



**Sustainable Drainage Strategy**

at  
**260 Coombe Lane, West Wimbledon, London SW20 0RW**

for  
**Glenn Perry Capuyan**

**Reference: 21173/SDS\_Rev1.0**  
**January 2024**

## Control Document

### Project

260 Coombe Lane, West Wimbledon, London SW20 0RW

### Document Type

Sustainable Drainage Strategy

### Document Reference

21173/SDS\_Rev1.00

### Status

Final

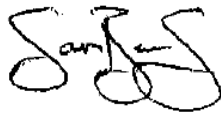
### Date

January 2024

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This is not a valid document for use in the design of the project unless it is titled Final in the document status box.

Current regulations and good practice were used in the preparation of this report. The recommendations given in this report must be reviewed by an appropriately qualified person at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

**Commission**

This report comprises a Sustainable Drainage Strategy (SDS) at 260 Coombe Lane, West Wimbledon, London SW20 0RW.

**Commission Record**

Client:	Ghlena Perry Capuyan
Site Name:	260 Coombe Lane, West Wimbledon, London SW20 0RW
Grid Reference:	TQ 22309 69640
Soils Limited Quotation Ref:	Q28180 Rev.2 dated 13 <sup>th</sup> October 2023.
Clients Signed Order Form:	Q28180 Rev.2 dated 17 <sup>th</sup> October 2023.

The record of revision to this document is presented below:

**Record Of Revisions**

Revision	Date	Reason
1.00	January 2024	Original to Client

Note(s): The latest revised document supersedes all previous revisions of the GIR produced by Soils Limited.

Documents associated with this development that must be referred to are given below.

**Record Of Associated Documents**

Reference	Type	Date	Creator
21173/BIA	Basement Impact Assessment	December 2023	Soils Limited
21173/FRA	Flood Risk Assessment	January 2024	Soils Limited

**Caveats, Limitations and Disclaimers**

Whilst reasonable skill and care has been taken to prepare this report within the time and other constraints applied by the project, it should be appreciated that uncertainties may occur owing to factors including return period of events, seasonal fluctuations in groundwater level and inherent uncertainty of the effect of climate change.

Without a drainage survey it is not possible to establish if the surface water drainage is to the main drainage system or soakaways. If there are soakaways on-site, they could act as a potential source. The geology on-site to an extent may determine if soakaways were likely to have been adopted.

This Report relates to the site located at 260 Coombe Lane, West Wimbledon, London SW20 0RW and was prepared for the sole benefit of Glenn Perry Capuyan (The "Client") for the brief described in the Commission of this report.

The contents, recommendations and advice given in the report are subject to the Terms and Conditions given in Quotation Q28180 Rev.2 dated 13<sup>th</sup> October 2023 and accepted by the Client.

Soils Limited disclaims any responsibility to the Client and others in respect of any matters outside the scope of the above.

This report has been prepared by Soils Limited, with all reasonable skill, care and diligence within the terms of the contract with the Client, incorporation of our General Conditions of Contract of Business and considering the resources devoted to us by agreement with the Client.

The report is personal and confidential to the Client and Soils Limited accept no responsibility of whatever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report wholly at its own risk.

The Client may not assign the benefit of the report or any part to any third party without the written consent of Soils Limited.

This report does not purport to provide definitive legal advice, nor can it be used to demonstrate that the site will never be subject to flood events in the future.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid considering changes in regulation and practice, or additional information obtained regarding the site.

Ordinary watercourses (OWs) are defined as rivers (which are not designated as main rivers), streams, ditches, drains, culverts, cuts and sewers (other than public sewers). This includes all OWs that are not mapped. Ordinary watercourse consent (OWC) is required from the Lead Local Flood Authority (LLFA) when changing/adapting/adding to the cross sections of OWs. Installations of any structure or obstruction into an OW that

impedes the flow without consent is prohibited by the Land Drainage Act 1991 Section 23.

Failure to remove obstructions may result in legal action by the LLFA with powers under Section 25 of the Land Drainage Act 1991.

Soils Limited suggest surveying the site for OW usually seen in rural areas as boundary ditches to avoid potential impacts to residents downstream and prosecution. OWC can be applied for from the LLFA.

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**Section I****General****I.1 Scope**

This Sustainable Drainage Strategy (SDS) outlines the fundamental drainage principles and requirements in relation to the proposed development at 260 Coombe Lane, West Wimbledon, London SW20 0RW.

The report provides an overview of the sustainable drainage strategy design for the proposed development based on site conditions and SuDS guidance: Building Regulations Approved Document Part H and CIRIA C753: The SUDS Manual 2015.

The Sustainable Drainage Strategy is a live document to be updated as additional information becomes available and the evolving detailed design progresses.



## Section 2 Introduction and Site Setting

### 2.1 Introduction

Gh Glenn Perry Capuyan commissioned Soils Limited in October 2023 to undertake an SDS for the proposed development at 260 Coombe Lane, West Wimbledon, London SW20 0RW, referred to as 'the site' in this report.

This report has been prepared for Gh Glenn Perry Capuyan and must not be relied upon by any other party without the explicit written permission of Soils Limited.

All parties to this report do not intend any of the terms of the Contracts (Right of Third Parties Act 1999) to apply to this report.

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### 2.2 Site Details

The site has not been visited for purposes of this report by Soils Limited but at the time of reporting comprised a roughly rectangular plot including a single-storey residential property along the western site boundary, separate garage to the east, driveway leading southeast and gardens to the front and rear. The main access point was in the southeast of the site. The site was located at or around TQ 22309 69640.

The site had no significant slope, but the area was sloping in a south-westerly direction of  $<3^\circ$ , based on Google Earth™ elevation data.

The total area of the site was  $\sim 570\text{m}^2$ , with the existing building, outbuilding and hardstanding covering an area of  $\sim 328\text{m}^2$ .

An aerial photograph of the site and its close environs has been included in Figure 2.

### 2.3 Proposed Development

It is understood the proposal includes the demolition of the existing bungalow and the construction of a two-storey detached residential property with accommodation in the loft space and full basement across the site footprint, totalling six flats.

The southern side of the building comprised a permeable driveway and hardstanding for car parking, and bin and cycle storage. On the northern side of the building were gardens comprising areas of permeable paving and decking surrounded by grass lawn.

The total proposed area covered by the buildings footprint and hardstanding was  $\sim 300\text{m}^2$ , excluding the areas of permeable hardstanding.

In compiling this report reliance was placed on pre-application drawings A-01 to A-14, dated 6<sup>th</sup> September 2023, provided by Glenn Perry Capuyan. The recommendations provided within this report are made exclusively in relation to the scheme outlined above and must not be applied to any other scheme without further consultation with Soils Limited. Soils Limited must be notified about any change or deviation from the scheme outlined.

## **2.4 Anticipated Geology**

The 1:50,000 BGS map showed the site to be located on the Kempton Park Gravel Member over bedrock of the London Clay Formation.

