

# Flood Risk Assessment

Partridge Way  
Haringey  
N22 8DW

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## 1. Executive Summary

It has been demonstrated by this Flood Risk Assessment that the flood risk to the proposed development, from all sources, has been managed by design to a **low** level.

It has been demonstrated that the effect of the proposed development on offsite flood risk is **low**.

It has been demonstrated that there is decrease of surface water run-off rates and run-off volume as a result of the development.

The development is Located in Flood Zone 1.

Threshold drainage will be provided for all entrances.

The property is not within an Environment Agency Flood Warning Zone.

The proposed development will reduce the risk of surface water flooding to a **low** risk level.

Exceedance flows do not increase flood risk within the site, or offsite.

Risk of flooding from sewers has been demonstrated to be **low**.

Risk of flooding from groundwater has been demonstrated to be **low**.

The risk of flooding from canals is considered to be **low**.

Risk of flooding from reservoirs is considered to be **low**.

Climate change has been accounted for in all flood modelling.

## 2. Introduction

This Flood Risk Assessment (FRA) report has been prepared by Ellis & Moore Consulting Engineers for Martin Arnold. This FRA includes an assessment of the residual flood risk from the sources listed below that are associated with the construction of a new residential development by the London Borough of Haringey at Partridge Way, Haringey, N22 6DT.

- Rivers
- Sea
- Land (Surface Run-off)
- Groundwater
- Sewers
- Artificial Sources

This flood risk assessment has been prepared in accordance with the NPPF and Local Planning Policy. Any recommendations regarding floor levels are based on the relevant British Standards (BS8533), the standing advice provided by the Environment Agency or based on common practice.

However, it should be noted that the insurance market applies its own tests to properties in terms of determining premiums and the insurability for flood risk. Those undertaking development in areas which may be at risk of flooding are advised to contact their insurers or the Association of British Insurers (ABI) to seek further guidance prior to commencing development.

Ellis & Moore do not warrant that the advice in this report will guarantee the availability of flood insurance either now or in the future.

## 3. Policy Context

This FRA report has been prepared in accordance with the following national and local planning policy guidance documents on flood protection:

### National

- **Communities & Local Government (CLG) Technical Guidance to the National Planning Policy Framework (NPPF), (March 2012)**
- **Development and Flood Risk – Guidance for the construction industry (CIRIA C624)**
- **Environment Agency/DEFRA W5-074/A/TR/1 -Preliminary rainfall runoff management for developments (January 2012)**
- **National Standards for Sustainable Drainage Systems (NSSDS), Defra (Dec 2011)**
- **National Planning Policy Guidance (NPPG) online (introduced March 2014, updated regularly)**
- **Environment Agency (EA) National Standing Advice to Local Planning Authorities on Development and Flood Risk.**
- **Environment Agency Flood Risk Guidance Note 3**
- **The SuDS Manual, 2015 (Ciria Report C753)**

### Regional

- **Thames Estuary 2100 (TE2100) Plan, November 2012**
- **The London Plan, March 2021.**
- **The London Plan, Sustainable Design and Construction SPG, April 2014**

#### Local

- London Borough of Haringey, Strategic Flood Risk Assessment, February 2015 (Draft)
- London Borough of Haringey, Surface Water Management Plan, August 2011 (Draft)

## 4. Site Specific Planning Context

- The proposed development lies in Flood Zone 1 (<0.1% annual probability of river or sea flooding).
- The proposed development will be located on existing brownfield site.
- The site does not lie in an area susceptible to inundation from a breach in river flood defences.
- The site does not lie within any Critical Drainage Areas in the SFRA.



Figure 1: Aerial view of the existing site (as extracted from Google Maps).

## 5. The Existing Site

### 5.1. Location

The existing site is located in Partidge Way, Wood Green, N22 6DT nearby the Trinity Road and Partidge Way junction. The site is currently occupied by 18 No. garages. The site is bordered by residential properties to the west. Behind the site to the south is a residential car park. The site is centred at Ordnance Survey (OS) Grid Reference: TQ 30421 90911.

A detailed topographical survey of the existing site has been prepared and illustrates that the levels of the site generally range from 37.65m to 36.05m falling from West to East. An extract of the topographical survey has been shown on Appendix A of this report.

The topographical survey confirms that there is a significant soft landscape area associated with the existing site.

### 5.2. Ground Conditions

The proposed site of redevelopment is underlain by a London Clay bedrock, a sedimentary formation made up of impermeable clays and silts. British Geological Society (BGS) boreholes located around 500m to the north-west of the site identifies that. (Appendix E)

Due to the relatively underlying geology, the site may have a limited potential for infiltration, although this is difficult to quantify without the completion of -on site investigation.

### 5.3. Existing Brownfield Rates

The 572m<sup>2</sup> of existing hardstanding areas and roofs would produce a typical 1-year runoff rate of 6.08 /s, assuming a rainfall rate of 50mm/hr and a run off coefficient of 0.9 (see Appendix C– Surface Water Run Off Calculations).

### 5.4. Thames Water Assets

A copy of the public sewer records for the site have been obtained from Thames Water (Appendix B and Figure 2), which illustrate that there are Surface Water and Foul Water sewers (typically 225mm diameter) running along the north west of the site. A build over agreement will be required as the proposed foundations will be in less than 3m distance from the 225 mm foul water sewer on Partridge Way.

