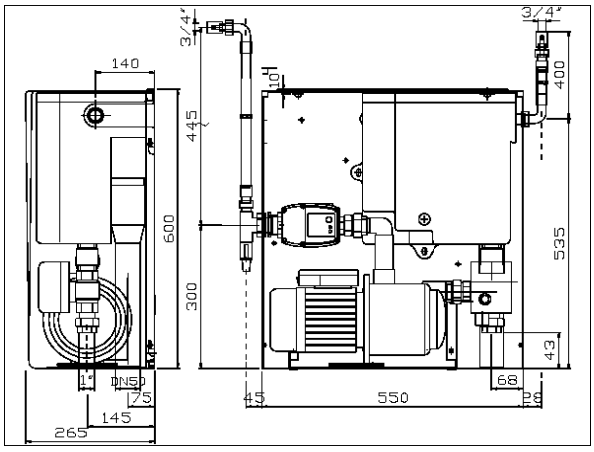
	Monsoon Favorit 20F	Monsoon Favorit 20V	Monsoon Favorit 40F	Monsoon Favorit 40V
Size (H x W x D)	595 x 550 x 265 mm	595 x 550 x 265 mm	595x550x265mm	595 x 550 x 265 mm
Weight	32 kg	33kg	33kg	34kg
Power supply in	230 V AC / 50Hz	230 V AC / 50-60Hz	230 V AC / 50Hz	230 V AC / 50-60Hz
Current consumption	24 V DC / 4 A	24 V DC / 4 A	24 V DC / 5.8A	24 V DC / 4 A
Power consumption	0.8kW	0.8kW	1.25kW	1.25kW
Max. working pressure	4.5 bar	2.0 – 4.5 bar (adjustable)	5.5 bar	2.0 – 5.5 bar (adjustable)
Max. flow	80 L/min	80 L/min	110 L/min	110 L/min
Primary pressure	2.5 - 6 bar (Mains Supply)	2.5 - 6 bar (Mains Supply)	2.5 - 6 bar (Mains Supply)	2.5 - 6 bar (Mains Supply)
Pump start pressure	1.8 – 2.5 bar (adjustable)			
Protection class	IP 54	IP 54	IP 54	IP 54
Noise level	60 dbA	35 – 65 dbA	65 dbA	35 – 65 dbA
Max. height between pump and consumer	15m	20m	15m	30m

Connections and materials

Connections	Potable water pipe	Male 1" BSP
	Rainwater suction pipe	Male 1" BSP
	House pipework	Male 1" BSP
Materials	Base plate	Powder Coated Steel
	Case	Plastic ABS
	Potable water reservoir	Polypropylene (PP)

Float switch	Cable	Ø8mm x 15m
	Switch (Ø x H)	90mm x 47mm
	Material	Neoprene, PP
	Protection class	IP68

Technical Drawing



Accessories

1" BSP non collapsible pump suction hose

1" floating suction filter kits

1" Boosted floating suction filter kits

Also available: additional length cables for low level protection switch in 10m, 15m, 20m and 30m lengths

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Monsoon Eco & Favorit
Accessories Range

save water,
save money,
save the
environment

introduction

The Monsoon Eco and Monsoon Favorit range of control panels have been specially developed for rainwater harvesting in domestic properties or small commercial buildings. With a range of flow rates and both fixed and variable speed options, they provide the most cost effective and sustainable solution for rainwater harvesting. As part of the range of control units, Stormsaver offer a selection of accessories to enable our customers to source all the parts required for a complete rainwater harvesting system.

Floating suction filter kits

Stormsaver provide a complete coarse floating suction filter kit for connection to the Monsoon Eco and Monsoon Favorit. The kit comes complete with coarse floating suction filter, ball float, hose tail and clips for connection to the suction hose, hose tail to the control panel and non return valve.
Floating suction filters are available in 1/2" or 1" options.

Boosted floating suction filter kits

A boosted floating suction filter kit is recommended where the installation requirements exceed the capabilities of the suction pump alone. A chart detailing this is available on the Monsoon Eco and Monsoon Favorit data sheets.

The kit contains a small booster pump, ball float, hose tail and clips for connection to the suction hose, non return valve and electrical connection box. If you need this kit you **will not need** to purchase the floating suction filter kit as well as all the same parts are included in the boosted floating suction filter kit.

Level display for the Monsoon Eco

Stormsaver can provide a level display which is easily fitted to the Monsoon Eco unit and shows the rainwater level in the storage tank. This comes complete with LED display board, level sensor cable and electrical connection box. The measuring range is approximately 1.2m - 2.8m

Suction Hose

Stormsaver can provide flexible suction hose to connect your control panel to the floating suction filter. Hose can be supplied in 20m or 40m lengths and is available in 1/2" and 1" diameters. Hose should be connected in one continuous length without breaks to ensure good suction is achieved.

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