



231 Watford Road

Foul Sewage Assessment

September 2021

Waterman Infrastructure & Environment Limited

Pickfords Wharf, Clink Street, London, SE1 9DG www.watermangroup.com



Client Name: Fruition Properties

Document Reference: WIE18371-100-FW-3-1-1

Project Number: WIE18371

Quality Assurance – Approval Status

This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS OHSAS 18001:2007)

IssueDatePrepared byChecked byApproved byFirst17.09.21Harry ChettyDesmond TanDesmond Tan

Comments Planning Issue

Comments



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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.



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Executive Summary

Waterman has been commissioned by Fruition Properties to undertake a Foul Sewage Assessment in relation to the proposed development located at 231 Watford Road, Harrow HA1 3TU.

Foul flows from the Site would discharge by gravity into Thames Water foul water sewer network. The existing foul discharge rates have been calculated using the water consumption method to be 0.4 l/s and proposed rates would be 0.9 l/s.



1. Introduction

- 1.1. Waterman are instructed by Fruition Properties Limited ('the Applicant') to prepare a Foul Sewage Assessment in support of a planning application for residential development at 231 Watford Road, Harrow, HA1 3TU ('the Site').
- 1.2. The planning application is made for:
- 1.3. 'Demolition of the existing building and the erection of a part three, part four and part five storey building to provide residential dwellings (Use Class C3); car and cycle parking; landscaping, amenity space and play area; and refuse storage and other associated works.'
- 1.4. The proposals follow extensive pre-application engagement with the London Borough of Brent ('LBB') planning officers throughout 2020 and 2021; presentation of the proposals at a LBB Design Review workshop in June 2021; and public consultation in June-July 2021.
- 1.5. The proposals will optimise the Site for new residential development on underutilised land within a predominately residential area, responding well to the character of the local area.
- 1.6. This report assesses the management of surface water runoff and provides details of an overall drainage strategy and SUDs to be provided.

Site Description

- 1.7. The Site is located at 231 Watford Road, Harrow, HA1 3TU and extends to 0.24 hectares.
- 1.8. The Site is occupied by the Mumbai Junction restaurant, a part one and part two storey building. The existing building is set back from Watford Road by a large area of car parking, which wraps around the building from the east to the south.
- 1.9. The Site is located to the west of the John Lyon roundabout. Vehicular and pedestrian access is made from the east of the Site, from the service road which runs alongside Sudbury Court Drive and Watford Road.
- 1.10. The Site is bound to the north by Formula One Autocentres; to the east by Watford Road and the John Lyon roundabout; to the south by residential properties along Sudbury Court Drive; and to the west by residential properties along Amery Road.
- 1.11. The surrounding area is predominately residential in nature, although there is an autocentre directly to the north and commercial uses along Watford Road to the south of the John Lyon roundabout. Other nearby uses include Harrow School, Northwick Park, Northwick Park Golf Course and Northwick Park Hospital to the north and Sudbury Court Park/Pasture Park Pass and Sudbury Hill Park to the south. Harrow Town Centre is located approximately 2.5km north of the Site.
- 1.12. The Site is not located within a Conservation Area and there are no listed buildings within the immediate vicinity. The Sudbury Court Conservation Area is located to the east of the Site on the opposite side of the John Lyon roundabout. The nearest listed building is the Grade II listed 96 and 98 Sudbury Court Road located approximately 0.4km south of the Site.



Figure 1: Site Location Plan



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Site Boundary

Source: Google Maps

1.13. The topographic survey (Appendix A) indicates that ground levels within the existing site between 53.3 to 52.5m AOD across the site. The site is lower at the north eastern boundary with Watford Road. The existing building levels are set at a level of 53.260m.

Development Proposals

1.14. The development proposals (Appendix B) are as follows: -

Demolition of the existing building and the erection of a part three, part four and part five storey building to provide residential dwellings (Use Class C3); car and cycle parking; landscaping, amenity space and play area; and refuse storage and other associated works.