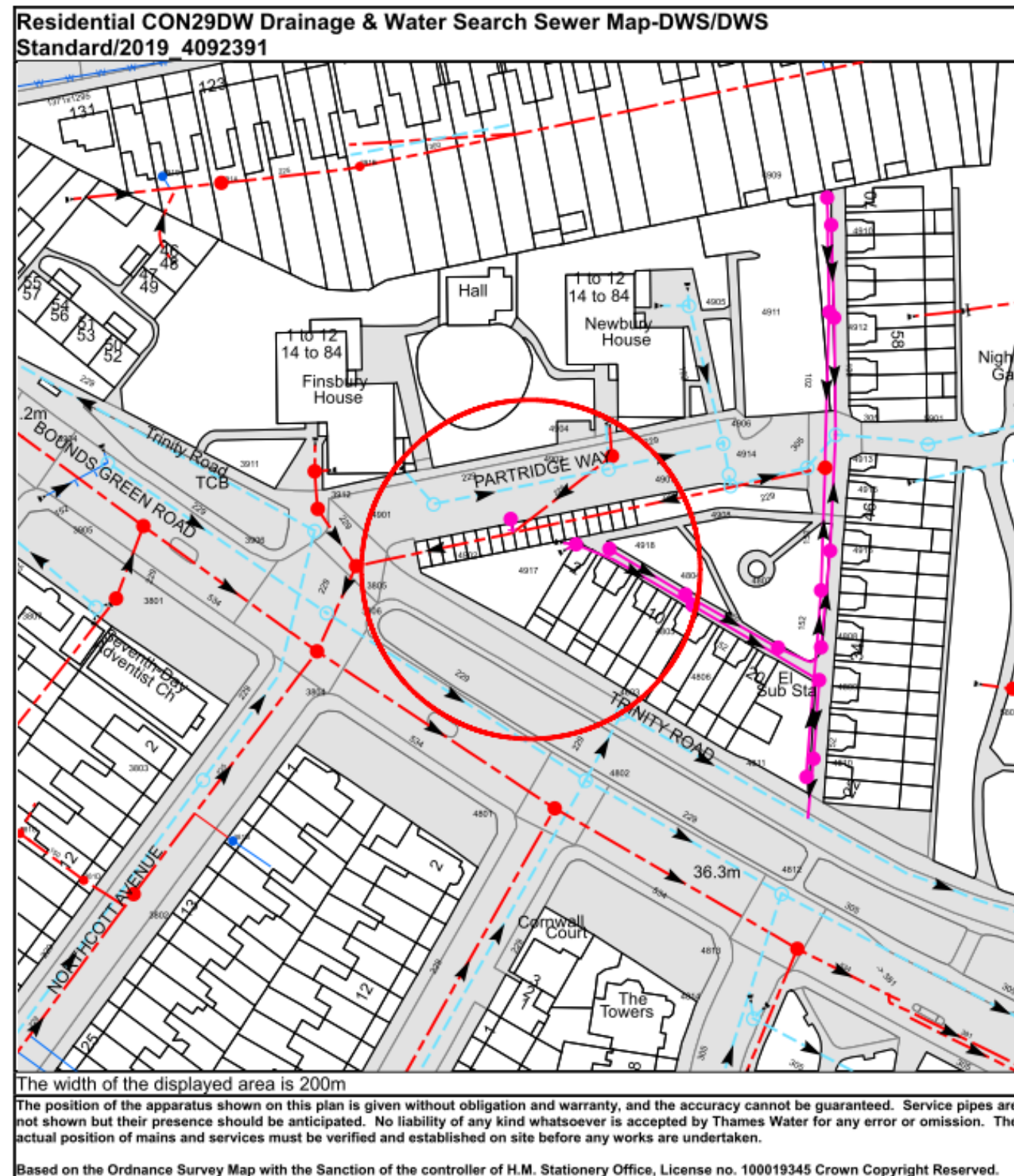


Figure 2: Thames Water Assets map

## 6. Proposed Development

The proposed development is a new housing development by Haringey Council.

The development will offer mixed tenure apartments spread over a nine storey block consisting of 23 residential units.

Figure 3,4 and 5 below presents an extract of the Proposed Plan and elevations of the development, which indicates the outline of the new buildings and landscaping.



Figure 3: Proposed Plan (Unit One Architects)

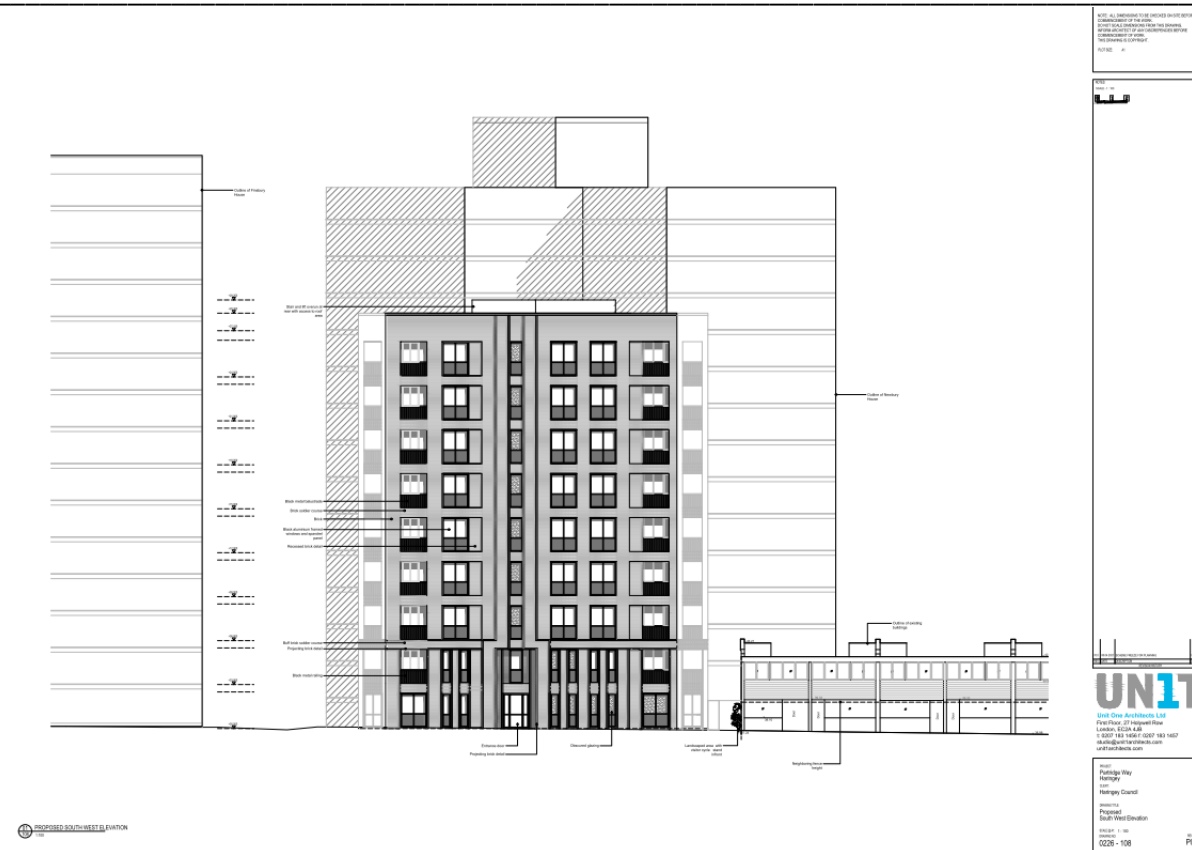


Figure 4: Proposed South West Elevation (Unit One Architects)