### **2.4.1 Kempton Park Gravel Member**

The rivers of the south-east of England, including the River Thames and its tributaries, have been subject to at least three changes of level since Pleistocene times. One result has been the formation of a complex series of River Terrace Gravels. These terraces represent ancient floodplain deposits that became isolated as the river cut downwards to lower levels. The Kempton Park Gravel is found at an elevation below the current river level.

The composition of the Kempton Park Gravel varies greatly, depending on the source material available in the river's catchment. Deposits generally consist of sands and gravels of roughly bedded flint or chert gravels commonly in a matrix of silts and clays.

### **2.4.2 London Clay Formation**

The London Clay Formation comprises stiff grey fissured clay, weathering to brown near surface. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of gypsum (Selenite) are often found within the weathered part of the London Clay, and precautions against sulphate attack to concrete are sometimes required.

The upper boundary member of the London Clay Formation is known as the Claygate Member and marks the transition between the deep water, predominantly clay environment and succeeding shallow-water, sand environment of the Bagshot Formation.

The lower boundary is generally marked by a thin bed of well-rounded flint gravel and/or a glauconitic horizon. The formation overlies the Harwich Formation or where the Harwich Formation is absent the Lambeth Group.

## **2.5 Hydrogeology**

Information presented by the Environment Agency classifies the Kempton Park Gravel Member as a Secondary A Aquifer and bedrock London Clay Formation as an Unproductive Strata. It would be anticipated that groundwater will therefore be present within and flow through the superficial Kempton Park Gravel Member but is unlikely to be present in significant quantities in the underlying London Clay Formation.

## **2.6 Hydrology**

The nearest surface water course is located 6m east of the site, an unnamed inland river. It runs approximately north to south along the site's eastern boundary before being culverted beneath the A238 Coombe Lane. The Beverley Brook, a tributary of the River Thames, is located approximately 368m west of the site.

## **2.7 Infiltration Testing**

Infiltration testing was undertaken as part of ground investigation works (report ref: 21173\_BIA, dated January 2024) in TP01 with the Kempton Park Gravel Member in accordance with the principles of BRE DG 365: 2016.

A single test was carried out in TP01, which was excavated by hand to a depth of 1.50m bgl, as agreed with the Client. There was no observable fall in water level (head) during the test period of over 6hrs. It must also be noted that subsequent monitoring works recorded groundwater at 1.26m to 1.36m bgl in the Kempton Park Gravel Member.

Given the above, the use of infiltration for surface water discharge on site was unviable.

## **2.8 Flood Risk**

A separate Flood Risk Assessment (Report ref: 21173\_FRA, dated January 2024) has been undertaken for the site. The site of interest lies within Flood Zone 1, has an area of less than 1 hectare and did not fall into an area at risk from river and sea. The site was in a critical drainage area with a low to medium risk from surface water flooding, and potential for elevated groundwater.

**Section 3 Existing Drainage**

**3.1 Existing Surface Water Drainage**

Asset Location Plans obtained from Thames Water show the nearest surface water sewer runs beneath the pavement of Coombe Lane to the front of the property.

The plans show a sewer, which is labelled ‘proposed’ along the access road to No.258 Coombe Lane, located to the rear (north / northwest) of the site. This is shown to join the foul trunk sewer located under the front gardens of the properties along Coombe Lane but has no connection to the site indicated.

A drainage survey was not supplied by the Client at the time of preparing this report, but given the works comprise the replacement of an existing residential property, an existing surface water drainage connection should be available to be utilised, subject to agreement with the local service provider.

The Asset Location Plans supplied by Thames Water are included in Appendix B.

**3.2 Existing Foul Drainage**

There is an unspecified sewer located along the boundary with No. 262 Coombe Lane, to the west of the property, which is not operated or maintained by Thames Water. It runs south and joins the foul trunk sewer located to the front of the properties.

A drainage survey was not supplied by the Client at the time of preparing this report, but given the works comprise the replacement of an existing residential property, an existing wastewater drainage connection will be present on site.

The Asset Location Plans supplied by Thames Water are included in Appendix B.

**3.3 Existing Surface Water Discharge Rates**

The site is currently occupied by a single residential property, so it is anticipated that any existing surface water input either infiltrates into the ground or runs off into the surface water network freely. Given the very small site, calculation of existing discharge rates is simplified to provide a conservative value.

**Table 3.1 Existing Pre-development Discharge Rates**

<b>Site Area</b>	<b>Existing Q (free discharge)</b>
0.06Ha	0.5 l/s

Further calculations are included in Appendix C.

## Section 4 Proposed Surface Water Drainage

### 4.1 General

The overarching principle of SuDS design is that surface water runoff should be managed for maximum benefit.

The SuDS Manual 2015 (CIRIA C753) and Building Regulations Approved Document Part H dictate that Sustainable Drainage System (SuDS) should be applied to all components of surface water management design and construction.

The SuDS hierarchy for the disposal of surface water to a receptor is set out as follows:

1. Via infiltration where ground conditions are suitable
2. Discharge to surface water course
3. Discharge to surface water sewers, highway drain or other drainage system
4. Discharge to combined sewer

It has been established by in-situ testing that the shallow underlying soils on site are generally impermeable and not suitable for the use of soakaways or other forms of direct infiltration to ground. As such, disposal of surface water will need to be into the adjacent watercourse, subject to appropriate permissions, or to surface water sewer.

The surface water sewers are likely to be limited in capacity, so the SuDS systems on site must be designed accordingly, and to accommodate up to and including the 1:100-year event + 40% for Climate Change.

All SuDS features have been designed in accordance with the CIRIA SuDS Manual.

### 4.2 Proposed Discharge Rates

The proposed discharge rates will be limited to pre-development / greenfield discharge rate and have been calculated utilising the Greenfield runoff tool on [www.uksuds.com](http://www.uksuds.com), using the IH 124 method.

The surface water generated from the development site is proposed to be discharged to at a rate of 5 l/s/ha rate on the impermeable area in the development. Given this area is estimated to be 300m<sup>2</sup> (0.03Ha), the Low  $Q_{bar}$  is 0.15 l/s.

For the purposes of this strategy, the discharge rate will be set at 5 l/s.

It is noted that the estimated area of hardstanding is currently 328m<sup>2</sup>, out of a total site area of 570m<sup>2</sup>, so the proposed offers a net reduction in hard cover. As such, the volume of run-off directly from impermeable surfacing will be reduced as part of the development and the use of SuDS will provide a betterment of existing surface water management, which in turn will reduce flood risk on the site.

**4.3 Proposed SuDS Features**

The proposed SuDS features will include a green roof to attenuate runoff from the new building whilst permeable paving will be used to attenuate runoff across external areas.

**4.3.1 Green Roof**

The green roof will provide a vegetated layer capable of absorbing and storing surface water falling over the building footprint. It will intercept and reduce run-off through evapotranspiration and by use of a flow control system at the outlet the drainage layer can attenuate the discharge rate.

The green roof will also add a biodiversity and amenity benefit to the development.