Scope of Report

1.15. This report assesses the management of foul water from the development.



2. Planning Policy and Guidance

Water Industry Act

- 2.1. Thames Water is the local Sewerage Undertaker and provides sewerage services under the regulation of the Water Industry Act 1991.
- 2.2. Under Section 106 of the Water Industry Act, the developer currently maintains the automatic right to 'communicate' with the public foul water sewer system.



3. Foul Drainage

- 3.1. The proposed foul drainage would be designed in accordance with BS EN 752 Drain and Sewer Systems Outside Buildings, BS EN 12056 Gravity Discharge Systems Inside Buildings¹, and Approved Document H of Building Regulations².
- 3.2. The existing foul discharge rates have been calculated using the water consumption method at 0.4 l/s (Appendix D) and the proposed foul discharge rates based on the total number of 43 residential units for the proposed site and 143 persons have been calculated at 0.9 l/s.
- 3.3. A Pre-Planning Application has been submitted to Thames Water to confirm that the proposed foul water discharge is acceptable in comparison of the existing discharge. (Appendix D). Thames Water have confirmed that the discharge of foul water is acceptable.
- 3.4. The proposed development will connect to the foul water sewer in the road through a new connection through a S106 direct connection agreement with Thames Water, under the Water Industry Act 1991. Subject to CCTV survey, the existing foul water connection could be re-used and a S106 indirect connection could be made.

¹ British Standards Institution, September 2000. BS EN 12056-2:2000 – Gravity Drainage Systems Inside Buildings.

² HM Government, October 2015. Building Regulations 2010, Drainage and Waste disposal, Approved Document H.