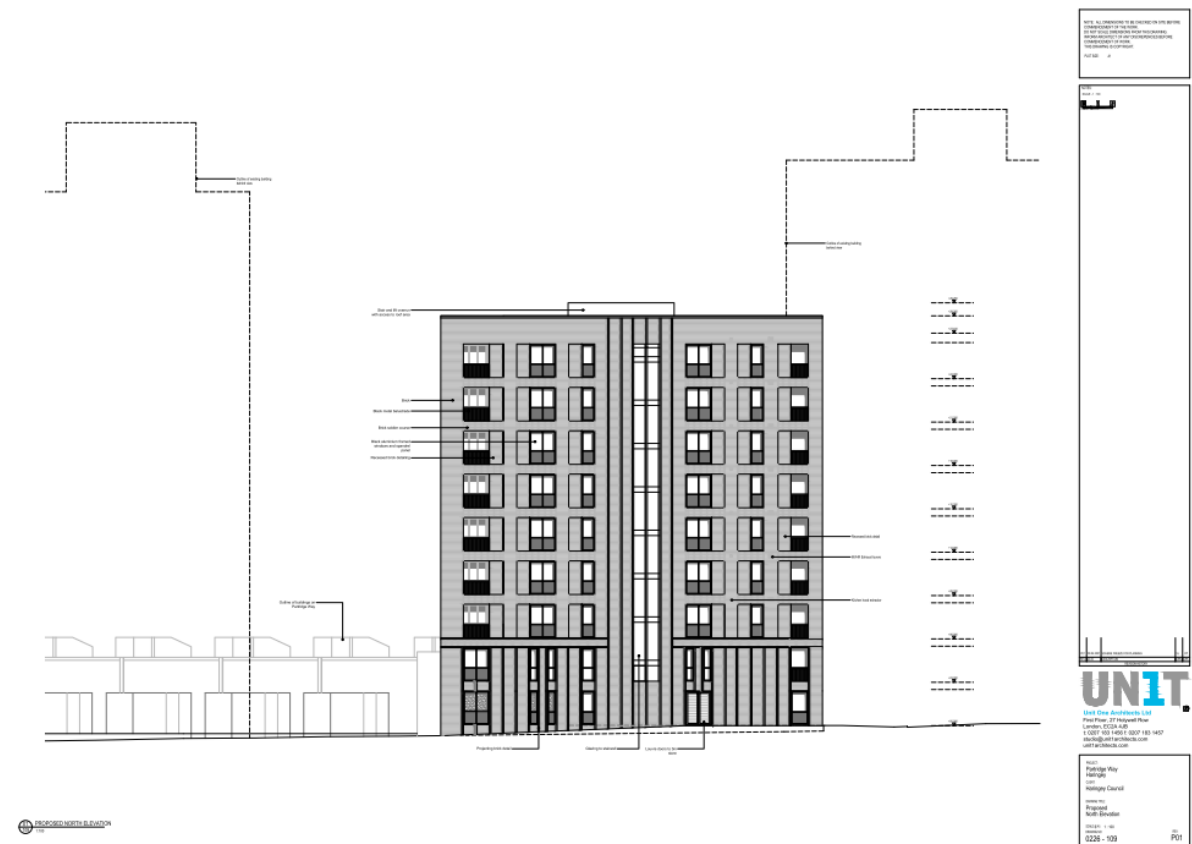


Figure 5: Proposed North Elevation (Unit One Architects)

## 7. Review of Planning Policies and Guidance

### 7.1. National Standards for SuDS

National standards for SuDS are produced by the Department for Environment, Food and Rural Affairs (DEFRA). These national standards set out the criteria by which the form of drainage appropriate to any particular site or development can be determined.

DEFRA states that for sites which were previously developed, the peak runoff rate from the development to any drain, sewer or surface water body for the 1 in 1 year rainfall event and the 1 in 100-year rainfall event must be as close as reasonably practicable to the greenfield runoff rate from the development for the same rainfall event, but should never exceed the rate of discharge from the development prior to redevelopment for that event.

The drainage system must be designed so that, unless an area is designated to hold and/or convey water as part of the design, flooding does not occur on any part of the site for a 1 in 30-year rainfall.

The design of the site must ensure that, so far as is reasonably practicable, flows resulting from rainfall in excess of a 1 in 100-year rainfall event are managed in exceedance routes that minimise the risks to people and property.

### 7.2. The London Plan

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

- 1) Rainwater use as a resource.
- 2) Rainwater infiltration to ground at or close to source.
- 3) Rainwater attenuation in green infrastructure features for gradual release.
- 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.

Development proposals for impermeable surfacing should normally be resisted unless they can be shown to be unavoidable, including on small surfaces such as front gardens and driveways.

Drainage should be designed and implemented in ways that promote multiple benefits including increased water use efficiency, improved water quality and enhanced biodiversity, urban greening, amenity and recreation.

The CIRIA SuDS Manual (2015) generally recommends the institute of Hydrology Report 124 methodology for calculating greenfield runoff rates.

Achieving a greenfield runoff rate is of particular importance where the development is located in a catchment that contributes to combined sewers with known and/or modelled capacity or flooding issues. Information to determine whether capacity/flooding issues exist is available from borough Surface Water Management Plans (SWMP) and Strategic Flood Risk Assessments (SFRAs) as well as other historic data.

Most developments have to achieve at least 50 % attenuation of the site's (prior to re-development) surface water runoff at peak times. This is the minimum expectation from development proposals.

The SPG (3.4.9) states that there may be situations where it is not appropriate to discharge at greenfield runoff rates. These include, for example, sites where the calculated greenfield runoff rate is extremely low, and the final outfall of a piped system required to achieve this would be prone to blockage. An appropriate minimum discharge rate would be 5 litres per second per outfall.

### 7.3. Harringay Local Plan Policy

The London Borough of Haringey recommends that SuDS must be a primary consideration for the management of surface water on green and brownfield development.

The SWMP Action Plan recommends that the following policies are implemented within the boundaries of the LLFA to reduce the flood risk within the borough:

**Policy 1:** All developments across the borough (excluding minor house extensions less than 250 m<sup>2</sup>) which relate to a net increase in impermeable area are to include at least one 'at source' SuDS measure (e.g. waterbutt, rainwater harvesting tank, bioretention planter box etc.). This is to assist in reducing the peak volume of runoff discharging from the site.

**Policy 2:** Proposed 'brownfield' redevelopments greater than 0.1 hectare are required to reduce post development runoff rates for events up to and including the 1 in 100 year return period event with an allowance for climate change (in line with PPS25 and UKCIP guidance) to 50% of the existing site conditions. If this results in a discharge rate lower than the Greenfield conditions, it is recommended that the Greenfield rate (calculated in accordance with loH124) are used.

**Policy 3:** Developments located in Critical Drainage Areas (CDAs) and greater than 0.5 hectare are required to reduce runoff to that of a predevelopment Greenfield runoff rate (calculated in accordance with loH124). It is recommended that a SuDS treatment train is utilised to assist in this reduction.

## 8. Pre-Development Flood Risk- Sources of Flooding

### 8.1. Rivers (Fluvial)

A search of the Environment Agency's website has established that the site does not fall within the floodplain associated with any designated main river, watercourse or costal estuary, thus having a probability of flooding less than 1: 1,000. This is confirmed as being entirely within Flood Zone 1 as per the extract shown in Figure 6 below.