**4.3.2 Permeable Paving**

Permeable paving is proposed over the driveway and parking areas to the front of the property and in the rear garden areas, alongside decking and grass lawn. The porous surfacing will allow water to soak into the underlying granular layer for storage and attenuation using a flow control system at the outlet.

**4.4 Proposed SuDS Volume**

The SuDS systems on site must be designed to accommodate up to and including the 1:100-year event + 40% for Climate Change.

**Table 4.1 Approximate Storage Volume of SuDS Features**

Proposed Rate (l/s)	Proposed SuDS Feature	Storage Volume (m <sup>3</sup> )
5	Green roof	10
	Permeable paving	

It must be noted that the site is very small for the purposes of SuDS design and calculations have been simplified accordingly to provide a conservative value. This can be achieved using both primary SuDS features and appropriate attenuation between, to suit the development design.

**4.5 Pollution Control**

The Environment Agency sets out guidelines for managing pollution issues in their pollution prevention guidelines (PPG). PPG3 states:

*“Techniques that control pollution close to the source, such as permeable surfaces or infiltration trenches, can offer a suitable means of treatment for run off from low risks areas such as roofs, car parks and non-operational areas.”*

Given the proposal, the permeable paving proposed will also treat pollutants in roadway and parking areas, and a separator will not be required.

**Section 5****Proposed Foul Drainage****5.1 General**

A drainage survey was not supplied by the client at the time of preparing this report, but given the works comprise the replacement of an existing residential property, an existing wastewater drainage connection should be available to be utilised, subject to agreement with the local service provider including confirmation of adequate capacity.

There is an unspecified sewer located along the boundary with No. 262 Coombe Lane, to the west of the property, which is not operated and maintained by Thames Water. It runs south and joins the foul trunk sewer located to the front of the properties.

## Section 6 Conclusions and Residual Risk

### 6.1 General

This report has prepared in accordance with CIRIA C753: The SUDS Manual 2015 and Building Regulations Approved Document Part H. It has reviewed site conditions and considered the use of sustainable drainage techniques as part of the proposed redevelopment on site.

### 6.2 Key Findings

The proposed SuDS features will provide storage and attenuation of surface water flows over the site footprint prior to discharge to the adjacent water course or surface water sewer.

The foul drainage will discharge to the existing sewer connection on the site, subject to agreement with the local service provider including confirmation of adequate capacity.

### 6.3 Residual Risk

Given the proposal provides a net reduction in impermeable surface area compared to the existing site layout, it will provide a betterment of current conditions. The addition of SuDS features will provide a further net improvement to drainage, contributing to a reduction in risk from pluvial and groundwater flooding on and around the site.



## Section 7 SuDS Maintenance Planning

### 7.1 General

Appropriate maintenance of SuDS features is crucial to their functionality and ongoing impact on surface water management.

All drainage systems should be subject to a schedule of regular inspection with additional checks required following any significant storm events to maintain optimum efficiency.

Inspections and maintenance works must be undertaken by suitably competent persons with correct equipment and following appropriate safety procedures.

#### 7.1.1 Green Roofs

The proposed extensive green roof will require minimal maintenance once established. Inspection of outlets at six monthly intervals will be required to ensure flow is not restricted by sediment and/or organic matter.

#### 7.1.2 Permeable Pavements

Permeable paving is to be used within access road and parking bays as well as garden areas to the rear. These areas should be inspected every six months with jet washing at two yearly intervals to remove fine debris to maintain permeability of the surface. More frequent inspection may be required in areas adjacent to soft landscaping.

#### 7.1.3 Catch Pits

Initially, these should be inspected at regular intervals (every three months) to with all debris removed. Depending how much debris is accumulating, this can be reduced to every six months and following storm events. Debris and sediment could impact the wider drainage system if allowed to accumulate, so chambers must be kept clean and clear, which should be possible from surface.

#### 7.1.4 Rainwater Downpipes, Gutters, Gullies and Channel Drains

These items must be kept clear of leaves and debris and inspected every three months and following storm events: in autumnal months greater frequency may be required. If necessary, jet washing should be used to unblock these features.

### 7.2 Health and Safety

Inspections and maintenance works must be undertaken by suitably competent persons with correct equipment and following appropriate safety procedures and management of hazards, which may include:

- Confined space working, as many drainage assets are below ground.
- Blocked manholes and catchpits
- Moving vehicles and other site users in locale of drainage asset access points

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- Appendix C Run off Calculations