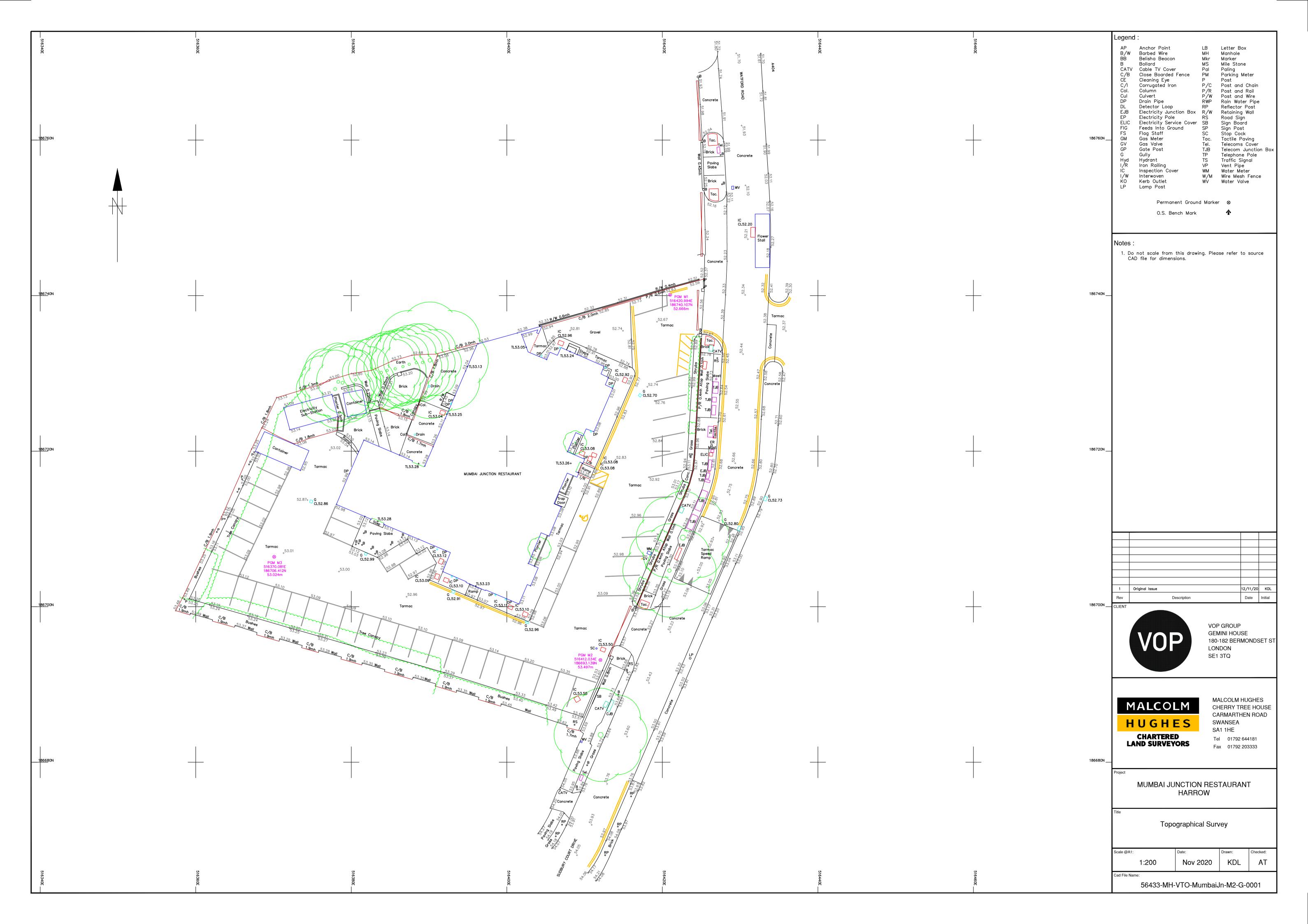
4. Conclusions

4.1. Foul flows from the Site would discharge by gravity into the Thames Water foul water sewer network in Watford Road. The existing foul discharge rates have been calculated using the water consumption method at 0.4 l/s (Appendix D). and the proposed foul discharge rates have been calculated at 0.9 l/s.