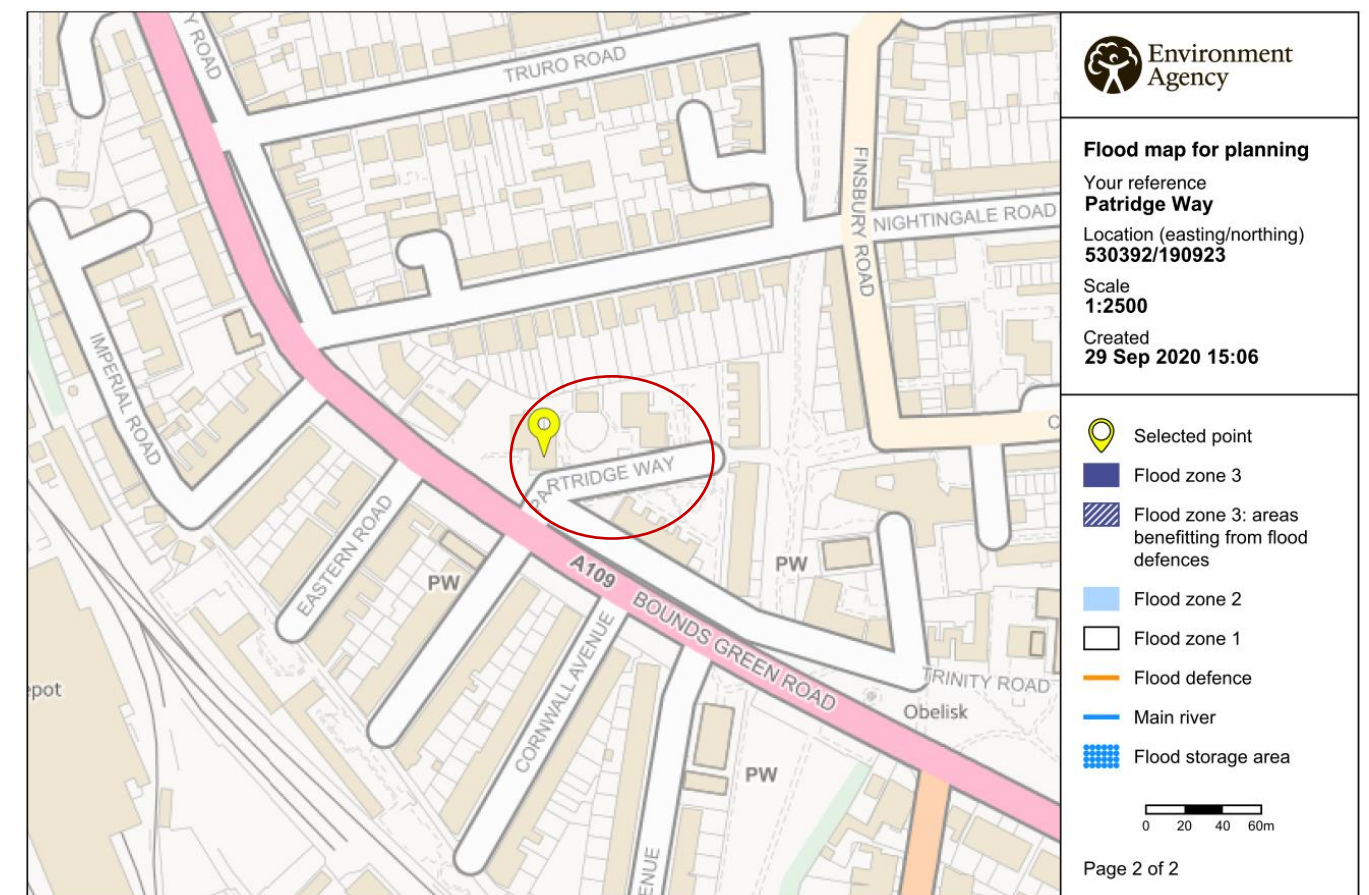


Figure 6: Flood Zone Map (EA Online Maps)

8.2. Land (Surface Water/Pluvial)

The EA surface water flood risk maps (Figure 6) indicates that there is no risk from surface water flooding.

The proposal is to use permeable paving at the parking area and also to use threshold drainage installed on entrances to the building .

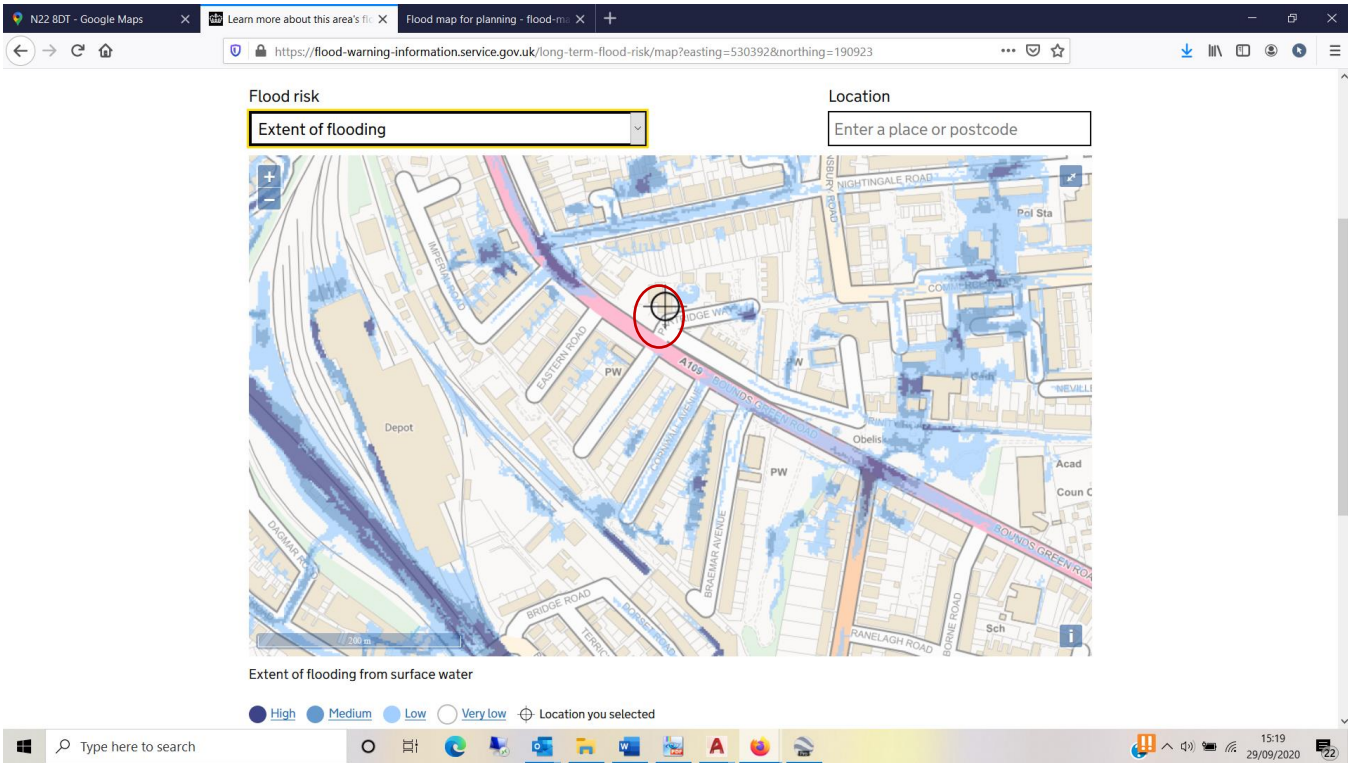


Figure 7: Surface Water Flood Risk (EA Online Maps)

8.3. Groundwater

The London Borough of Haringey SFRA shows that there are no historical incidents of flooding near the site as per figure 8 below.