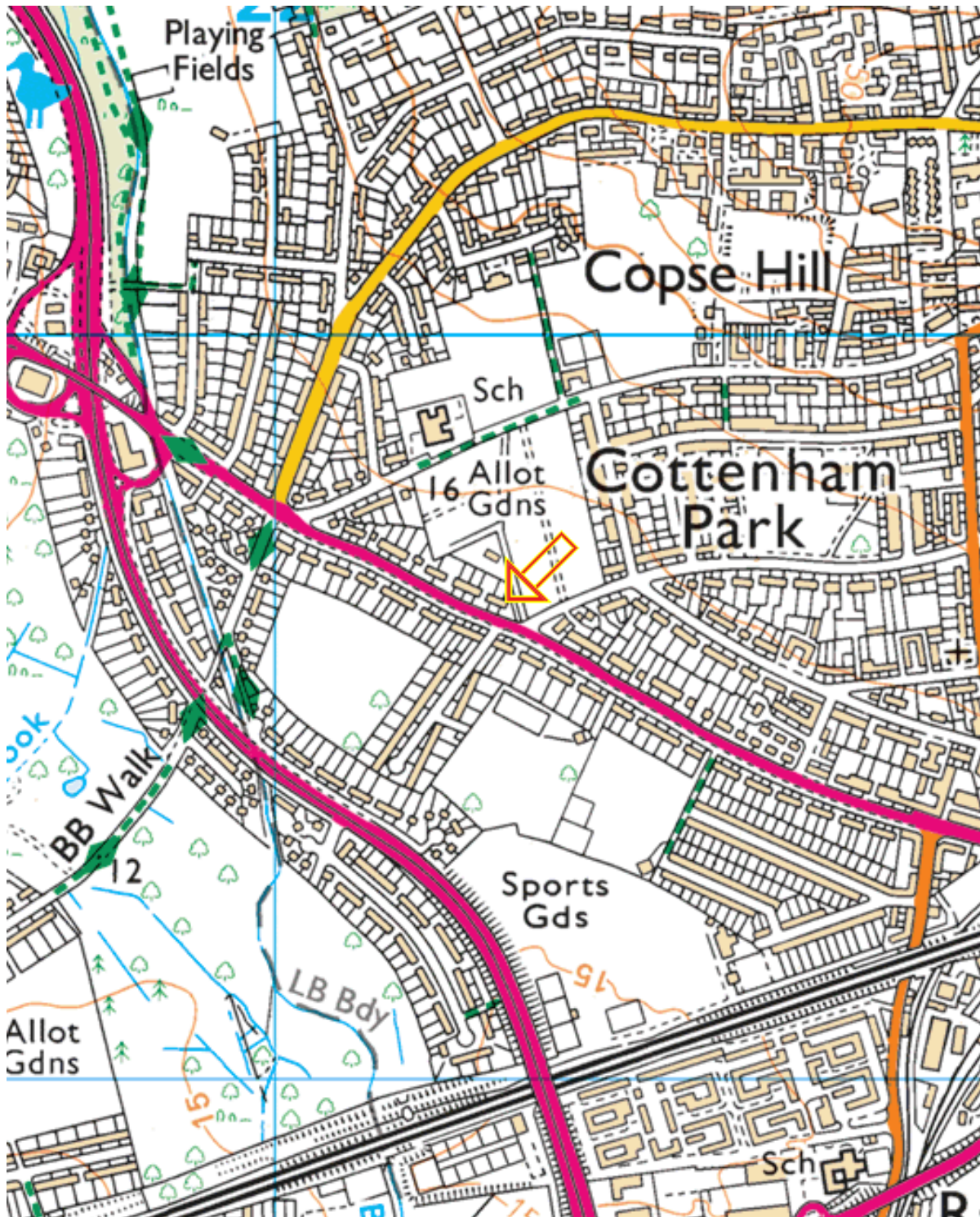


Figure 1 – Site Location Map

**Job Number**  
21173

**Project**  
260 Coombe Lane, West Wimbledon, London  
SW20 0RW

**Client**  
Glenn Perry Capuyan

**Date**  
January 2024





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**Figure 2 – Aerial Photograph**

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**Project**

260 Coombe Lane, West  
Wimbledon, London SW20 0RW

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**Client**

Glenn Perry Capuyan

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**Date**

January 2024

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**Job Number**

21173

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**Appendix A Proposed Development Plans**

PROPOSED PLANS AND ELEVATIONS

# 260 COOMBE LANE

WEST WIMBLEDON, LONDON, SW20 0RW, UK

PURPOSE OF ISSUANCE: PRE-APPLICATION NO.01

Issued: 06/09/2023





**A** | **LOCATION PLAN**  
**01**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
**W/ ACCOMMODATION AT THE LOFT AND BASEMENT**  
 260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS
<b>LOCATION PLAN</b>

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.  
 ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.  
 THIS DRAWING IS THE PROPERTY OF OWNER AND CANNOT BE REPRODUCED WITHOUT WRITTEN CONSENT.

REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
			DRAWN	MCV	<b>A-01</b> A3 PAPER SIZE
			APPROVED		
			REVISED		





**A** | **EXISTING BLOCK PLAN**  
**02**



**B** | **PROPOSED BLOCK PLAN**  
**02**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W/ ACCOMMODATION AT THE LOFT AND BASEMENT

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

EXISTING BLOCK PLAN  
PROPOSED BLOCK PLAN

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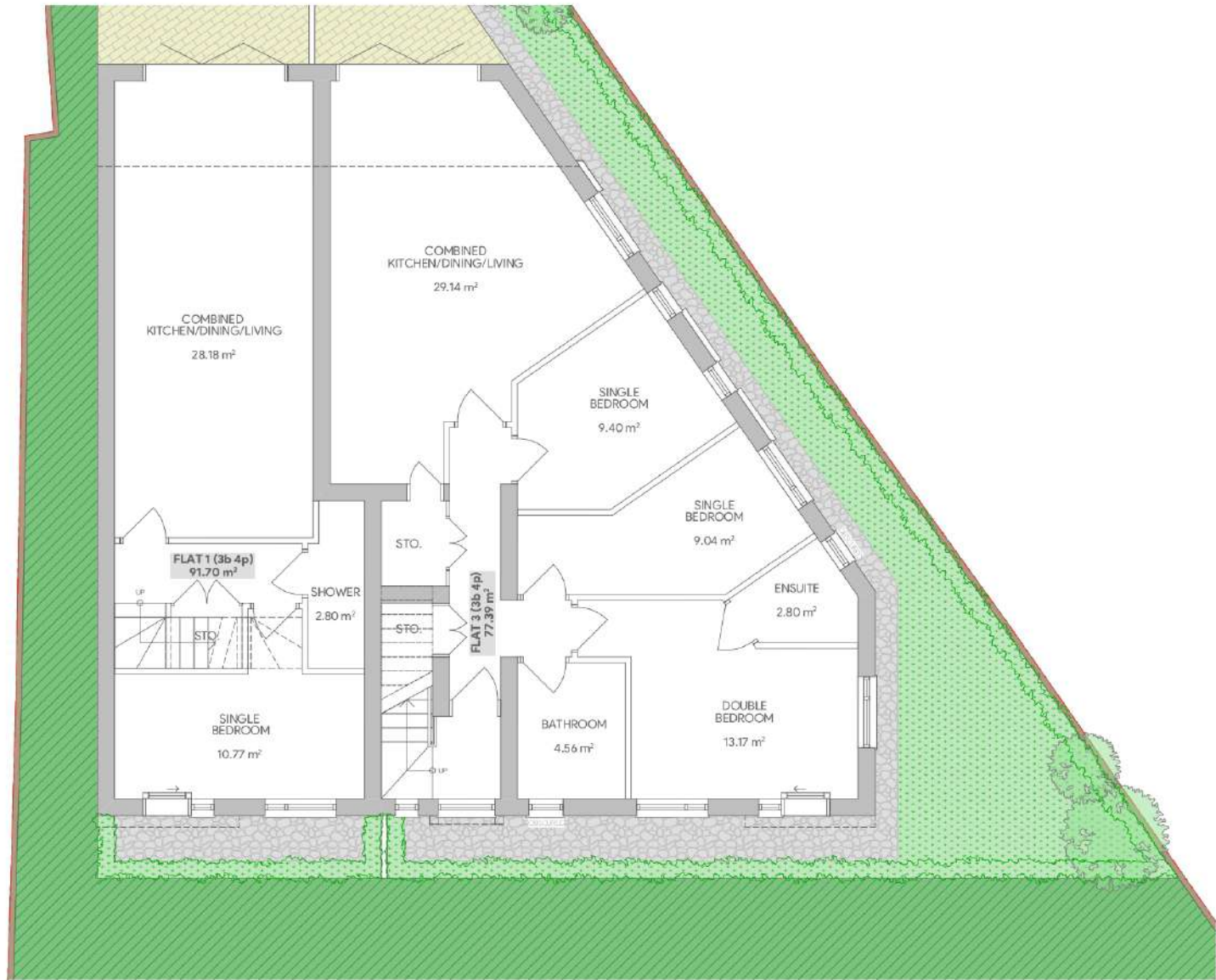
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A-02