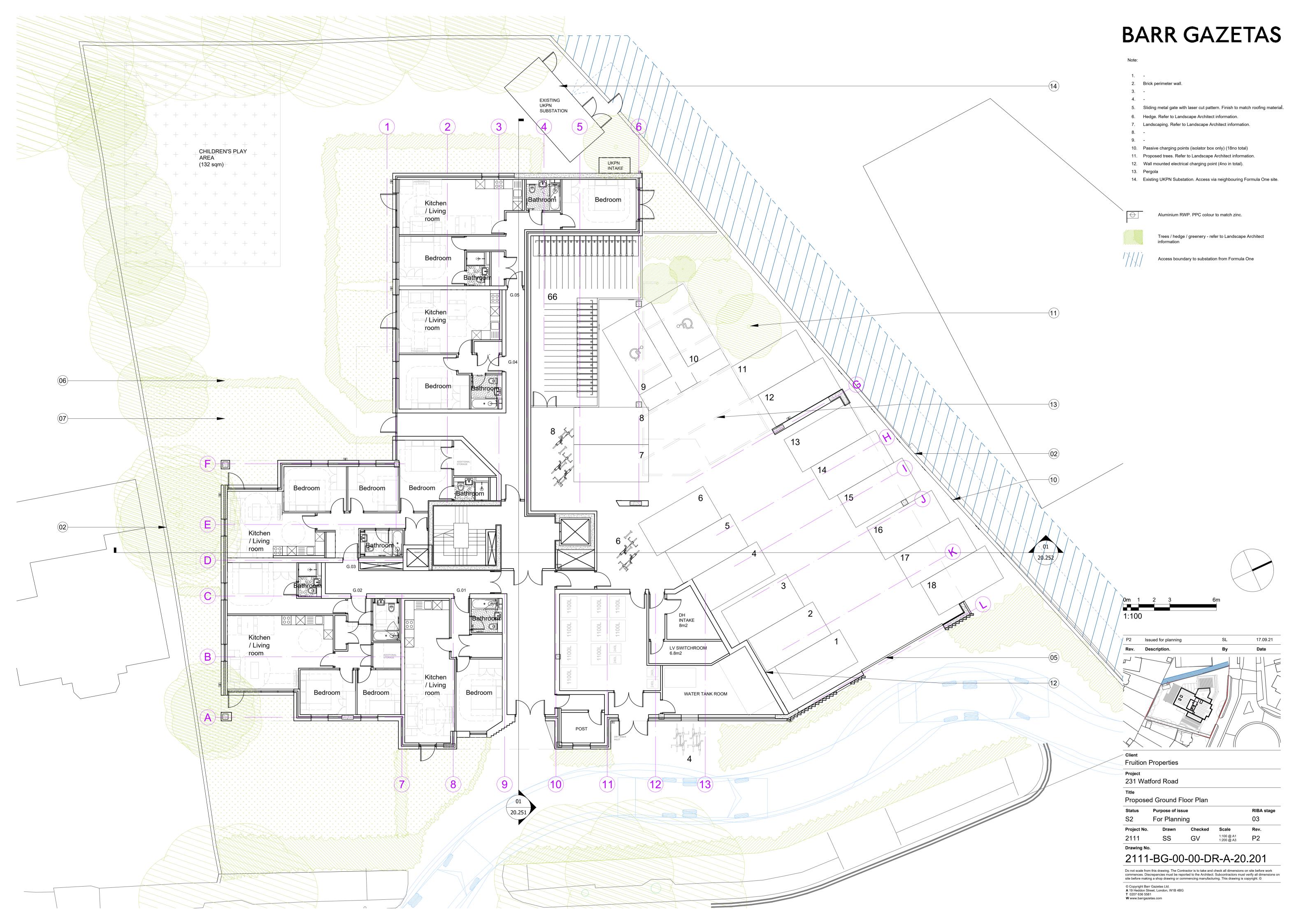
APPENDICES

A. Topographic Survey



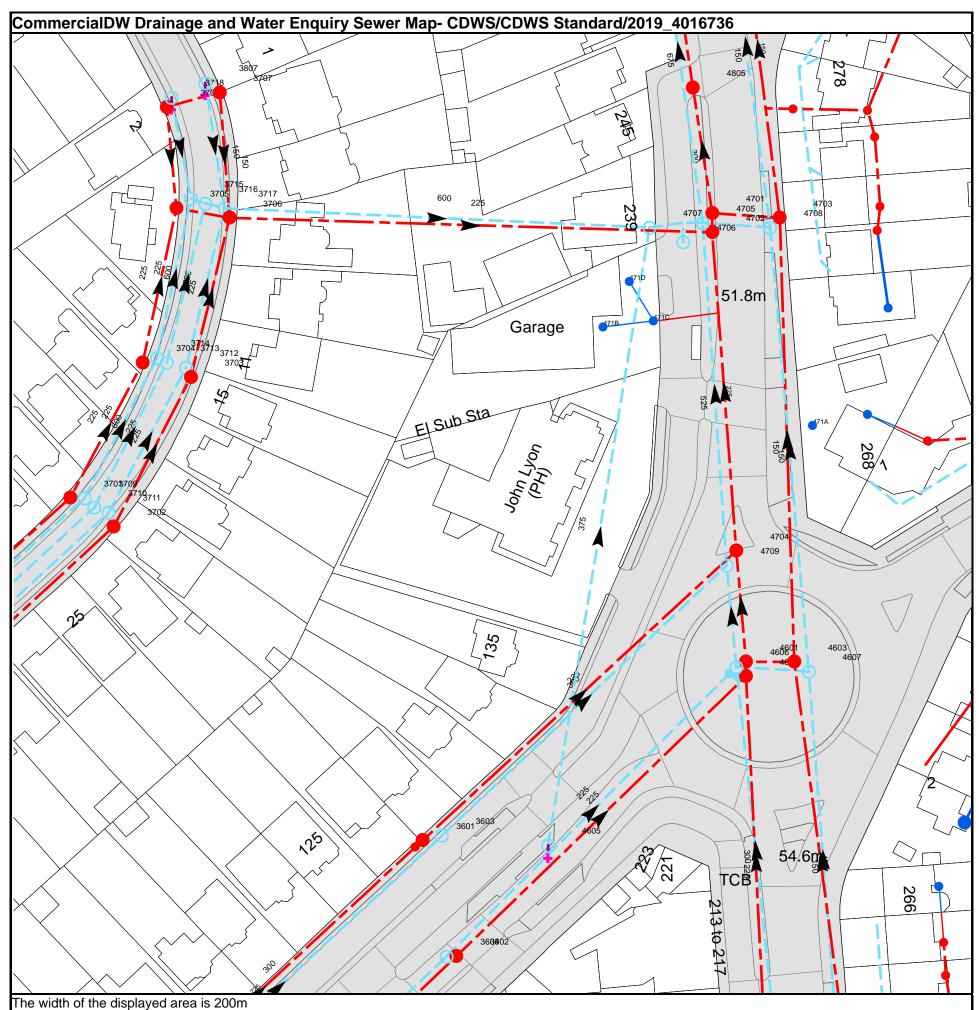


B. Development Proposals





C. Thames Water Sewer Records



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 with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4606	54.32	49.54
4704	53.12	49.94
4601	54.27	50.18
4602	54.29	51.17
4708	51.68	49.83
4703	51.64	49.63
47DA	n/a	n/a
4603	54.4	51.89
4607	54.4	51.68
471A	n/a	n/a
47BE	n/a	n/a
47CJ	n/a	n/a
47CI	n/a	n/a
47CG	n/a	n/a
47CH	n/a	n/a
47CF	n/a	n/a
47BF	n/a	n/a
46BE	n/a	n/a
46CF	n/a	n/a
46BG	n/a	n/a
46BF	n/a	n/a
3718	51.95	50.6
3707	51.97	50.27
	50.95	
4805		48.9
3807	51.97	50.62
3709	52.9	50.79
3710	52.8	50.34
3711	52.92	50.76
3702	52.91	50.42
3704	52.19	49.98
3714	52.17	50.39
3713	52	50.07
3708	51.95	50.25
3705	51.89	49.63
3712	52.1	50.32
3715	51.87	50.09
3703	52.1	49.74
3716	51.7	49.9
3717	51.83	49.85
3706	51.83	49.54
3601	54.51	51.08
3603	54.5	50.74
4605	54.24	51.24
471B	n/a	n/a
471D	n/a	n/a
4707	51.96	49.1
471C	n/a_	n/a
4706	51.7	49.51
4705	n/a	n/a
4702	51.77	49.15
4701	51.69	49.07
4709	53.16	49.3
3701	52.88	50.47
3604	54.28	52.25
3602	54.26	51.95
	V714V	01.00

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.



D. Foul Water Calculations & Pre-development Enquiry Response



Project Title: 231 Watford Road

Calculations Title: Existing Foul Flow Estimate

Sheet No: 1 of 2 Project No: WIE18371

By: K. Stokes Date: 7.5.21

Checked: H. Chetty Date:

		Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential					2.12	24	
Existing property =	160 litres/person/day	368.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.0
New property =	125 litres/person/day	287.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.0