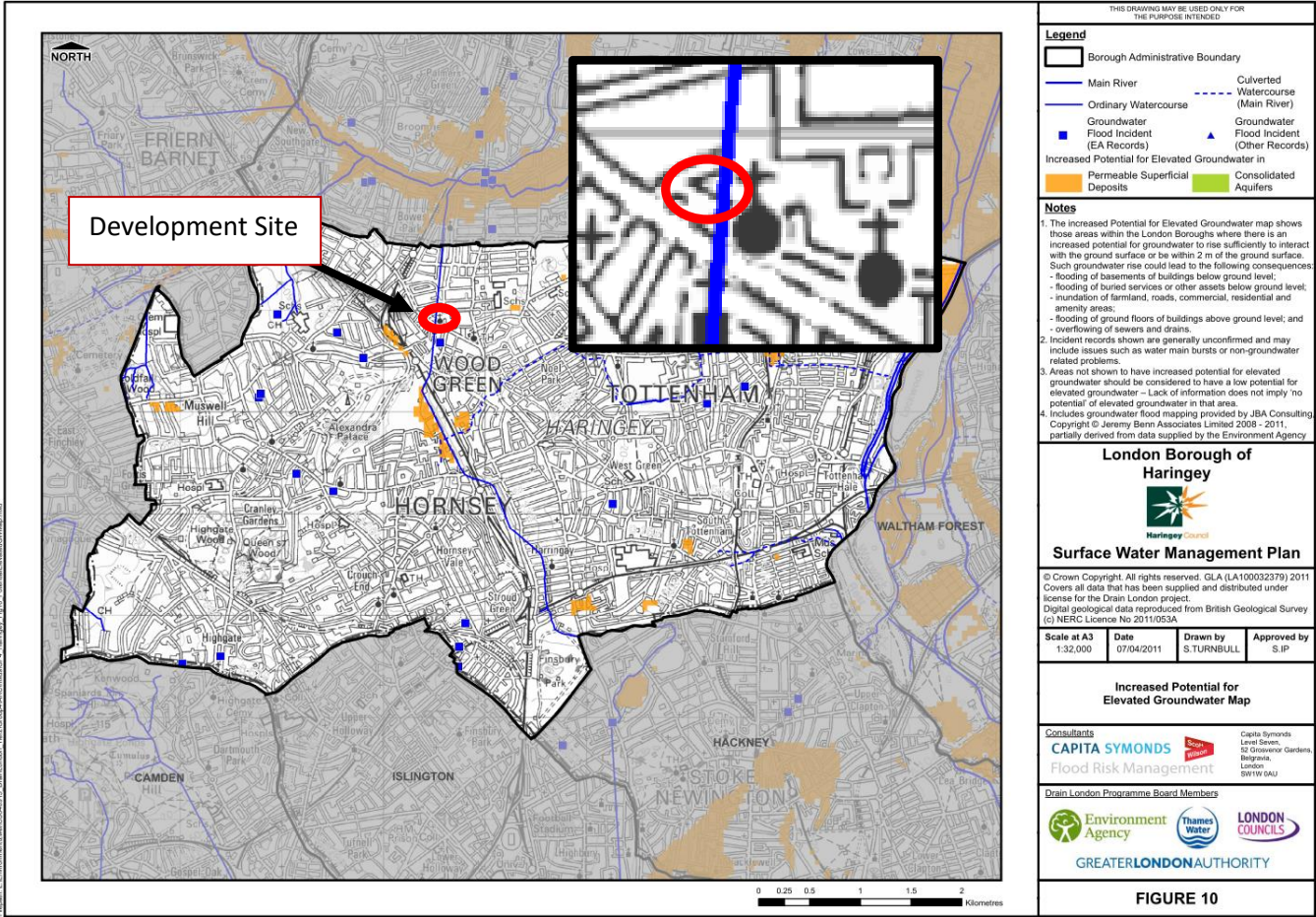


Figure 8: Groundwater and Sewer Flooding Records (Extract from SFRA figure 10)

8.4. Sewers

The London Borough of Haringey SFRA includes mapping history of sewer flooding incidents. It indicates that 6-10 sewer flooding incidents were recorded in the catchment area close to the site during this time which is considered low.

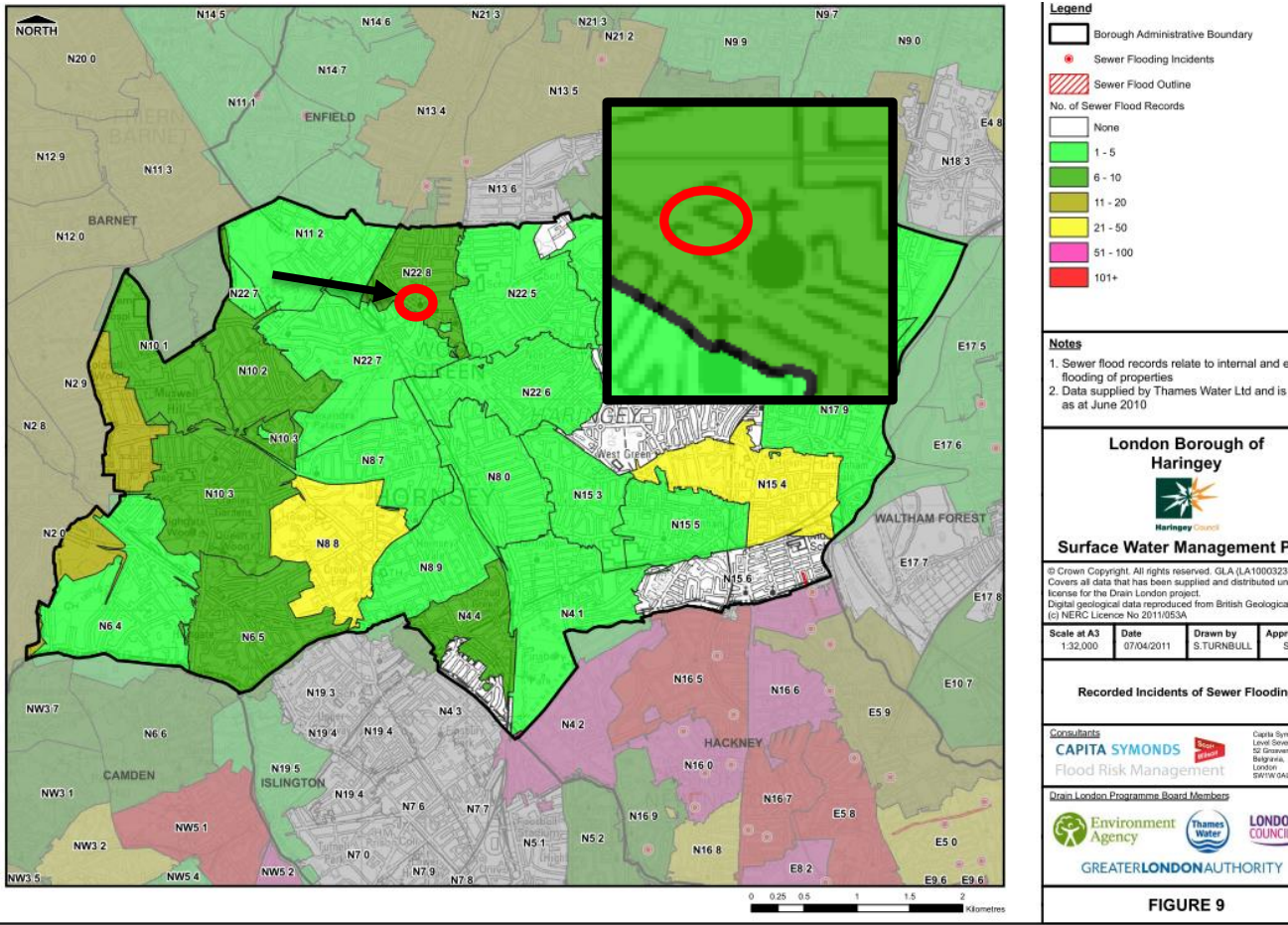


Figure 9: Sewer Flooding Incidents (Extract from SFRA Figure 9)

8.5. Artificial Sources

Environment Agency maps indicate that the site is not at risk of flooding from reservoir failure.