A3 PAPER SIZE





**A** | **PROPOSED BASEMENT FLOOR PLAN**  
**03**

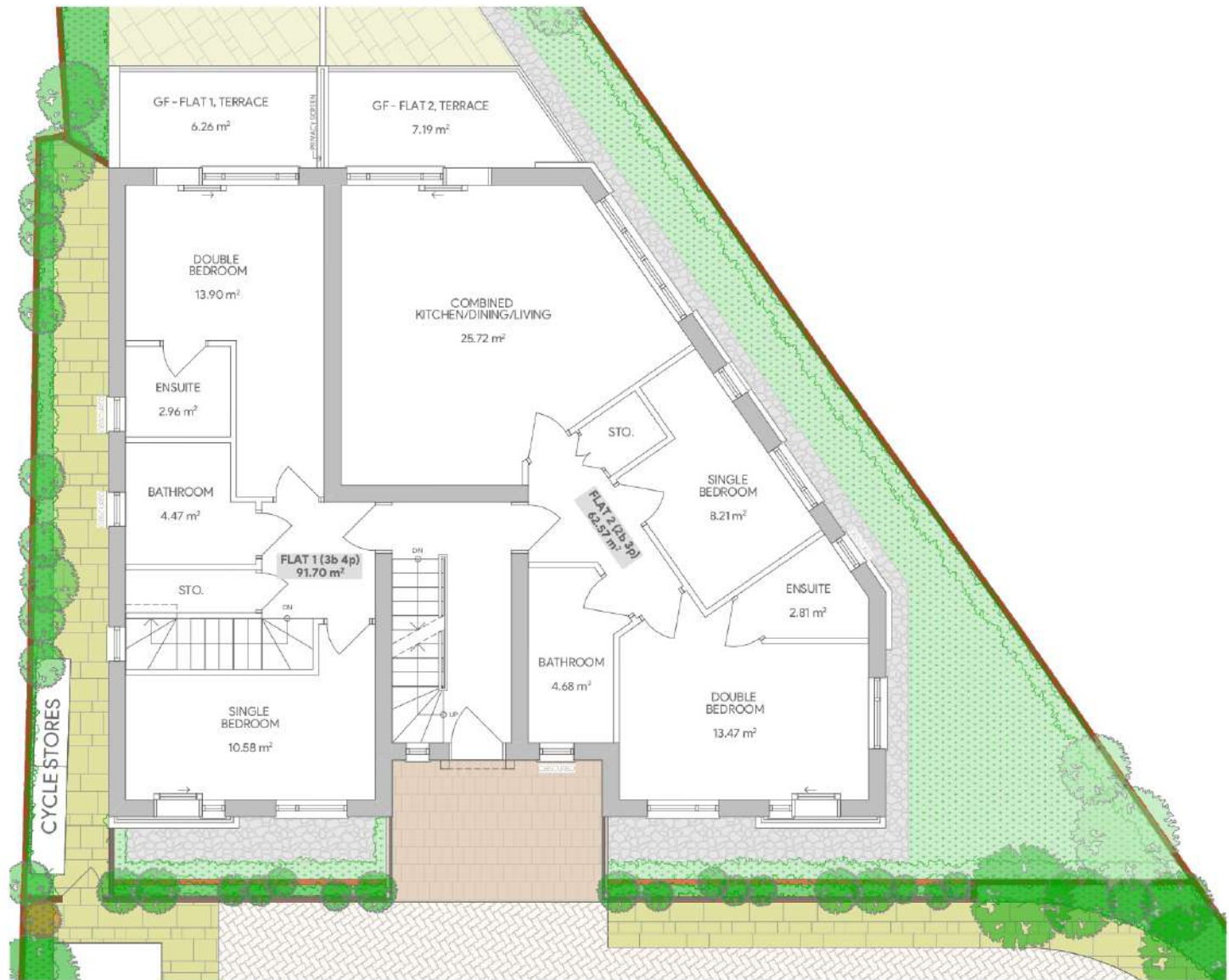
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 W/ ACCOMMODATION AT THE LOFT AND BASEMENT  
 260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS
<b>PROPOSED BASEMENT FLOOR PLAN</b>

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REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
			DRAWN	MCV	A-03 A3 PAPER SIZE
			APPROVED		
			REVISED		



**A** | **PROPOSED GROUND FLOOR PLAN**  
**04**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W/ ACCOMMODATION AT THE LOFT AND BASEMENT

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

**PROPOSED GROUND FLOOR PLAN**

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**A-04**

A3 PAPER SIZE





**A** | **PROPOSED FIRST FLOOR PLAN**  
**05**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
 W/ ACCOMMODATION AT THE LOFT AND BASEMENT

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

**PROPOSED FIRST FLOOR PLAN**

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.

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CHD

SHEET NO.

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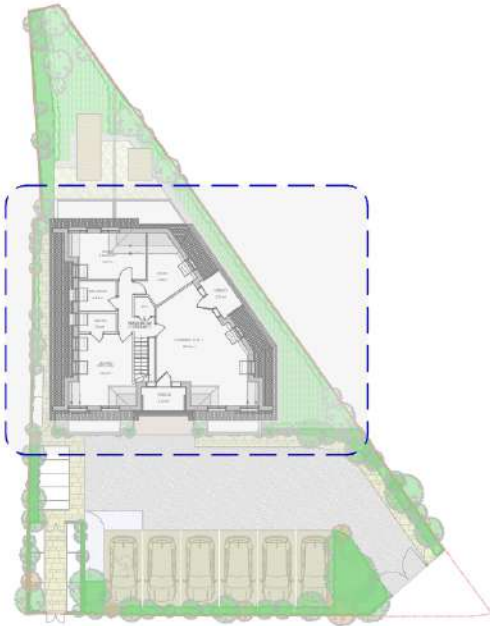
MCV