Occupancy =	2.3 persons						
Hotel		500.0 litres per room	British Water (2013)	0 rooms	3	24	0.0
Student Accommodation		200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.0
Offices		750.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Retail		400.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Cinema		10.0 litres per seat	Jones (1992)	0 seats*	3	24	0.0
Health Club/Sports Centre		50.0 litres per customer	British Water (2013)	0 customers**	3	24	0.0
Day School		90.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.0
Boarding School		175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.0
Hospital		625.0 litres per bed	Jones (1992)	0 beds	3	24	0.0
Nursing Home		350.0 litres per bed	British Water (2013)	0 beds	3	24	0.0
Restaurant		30.0 litres per cover	British Water (2013)	340 covers	3	24	0.4
Pub/Club		15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	24	0.0
Warehouse		150.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Manufacturing		550.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Commercial		300.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
SUB TOTAL							0.4
Infiltration percentage	10	%					0.0
TOTAL							0.4

* Foul flow rate needs to be calculated based on number of seat	s. An allowance of 4m ² has been made for each seat.
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Floor area = 0 m²

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

4 m² per person

Floor area = 0 m^2 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m^2 4 m² per person



Project Title: 231 Watford Road

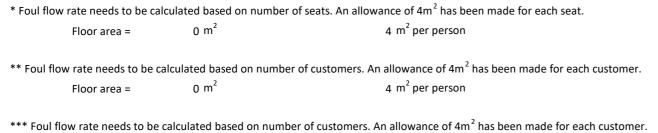
Calculations Title: Proposed Foul Flow Estimate