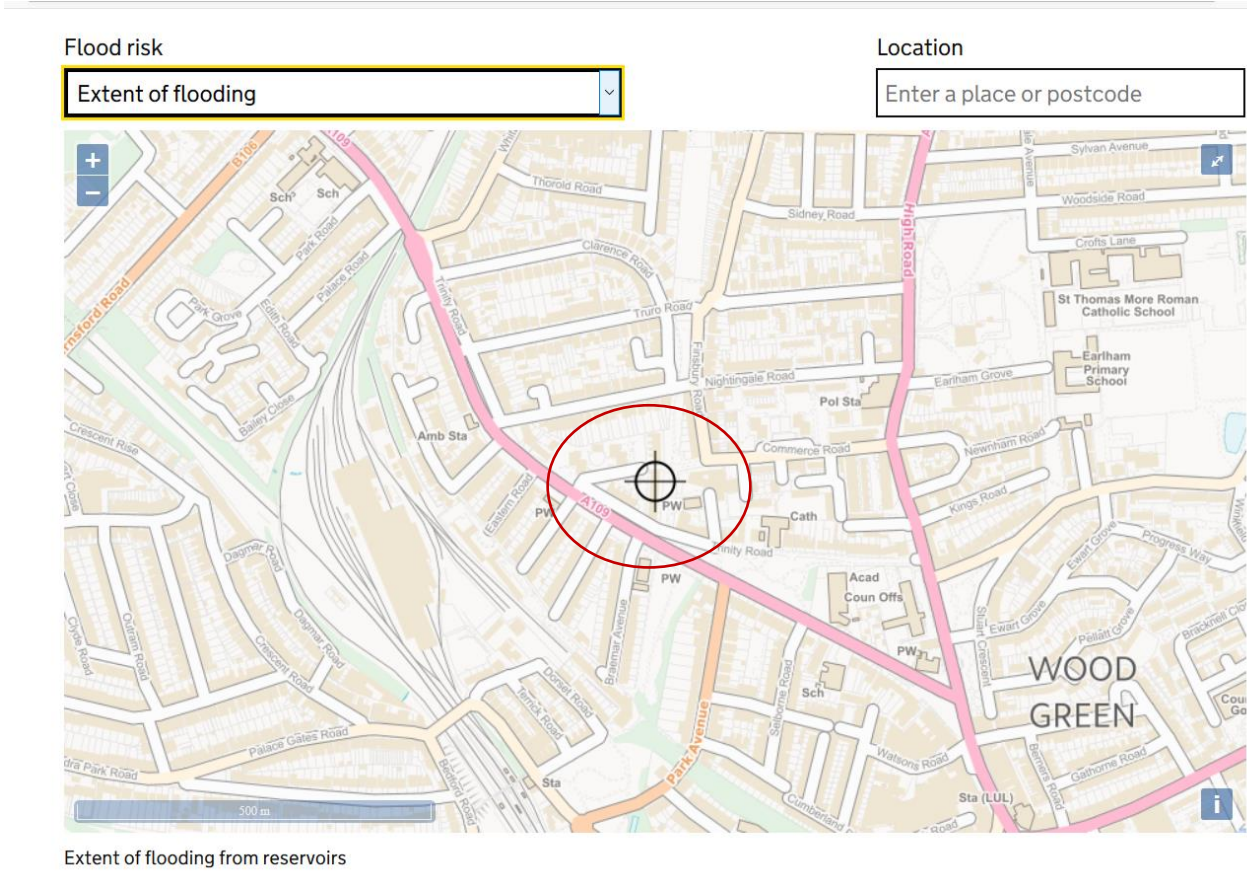


Figure 10: Flood Risk from Reservoirs (EA Online Flood Maps)

## 9. Proposed Drainage Strategy

### 9.1. Proposed SuDS

The approach taken for the drainage of all new surfaces is to create a management train from run-off source to site outfall, incorporating attenuation and treatment wherever possible.

Permeable surfacing is proposed to be used over 40 m<sup>2</sup> area. All permeable paving will be underlain by 600mm depth of open graded Type 3 sub-base (4/40 nom. size), lined by an impermeable liner, which will drain by gravity via sub-base drains.

The Type C permeable paving construction is lined to prevent percolation of water to ground, in accordance with CIRIA SuDS manual C753. The system is wrapped in an impermeable, flexible membrane placed above the subgrade and once the water has filtered through the sub-base, it is conveyed to the attenuation storage.

The greenfield runoff rate from the site would be extremely low and produce a very small diameter flow control. It is therefore proposed to apply 50% minimum reduction of post development rates. It is proposed to use a Hydro-brake flow control (2.5 l/s) in the surface water manhole upstream the existing demarcation manhole. The surface water then discharges to the surface water public sewer.

Refer to Appendix D for the proposed Drainage Layout.

### 9.2. Proposed Attenuation

The approach taken for the drainage of all new surfaces is to create a management train from run-off source to site outfall, incorporating attenuation and treatment wherever is possible.

Combination of underground storage using geocellular crates and permeable paving is a suitable method for storage for this site, which will limit the discharge to 2.5 l/s with the proposed hydrobrake during the peak run off period.

The design of the proposed surface water network is based on the extreme 1 in 100-year storm event and climate change allowance of 40% for exceedance, in accordance with the Environment Agency guidance.

The attenuation provided at all areas are to provide approximately 14 m<sup>3</sup> of effective storage.

The greenfield rates are very low and instead the approach of minimum of 50 % reduction of post development runoff rates for events up to 1 in 100 year return period event with an allowance for climate change. The existing run off as presented in Appendix C is 5.1 l/s. and the proposed discharge rate is limited to 2.5 l/s.

Windes Microdrainage has been used to estimate the volume of attenuation, based on a drained area as shown on Table 1 below and a total site discharge of 2.5 l/s. A climate change allowance of 40% has been used with FSR rainfall data. The climate change allowance is in accordance with current EA recommendations.