APPROVED

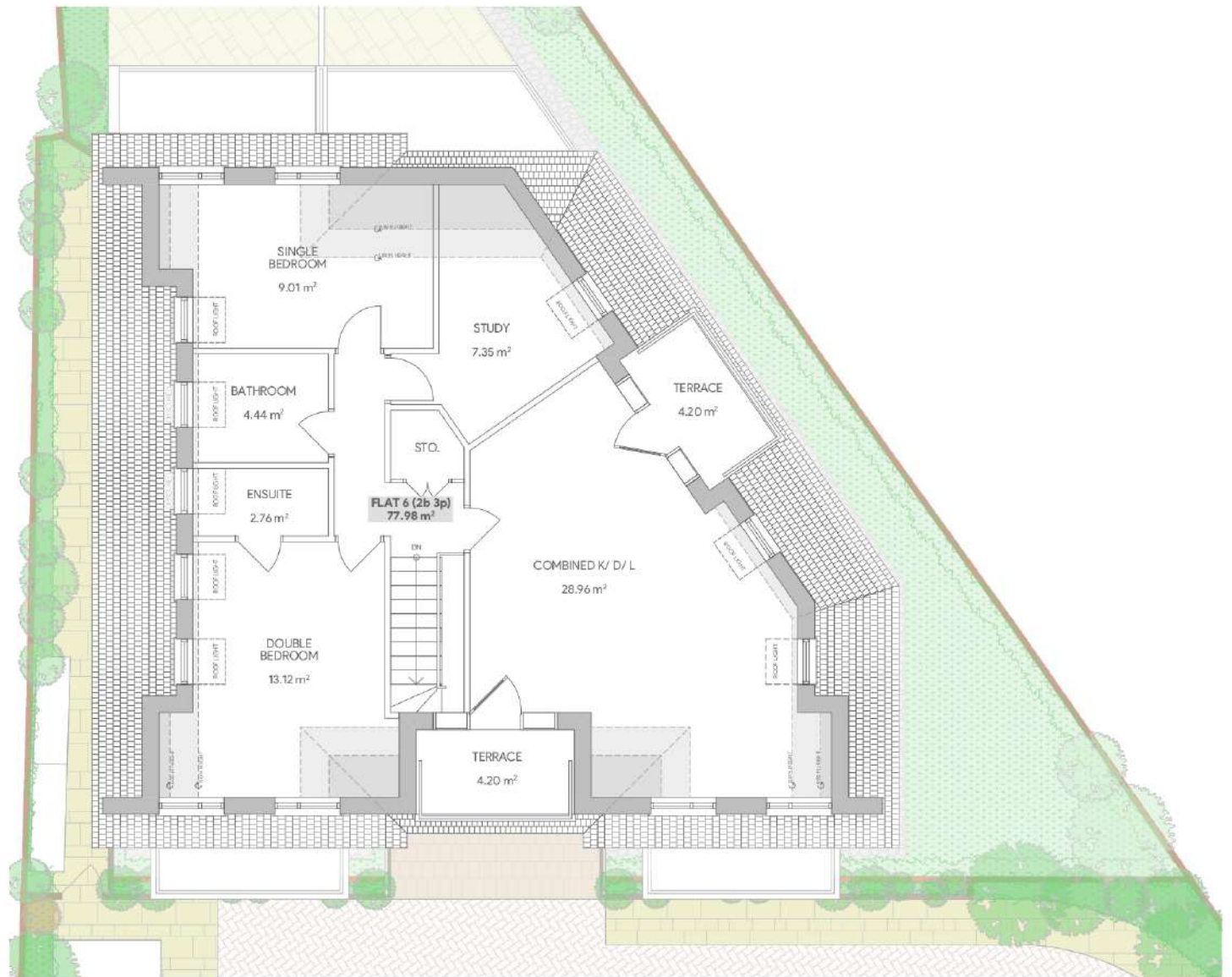
REVISED

**A-05**

A3 PAPER SIZE



**KEYPLAN**



**A | PROPOSED SECOND FLOOR PLAN**  
**06**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W/ ACCOMMODATION AT THE LOFT AND BASEMENT

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

**PROPOSED SECOND FLOOR PLAN**

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.

THIS DRAWING IS THE PROPERTY OF OWNER AND CANNOT BE REPRODUCED WITHOUT WRITTEN CONSENT.

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**A-06**

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A3 PAPER SIZE





**A | FRONT ELEVATION**  
**08**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W/ ACCOMMODATION AT THE LOFT AND BASEMENT

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

**FRONT ELEVATION**

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

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SUBJECT

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SHEET NO.

DRAWN

MCV

**A-08**

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A3 PAPER SIZE



**A** | **LEFT SIDE ELEVATION**  
**09** |

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
**W/ ACCOMMODATION AT THE LOFT AND BASEMENT**

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS	ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.	REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
		LEFT SIDE ELEVATION	ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.				DRAWN
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					REVISED		A3 PAPER SIZE





**A | RIGHT SIDE ELEVATION**  
**10**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
**W/ ACCOMMODATION AT THE LOFT AND BASEMENT**

260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS

**RIGHT SIDE ELEVATION**

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.

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SUBJECT

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CHD

SHEET NO.

DRAWN

MCV

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REVISED

**A-10**

A3 PAPER SIZE



**A | REAR ELEVATION**  
**11 |**

PURPOSE OF ISSUANCE : DRAWING REFERENCE

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
**W/ ACCOMMODATION AT THE LOFT AND BASEMENT**  
 260 COOMBE LANE, WEST WIMBLEDON, LONDON, SW20 0RW, UK

SHEET CONTENTS	ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION.	REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
		<b>REAR ELEVATION</b>	ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.				DRAWN
	THIS DRAWING IS THE PROPERTY OF OWNER AND CANNOT BE REPRODUCED WITHOUT WRITTEN CONSENT.				APPROVED		
					REVISED		





**A | SECTIONAL VIEW**  
**12**

PURPOSE OF ISSUANCE : FULL PLANNING APPLICATION

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
**W/ ACCOMMODATION IN THE ROOF AND BASEMENT**

260 COOMBE LANE, LONDON, SW20 DRW, UK

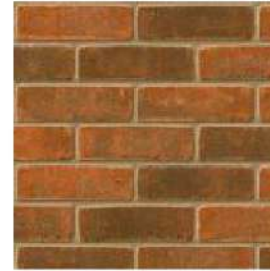
SHEET CONTENTS	ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION	REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
<b>SECTIONAL VIEW</b>	ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.				DRAWN	MCV	<b>A-12</b>
	THIS DRAWING IS THE PROPERTY OF OWNER AND CANNOT BE REPRODUCED WITHOUT WRITTEN CONSENT				APPROVED		
					REVISED		

A3 PAPER SIZE



**A** | MATERIAL ELEVATION  
**20**

**1 RED STOCK FACING BRICK**



**6 GLASS RAILINGS**



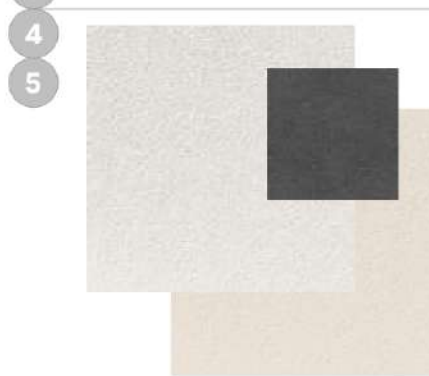
**2 BROWN ROOF TILES**



**7 EXTERIOR STEEL RAILING**



**3 RENDERED FINISH**



**8 ALUMINUM - FRAMED GLASS DOORS & WINDOWS**



PURPOSE OF ISSUANCE : FULL PLANNING APPLICATION

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W / ACCOMMODATION IN THE ROOF AND BASEMENT

260 COOMBE LANE, LONDON, SW20 DRW, UK

SHEET CONTENTS

**MATERIAL ELEVATION**

ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION

ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS.

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REVISION

DATE

SUBJECT

DESIGNED

CHD

SHEET NO.