Sheet No: 2 of 2 Project No: WIE18371

By: K. Stokes Date: 7.5.21

Checked: H. Chetty Date:

		Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential					6	24	
Existing property =	160 litres/person/day	368.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.0
New property =	125 litres/person/day	287.5 litres per unit	Thames Water Guidelines (2016)	42 proposed units			0.8
Occupancy =	2.3 persons						
Hotel		500.0 litres per room	British Water (2013)	0 rooms	3	24	0.0
Student Accommodation		200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.0
Offices		750.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Retail		400.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Cinema		10.0 litres per seat	Jones (1992)	0 seats*	3	24	0.0
Health Club/Sports Centre		50.0 litres per customer	British Water (2013)	0 customers**	3	24	0.0
Day School		90.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.0
Boarding School		175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.0
Hospital		625.0 litres per bed	Jones (1992)	0 beds	3	24	0.0
Nursing Home		350.0 litres per bed	British Water (2013)	0 beds	3	24	0.0
Restaurant		30.0 litres per cover	British Water (2013)	0 covers	3	24	0.0
Pub/Club		15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	24	0.0
Warehouse		150.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Manufacturing		550.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
Commercial		300.0 litres per 100m ²	Jones (1992)	0 m ²	3	24	0.0
SUB TOTAL							0.8
Infiltration percentage	10%						0.08
TOTAL							0.9



Floor area = 0 m^2 4 m² per person



Please complete this form and return it to us at developer.services@thameswater.co.uk or Thames Water, Developer Services, Clearwater Court, Vastern Road, Reading, RG1 8DB.



Application for a pre-planning enquiry

Please complete ALL relevant sections of this form in BLOCK CAPITALS

Use this form to find out if there's existing capacity in our network for your proposed development. Please ensure you complete the form in full and we'll respond within 21 calendar days from receipt of your completed application form. We'll let you know if sufficient capacity already exists in the network or if further modelling will be needed to determine if network adjustments or reinforcement will be required.

Is your application for:	Water and sewerage	Water	Sewerage	(Please tick one.)
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Section A - About you

(i) Details of applicant

Com	pany	name
-----	------	------

	Develope	er	Consultant	Land p	romoter	SLP	NAV	Other
Title	Mr	Mrs	Ms	Miss	Dr	Other		
First name(s)								
Last name								
Preferred phone no.								
Alternative phone no.								
Email address								
Full postal address	Address I	ine 1						
	Address I	ine 2						
	Town							

(ii) Who should we contact to discuss the application?

County

	• • • • • • • • • • • • • • • • • • • •					
Applicant	Nominated con	tact	(Please tick o	ne.)		
If nominated co	ntact:					
Developer	Consultant	Land pro	moter	SLP	NAV	Other

Postcode

Title Mr Mrs Ms Miss Dr Other

First name(s)

Company name

Last name

Preferred phone no.

Alternative phone no.

Email address

Full postal address Address line 1

Address line 2

Town

County Postcode

Section B - About the site

(i) Your site address

Same as applicant Same as nominated contact At another location (Please tick one.)

If another location:

Site name

Full postal address Address line 1

Address line 2

Town

County Postcode

Does the developer own

the site?

Yes

No

Don't know

What is the local authority?

Ordnance Survey grid ref

Type of site Greenfield Brownfield Mixed

How big is the site? hectares

(ii) Your planning status (If you've already started the planning process).

Is the development identified in the local plan?	Yes	No	Don't know	If Yes, reference number
Does it have outline planning permission?	Yes	No	Don't know	If Yes, reference number
Does it have full planning permission?	Yes	No	Don't know	If Yes, reference number
Does the development have building regulations permission?	Yes	No	Don't know	

(iii) Your development

To enable us to determine whether the capacity is sufficient or whether further modelling and reinforcement of our network will be required please provide details of the properties currently existing on the site (where applicable) and how you will phase your development. The information you provide at this stage will help improve the accuracy of our assessment. If you have more than 6 phases for your development please add details on a separate sheet.