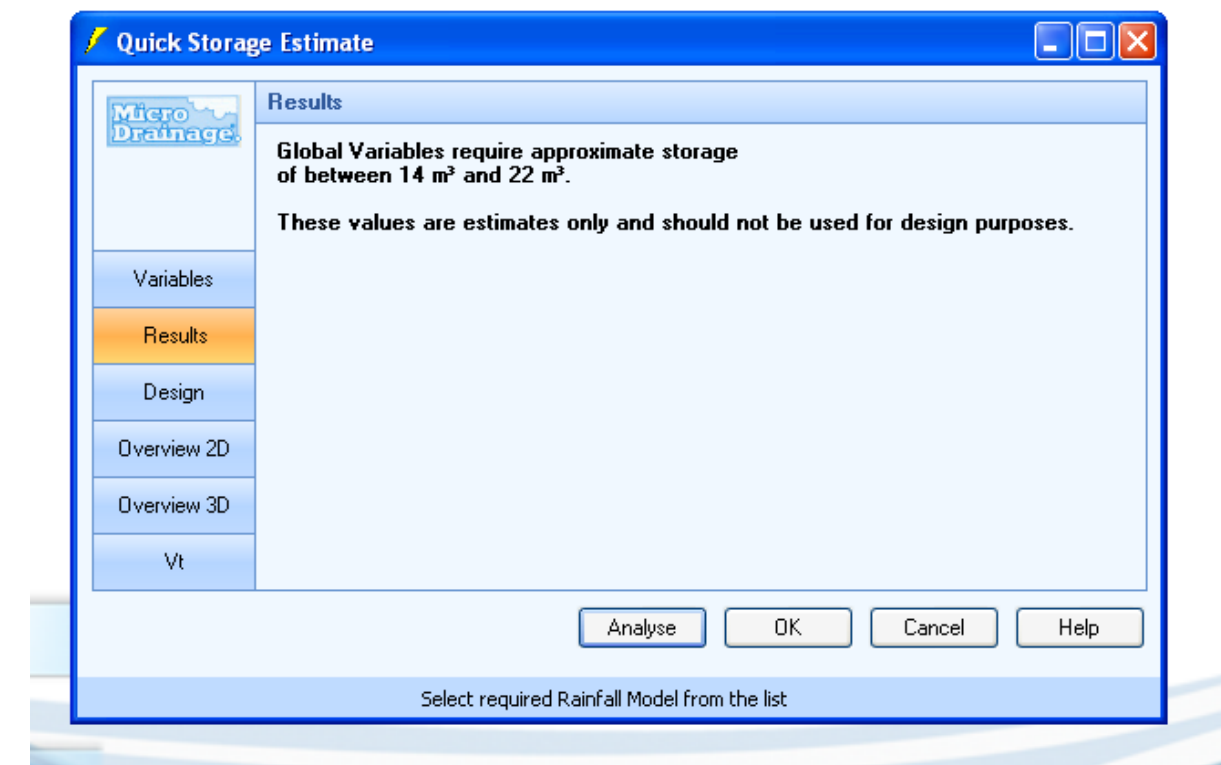


Figure 11: Microdrainage quick storage estimate (extract from Windes microdrainage software)

| Site             | Impermeable area (m <sup>2</sup> ) | Permeable area (m <sup>2</sup> ) |           | Total Site Area (m <sup>2</sup> ) |
|------------------|------------------------------------|----------------------------------|-----------|-----------------------------------|
| Pre-development  | 572                                | 705                              |           | 1,277                             |
| Post development | 510                                | 767                              |           | 1,277                             |
|                  |                                    | Porous paving                    | Landscape |                                   |
|                  |                                    | 40                               | 727       |                                   |

Table 1 – Estimated areas of permeable and impermeable surfaces

As shown in Table 1 above, the existing total site area for the new development comprises 572m<sup>2</sup> of impermeable surfacing. Post- development, the impermeable area will decrease to 510 m<sup>2</sup> of the total site area.

The total site area is 1,277 m<sup>2</sup> but it will remain unchanged except from the development site. The only change will be replanting the playground and associated green areas and a new bin store area will be introduced for Finsbury House. The wider drainage area would remain unaffected from the above changes.

### 9.3. Proposed Foul Water

Discharge of foul water from foul soil stacks will enter a private below ground gravity drainage network, with pipes laid to prescribed gradients to ensure self-cleansing flows. This new network will outfall into the existing public combined sewer manhole on site, which in turn connects to the foul water public sewer in Partridge Road.

#### Design Parameters

The foul water network has been designed to the standards specified in Sewers for Adoption (7th Edition) and Doc H of the Building Regs.

## 10. Proposed Flood Mitigation Measures

Below is an overview of the applicability of the available best practise sustainable drainage components, in the context of the baseline drainage conditions, the ground conditions and the type of the development.

### 10.1. Infiltration Components

The proposed site of redevelopment is underlain by a London Clay bedrock, a sedimentary formation made up of impermeable clays and silts. British Geological Society (BGS) boreholes located around 500m to the north-west of the site identifies that.

### 10.2. Filtration Components -Permeable Paving

40m<sup>2</sup> of permeable paving is proposed. Permeable paving construction will offer filtration and treatment of runoff, as well as provide additional volume, within an open-graded (voided) sub-base.

The installation of Type C (lined) permeable block paving surface and open graded attenuation sub-base is proposed to prevent any infiltration to the ground. The sub-base will be drained with filter drains that collect percolated runoff and convey it to the downstream network.

The sub-base will be lined with a proprietary impermeable membrane.

### 10.3. Exceedance flows

Runoff generated from rainfall events up to the 1 in 100 year plus 40% climate change will be attenuated on site and will not cause any increase or offsite flood risk.

### 10.4. SuDS Management Train and Treatment Stages

In summary, the following components are proposed to form a surface run-off management train.

|                                                                          |  |                                      |                                                                     |
|--------------------------------------------------------------------------|--|--------------------------------------|---------------------------------------------------------------------|
| Source Control: Run-off & Pollution Prevention (treatment + attenuation) |  | Permeable Paving-                    |                                                                     |
| On site Control (attenuation)                                            |  | Geocellular                          |                                                                     |
| Onsite Control (limiting the flow)                                       |  | Hydrobrake manhole                   |                                                                     |
| Conveyance (to existing combined sewer)                                  |  | Existing surface water sewer offsite | Offsite discharge to public sewer for all events limited to 2.5 l/s |

Table 2: SuDS Management Train

The proposed SuDS provide the following levels of treatment (Table 2). All SuDS mitigation indices exceed pollution indices in accordance with SuDS Manual.

| Proposed Surface | Pollution Hazard Index                 | SUDS Manual ref: | SUDS components  | SUDS Mitigation Index                  | SUDS Manual ref: |
|------------------|----------------------------------------|------------------|------------------|----------------------------------------|------------------|
| Commercial Yard  | 0.7 TSS<br>0.6 Metals<br>0.7 H.Carbons | Table 26.2       | Permeable Paving | 0.7 TSS<br>0.6 Metals<br>0.7 H.Carbons | Table 26.4       |
|                  |                                        |                  |                  |                                        |                  |

Table 3: Runoff Treatment Levels

## 10.5. Storm Water Design Parameters

Rainfall Data:

- FEH Rainfall data has been used for the calculation of attenuation volumes.

Climate Change.

- A 40% allowance for climate change has been incorporated in the calculations of the required attenuation in the critical duration 100-year storm.

Drained areas.

- All positively drained areas have been accounted for in the attenuation calculations.
- PIMP (Percentage Impermeable Area) Coefficient.

- There is a permeable area of 418m<sup>2</sup> within a site area of 480m<sup>2</sup>. A conservative PIMP value of 100% has been used in hydraulic calculations.

Runoff Coefficients.

- Runoff coefficients of 0.75 (Summer) and 0.84 (Winter) have been used for all positively drained hard surfaces for the calculation of attenuation volumes.

Minimum velocity.

- A minimum self-cleansing flow velocity of 0.75m/s in the 1-year design return period event has been used to design diameters of pipework and gradients.

Pipe Size Design Criteria.

- The following return periods have been used when designing pipe diameters:
  - 2-year – no pipe surcharge
  - 30-year – pipe surcharge with no surface flooding.
  - 100-year – pipe surcharge with no surface flooding.