DRAWN

MCV

**A-13**

APPROVED

REVISED

A3 PAPER SIZE





**A** | **LANDSCAPE PLAN**  
**14**

PURPOSE OF ISSUANCE : FULL PLANNING APPLICATION

DEMOLITION OF EXISTING SINGLE DETACHED BUNGALOW AND ERECTION OF A  
**2 STOREY, DETACHED HOUSE**  
W/ ACCOMMODATION IN THE ROOF AND BASEMENT  
260 COOMBE LANE, LONDON, SW20 DRW, UK

SHEET CONTENTS	REVISION	DATE	SUBJECT	DESIGNED	CHD	SHEET NO.
<b>LANDSCAPE PLAN</b>				DRAWN	MCV	<b>A-14</b>
				APPROVED		
				REVISED		
<small>ALL MEASUREMENTS ARE TO BE VERIFIED ON SITE PRIOR TO CONSTRUCTION. ALL DISCREPANCIES ARE TO BE IMMEDIATELY REPORTED TO THE ARCHITECTS / PROJECT MANAGERS. THIS DRAWING IS THE PROPERTY OF OWNER AND CANNOT BE REPRODUCED WITHOUT WRITTEN CONSENT.</small>						A3 PAPER SIZE

**Appendix B Thames Water Asset Location Search**

# Asset location search



## Property Searches

Soils Limited  
Newton House  
Cross Road  
TADWORTH  
KT20 5SR

**Search address supplied** 260  
Coombe Lane  
London  
SW20 0RW

**Your reference** 21173\_SB

**Our reference** ALS/ALS/24/2023\_4925715

**Search date** 18 December 2023

### Notification of Price Changes

From 1<sup>st</sup> April 2023 Thames water Property Searches will be increasing the prices of its CON29DW, CommercialDW Drainage & Water Enquiries and Asset Location Searches. Historically costs would rise in line with RPI but as this currently sits at 14.2%, we are capping it at 10%.

Customers will be emailed with the new prices by January 1<sup>st</sup> 2023.

Any orders received with a higher payment prior to the 1<sup>st</sup> April 2023 will be non-refundable. For further details on the price increase please visit our website at [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



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



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



0800 009 4540



**Search address supplied:** 260, Coombe Lane, London, SW20 0RW

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, 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 address below:

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

Email: [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)

Web: [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)

## 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.

This report 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.**

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

# Asset location search



## Property Searches

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.

### **Payment for this Search**

A charge will be added to your suppliers account.



## 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. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational 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](mailto:developer.services@thameswater.co.uk)

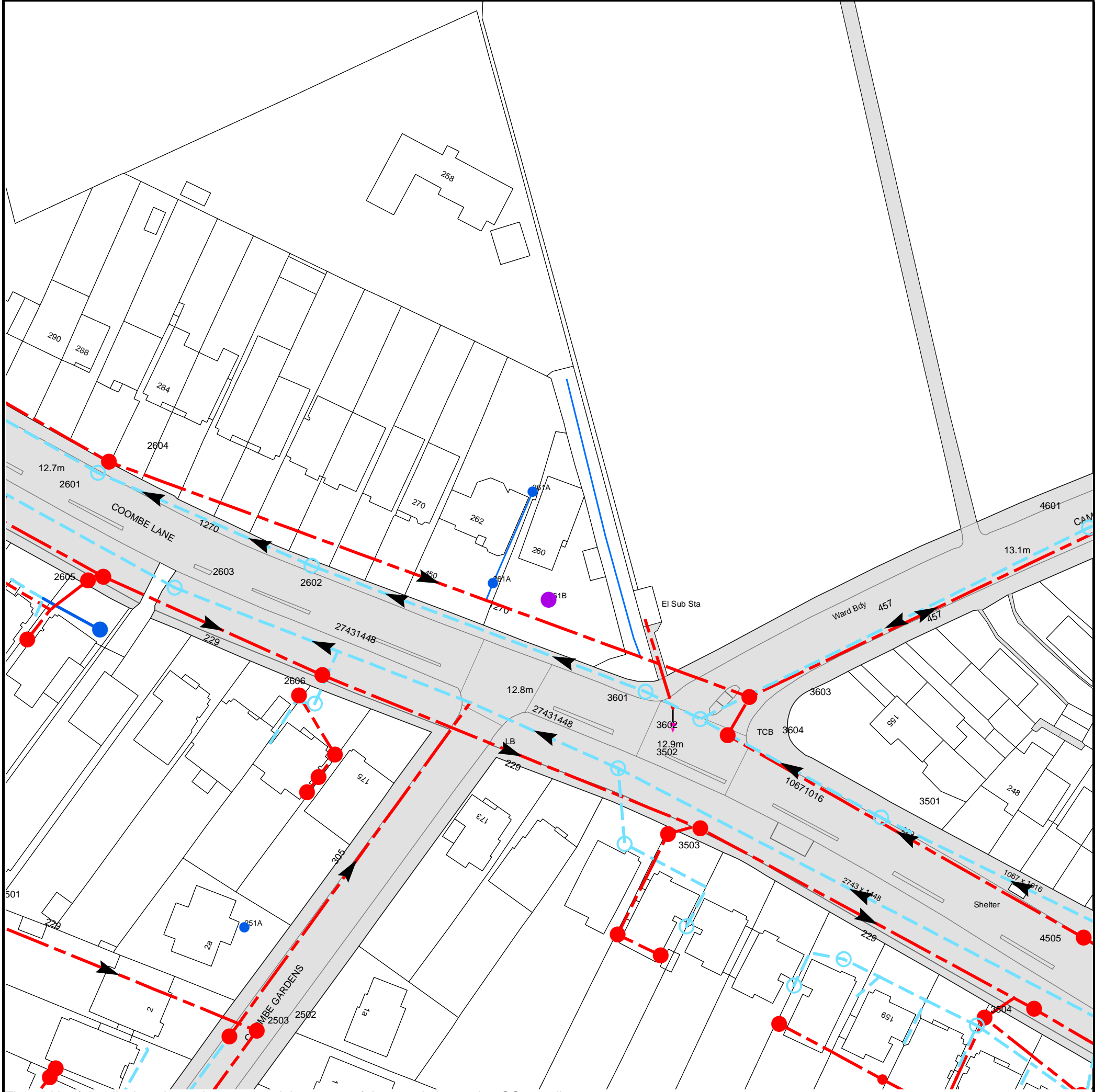
### Clean Water queries

Should you require any advice concerning clean water operational issues or 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](mailto:developer.services@thameswater.co.uk)

Asset Location Search Sewer Map - ALS/ALS/24/2023\_4925715



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 522309,169639  
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3502	n/a	n/a
26AI	n/a	n/a
3604	12.8	9.8
3602	12.83	11.04
26BC	n/a	n/a
3603	12.91	8.46
26AJ	n/a	n/a
3601	12.85	11.04
2606	n/a	n/a
26CC	n/a	n/a
26BE	n/a	n/a
361B	n/a	n/a
2603	n/a	n/a
261A	n/a	n/a
26CA	n/a	n/a
2605	n/a	n/a
2602	12.82	10.98
4601	13.28	11.37
361A	n/a	n/a
2601	12.73	10.95
2604	12.77	8.7
25BJ	n/a	n/a
25BH	n/a	n/a
2503	n/a	n/a
2502	n/a	n/a
35CA	n/a	n/a
35CB	n/a	n/a
35BF	n/a	n/a
35BC	n/a	n/a
251A	n/a	n/a
35BG	n/a	n/a
35BI	n/a	n/a
35BD	n/a	n/a
3503	n/a	n/a
25AE	n/a	n/a
25AF	n/a	n/a
35BA	n/a	n/a
35CI	n/a	n/a
35AI	n/a	n/a
3504	n/a	n/a
35CD	n/a	n/a
4505	12.77	10.17
3501	12.79	11.04