		Proposed site						
Property type	Existing site to be demolished	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Total
Start on site date								
Date of Occupation								
General housing (total units)								
Flat (total units)								
Primary school (max. pupil capacity)								
Secondary school (max. pupil capacity)								
Boarding school (max. pupil capacity)								
Assembly hall (max. capacity)								
Cinema (max. capacity)								
Theatre (max. capacity)								
Sports hall (max. capacity)								
Hotel (total bedrooms)								
Guest house (total bedrooms)								
Motel (total bedrooms)								
Holiday apartment (total capacity)								
Leisure park (max. capacity)								
Caravan park standard (total spaces)								
Caravan site standard (total spaces)								
Camping site standard (total spaces)								
Camping site serviced (total spaces)								
Student accommodation (max. capacity)								
Public house (max. capacity)								
Restaurant / Day care centre (max. capacity)								
Drive in restaurant (max. capacity)								
Hospital (total beds)								
Nursing / Care home (total beds)								
Offices (gross internal area in m²)								
Shopping centre (gross internal area in m²)								
Warehouse (gross internal area in m²)								
Commercial premises (gross internal area in m²)								
Manufacturing unit (gross internal area in m²)								
Other (please state units and description)								

Section C - About the water supply

(Not required if only applying for sewerage connection).

(i) Phasing water supply for your development

If you already have a plan for the phasing of your development please give details below.

Property type	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6
Date water connection required						
Estimated peak clean water flow rate (litre/sec)						
Break tank capacity, if any (m³)						

If you're using a break tank please advise what measures you plan to take to avoid high peak flow over a short period of time.

Section D - About your sewerage connections

(Not required if only applying for water connection).

(i) Your existing sewerage connections (brownfield site only).

Please give us details of your existing connections.

	Foul water	Surface water
Does the site have the following sewerage connections?		
What is the type of discharge method?	Gravity	Gravity
	Pumped	Pumped
If sewage is pumped, what is the pump rate?	litres/sec	litres/sec
What is the existing impermeable area per connection?		m²
What are the existing connection points? (For example, 'X' properties to TW manhole ref 'Y')		

(ii) Your proposed sewerage connections

Please give us details of your proposed connections.

	Foul water	Surface water
Does the site have the following sewerage connections?		
What is the type of discharge method?	Gravity	Gravity
	Pumped	Pumped
If sewage is pumped, what is the pump rate?	litres/sec	litres/sec
What is your proposed approach to surface water drainage?		Sustainable drainage system (SuDS)
		Traditional piped system
Do you propose using separate highway surface water drainage systems?		Yes No
If the surface water rate is attenuated, to what rate is it attenuated?		litres/sec
What is the proposed impermeable area per connection?		m²
What are the proposed connection points? (For example, 'X' properties to TW manhole ref 'Y')		

Please note: The developer is expected to follow the local authority's drainage strategy and be able to demonstrate how the proposed (attenuated) discharge rate of any surface water flows have been calculated. For developments in Greater London, please refer to the London Plan Drainage Hierarchy (Policy 5.13). We will challenge the rates provided if they are not in line with those based on the local drainage strategies.

Section E - What next?

(i) What we need to process your application:

Completed application (ensure all relevant sections of this form are completed in full)

Site location plan (showing the site with nearby buildings, road and any sewers)

Scaled site layout (showing existing and proposed layouts including Point of Connection to our water network)

Site drainage strategy plan (if available at this stage showing all proposed sewers, pipe sizes and gradients)

CCTV and topographical surveys (if available for existing brownfield sites)

Please make sure any attachments are in PDF format and don't exceed a total of 20MB in size per email. All drawings must be of suitable detail and have a drawing reference number on them.

Please note: without this information we may need to make assumptions about your requirements when calculating your budget estimate (if requested).

(ii) How we'll use this information

We'll use the information you give on this application form, and potentially share it with our delivery partners, to provide the service you've requested.

This could include contacting you to discuss your application and/or provide more details, visiting the site where work needs to be carried out and invoicing you when appropriate. Your feedback is important to us, so we may also use the information to ask for your feedback on how we can improve our performance.

We won't use this information for marketing purposes without contacting you to seek your consent.

You can find Thames Water's privacy policy at thameswater.co.uk/Legal/Privacy.

(iii) Declaration

Print name

Job title	
Company	
Date	

(iv) Submitting your application

Please send your completed form to receive your capacity check in 21 calendar days:

Via email:

Signature

developer.services@thames water.co.uk

Or send to:

Thames Water Developer Services, Clearwater Court, Vastern Road, Reading RG1 8DB



Harry Chetty

Waterman Infrastructure & Environment Ltd Pickford Wharf Clink Street London SE1 9DG



21 July 2021

Pre-planning enquiry: Confirmation of sufficient capacity

Site: 231 Watford Road, Harrow HA1 3TU

Dear Harry,

Thank you for providing information on your development.

Proposed site: General housing (29 units), Flats (14 units)

Proposed foul water discharge by gravity into 225mm foul water sewer downstream of manhole TQ16863601.

Proposed surface water discharge at 3.2 l/s for all storm events up to and including 1:100yr+40%CC into 375mm surface water sewer crossing the site.

We have completed the assessment of the foul water flows and surface water run-off based on the information submitted in your application with the purpose of assessing sewerage capacity within the existing Thames Water sewer network.

Foul Water

If your proposals progress in line with the details you've provided, we're pleased to confirm that there will be sufficient sewerage capacity in the adjacent foul water sewer network to serve your development.

This confirmation is valid for 12 months or for the life of any planning approval that this information is used to support, to a maximum of three years.

You'll need to keep us informed of any changes to your design – for example, an increase in the number or density of homes. Such changes could mean there is no longer sufficient capacity.

Surface Water

In accordance with the Building Act 2000 Clause H3.3, positive connection of surface water to a public sewer will only be consented when it can be demonstrated that the hierarchy of disposal methods have been examined and proven to be impracticable. Before we can consider your surface water needs, you'll need written approval from the lead local flood authority that you have followed the sequential approach to the disposal of surface water and considered all practical means.



When developing a site, policy SI 13 of the London Plan states "Development proposals should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible. There should also be a preference for green over grey features, in line with the following drainage hierarchy:"

The disposal hierarchy being:

- 1. rainwater use as a resource (for example rainwater harvesting, blue roofs for irrigation)
- 2. rainwater infiltration to ground at or close to source
- 3. rainwater attenuation in green infrastructure features for gradual release (for example green roofs, rain gardens)
- 4. rainwater discharge direct to a watercourse (unless not appropriate)
- 5. controlled rainwater discharge to a surface water sewer or drain
- 6. controlled rainwater discharge to a combined sewer

Where connection to the public sewerage network is still required to manage surface water flows, we will accept these flows at a discharge rate in line with CIRIA's best practice guide on SuDS or that stated within the sites planning approval.

If the above surface water hierarchy has been followed and if the flows are restricted to a total of 3.2 l/s, then Thames Water would not have any objections to the proposal.

Please see the attached 'Planning your wastewater' leaflet for additional information.

Diversion

There are existing public sewers crossing the site. New buildings will need to be kept between 3 and 6.5m away from existing sewer depending on the size and depth of the sewer. Alternatively, it may be possible for sewers to be diverted around the new development. If you wish us to review a diversion proposal, please submit this via a Section 185 Diversion application. On some occasions it may be possible to abandon existing public sewers. Please contact us for further information on this process.

What happens next?

Please make sure you submit your connection application, giving us at least 21 days' notice of the date you wish to make your new connection/s

If you have any further questions, please contact me on 0800 009 3921.

Kind Regards,

Hemlata Gurung

Developer Services – Technical Coordinator, Sewer Adoptions Team

Tel: 0800 009 3921

hemlata.gurung@thameswater.co.uk

Get advice on making your sewer connection correctly at connectright.org.uk

Clearwater Court, Vastern Road, Reading, RG1 8DB

Find us online at developers.thameswater.co.uk



UK and Ireland Office Locations