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

### Notes:

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

## Sewer Fittings

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

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

## 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.

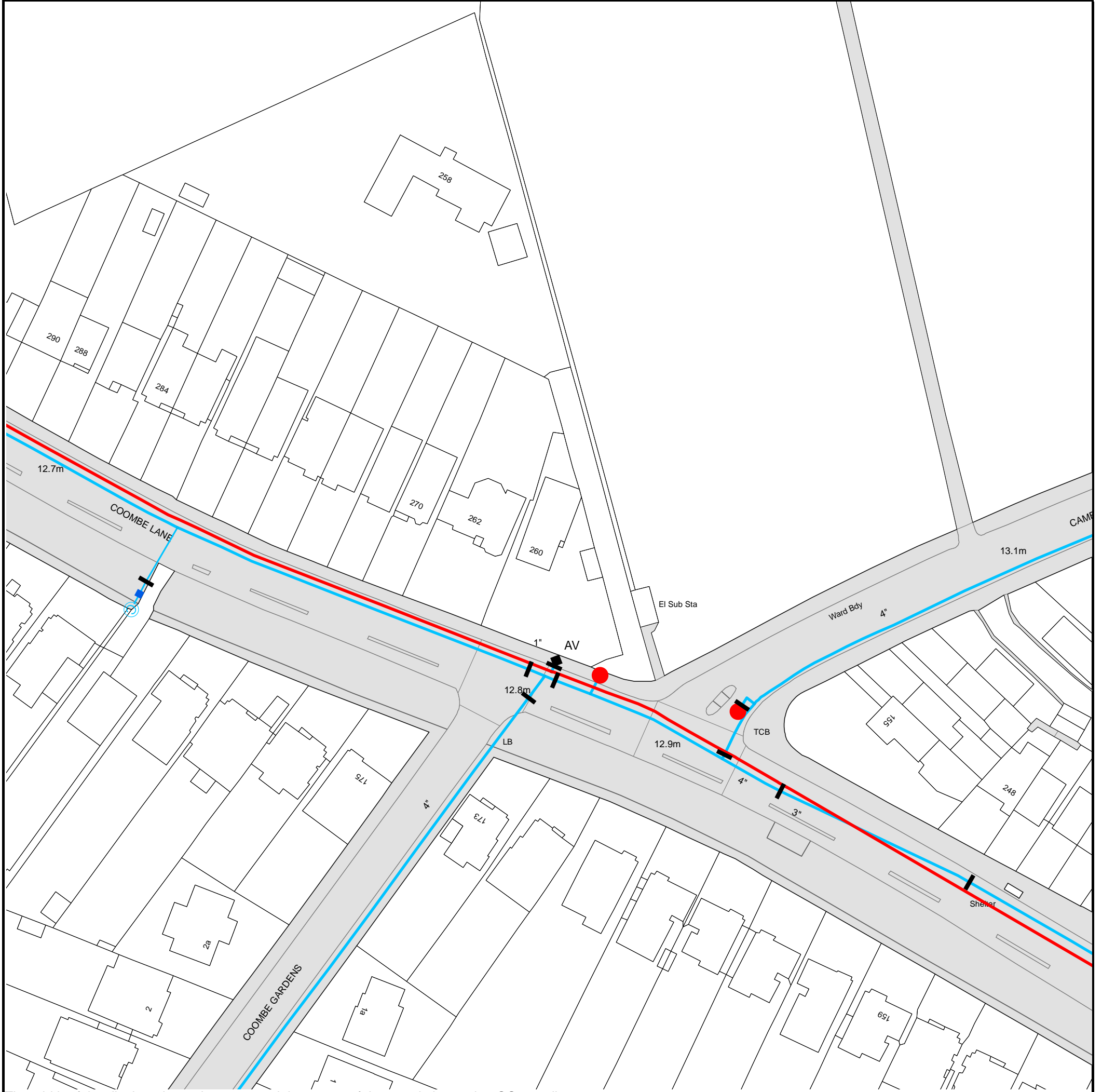
- Agreement
- Chamber
- Operational Site

## Ducts or Crossings

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

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

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



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 522309, 169639.

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.








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# Asset Location Search - Water Key

## Water Pipes (Operated & Maintained by Thames Water)


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

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

## Valves

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

## Hydrants

-  Single Hydrant

## Meters

-  Meter

## End Items



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

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



## Operational Sites

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

## Other Symbols

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

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

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

## Payment Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting [www.tpos.co.uk](http://www.tpos.co.uk) or by sending an email to [admin@tpos.co.uk](mailto:admin@tpos.co.uk).

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

### Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking
Please Call <b>0800 009 4540</b> quoting your invoice number starting CBA or ADS	Account number <b>90478703</b> Sort code <b>60-00-01</b> A remittance advice must be sent to: <b>Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.</b> or email <a href="mailto:ps.billing@thameswater.co.uk">ps.billing@thameswater.co.uk</a>	By calling your bank and quoting: Account number <b>90478703</b> Sort code <b>60-00-01</b> and your invoice number

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.



**Appendix C**

**Run off Calculations**

Calculated by:

Site name:

Site location:

## Site Details

Latitude:

Longitude:

Reference:

Date:

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

Runoff estimation approach

## Site characteristics

Total site area (ha):

## Methodology

$Q_{BAR}$  estimation method:

SPR estimation method:

## Notes

(1) Is  $Q_{BAR} < 2.0$  l/s/ha?

When  $Q_{BAR}$  is  $< 2.0$  l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

## Soil characteristics

	Default	Edited
SOIL type:	2	2
HOST class:	N/A	N/A
SPR/SPRHOST:	0.3	0.3

(2) Are flow rates  $< 5.0$  l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

## Hydrological characteristics

	Default	Edited
SAAR (mm):	606	606
Hydrological region:	6	6
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

(3) Is  $SPR/SPRHOST \leq 0.3$ ?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

## Greenfield runoff rates

Default Edited

Q <sub>BAR</sub> (l/s):	0.15	0.15
1 in 1 year (l/s):	0.13	0.13
1 in 30 years (l/s):	0.35	0.35
1 in 100 year (l/s):	0.49	0.49
1 in 200 years (l/s):	0.58	0.58

This report was produced using the greenfield runoff tool developed by HR Wallingford and available at [www.uksuds.com](http://www.uksuds.com). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [www.uksuds.com/terms-and-conditions.htm](http://www.uksuds.com/terms-and-conditions.htm). The outputs from this tool are estimates of greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, CEH, Hydrosolutions or any other organisation for the use of this data in the design or operational characteristics of any drainage scheme.

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