## 10.6. Hydraulic Calculations

Microdrainage/ Windes computational fluid dynamics, by XP Solutions, has been used to model the proposed storm water network in the design conditions above. Please refer to Appendix F for a summary of the parameter inputs and results of the MicroDrainage calculations.

# 11. Sequential and Exception Tests

## 11.1. Sequential Test

The sequential test is not applicable to this site. The site lies within Flood Zone 1

## 11.2. Exception Test

The exception test is not applicable to this site. The site lies within Flood Zone 1.

12. Impact of the Proposed Development

The design of the proposed surface water network is based on the extreme 1 in 100 year storm event and a climate change allowance of 40 % for exceedance, in accordance to current EA guidance.

Rivers (Fluvial Flooding)

There is no impact on River Thames. Runoff discharges to Thames Water public sewer.

Sewers

Flow rates

There is a decrease in discharge rate to the surface water sewer.

Flow Volume

There is a decrease in discharge volume to the surface water sewer.

Water Quality

There will be a beneficial effect to runoff water quality due to the the permeable paving.

Sea

There is no impact on tidal waters by this site.

Land (Surface Water/Pluvial Flooding)

Run-off Rates

There is a reduction in runoff rate and volume to offsite highway surfaces.

Water Quality

Pollutant loads discharged offsite will be reduced by the proposals.

Groundwater

The proposed development has no impact on groundwater resources.

Artificial Sources (Canals, Reservoirs)

The proposed development has no impact on flooding from canals or reservoirs.

Climate Change

In accordance with NPPF and EA requirements, an allowance for Climate Change has been made in the EA modelling of tidal and fluvial flooding.

13. Assessment of Post-Development Flood Risk

Table 4 below indicates all sources of flooding relevant to this, assess the impact of the development and identifies the residual risk.

| Hazard                          | Baseline Condition                                                                                 | Impact of Development                            | Mitigation                                                                                                                                                          | Residual Flood Risk |
|---------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Rivers                          | The site lies in Flood Zone 1, <1 in 1000 annual probability of river or sea flooding in any year. | None                                             | None required                                                                                                                                                       | Low                 |
| Sea                             | There is no risk of flooding from sea                                                              | None                                             | None                                                                                                                                                                | Low                 |
| Groundwater                     | No historical incidents of flooding near the site                                                  | None                                             | None required                                                                                                                                                       | Low                 |
| Land (Surface Water/Pluvial)    | Existing impermeable area of 572 m <sup>2</sup> of a total 1,277 m <sup>2</sup> of site area.      | Beneficial                                       | impermeable area decreases to 510m <sup>2</sup> . New proposed development runoff to be limited to 2.5l/s. Decrease in 100-year runoff rate to sewer.               | Low                 |
| Land (Surface Water/Pluvial)    | There is a low risk of flooding in the proposed development                                        | Reduction in the risk of surface water flooding. | It is proposed the use of threshold drainage installed on all entrances to the building and also alongside the perimeter of the new, significantly reduced in area, | Low                 |
| Sewers                          | No sewer flooding recorded in the vicinity of the site                                             | Beneficial                                       | Reduction in discharge rate and volume to sewer.                                                                                                                    | Low                 |
| Artificial sources (Canal)      | There is no flood risk from canals.                                                                | None                                             | None required                                                                                                                                                       | None                |
| Artificial sources (Reservoirs) | There is no risk of flooding from reservoir failure.                                               | None                                             | None required                                                                                                                                                       | Low                 |

Table 4: Residual Flood Risk Summary

## 14. Conclusion

This FRA has been prepared by Ellis and Moore to support a planning application for the Partridge Way, Wood Green, N22 6DT, London Borough of Haringey, London.

- The EA's online Flood Map for Planning indicates that the site is located within Flood Zone 1, and therefore sequential and exception test are not applicable for this site.
- The FRA demonstrates that the development proposals provide wider sustainable benefits to the area and will be safe for its lifetime.
- The EA's online Flood Map's indicates that there is no risk of flooding in the proposed development from surface water.
- Surface water will be controlled on site so that the peak discharge is no greater than 50% of the existing rate for the 1 in 100 year + 40% climate change storm event.
- There are existing foul and surface water sewers in the vicinity of the site, which the proposed drainage network can connect in to, following detailed design, and subject to Thames Water approval.

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## Appendix A - Topographical Survey



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## Appendix B - Thames Water Records

London Borough of Haringey  
156930 Wood Green 5

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| Search address supplied | Partridge Way Garages, Partridge Way, Bounds Green Road, Bounds Green, London, N22 8DW |
| Your reference          | LEG/PP 62565JOH (Partridge)                                                            |
| Our reference           | DWS/DWS Standard/2019_4092391                                                          |
| Received date           | 14 October 2019                                                                        |
| Search date             | 15 October 2019                                                                        |

#### Keeping you up-to-date

##### Notification of Price Changes

From 1 September 2018 Thames Water Property Searches will be increasing the price of its Residential CON29DW and Commercial Drainage & Water Enquiries in line with RPI at 3.23%.

For further details on the price increase, please visit our website: [www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)  
Please note that any orders received with a higher payment prior to the 1 September 2018 will be non-refundable.



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



0845 070 9148

| Question | Summary Answer |
|----------|----------------|
|----------|----------------|

### Maps

|     |                                                                                 |              |
|-----|---------------------------------------------------------------------------------|--------------|
| 1.1 | Where relevant, please include a copy of an extract from the public sewer map.  | Map Provided |
| 1.2 | Where relevant, please include a copy of an extract from the map of waterworks. | Map Provided |

### Drainage

|       |                                                                                                                                                                                          |                  |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 2.1   | Does foul water from the property drain to a public sewer?                                                                                                                               | See Details      |
| 2.2   | Does surface water from the property drain to a public sewer?                                                                                                                            | See Details      |
| 2.3   | Is a surface water drainage charge payable?                                                                                                                                              | See Details      |
| 2.4   | Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?                                                               | Yes              |
| 2.4.1 | Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?                                                    | No               |
| 2.5   | Does the public sewer map indicate any public sewer within 30.48 metres(100 feet) of any buildings within the property?                                                                  | See Details      |
| 2.5.1 | Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres of any buildings within the property?                                 | No               |
| 2.6   | Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?            | No               |
| 2.7   | Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain? | No               |
| 2.8   | Is the building which is or forms part of the property, at risk of internal flooding due to overloaded public sewers?                                                                    | Not At Risk      |
| 2.9   | Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.                                                                               | 5.926 Kilometres |

### Water

|     |                                                                                                                                                                              |             |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| 3.1 | Is the property connected to mains water supply?                                                                                                                             | See Details |
| 3.2 | Are there any water mains, resource mains or discharge pipes within the boundaries of the property?                                                                          | Yes         |
| 3.3 | Is any water main or service pipe serving or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement? | No          |
| 3.4 | Is the property at risk of receiving low water pressure or flow?                                                                                                             | See Details |
| 3.5 | What is the classification of the water supply for the property?                                                                                                             | See Details |
| 3.6 | Please include details of the location of any water meter serving the property.                                                                                              | See Details |

### Charging

|       |                                                                                                                                |              |
|-------|--------------------------------------------------------------------------------------------------------------------------------|--------------|
| 4.1.1 | Who are the sewerage undertakers for the area?                                                                                 | Thames Water |
| 4.1.2 | Who are the water undertakers for the area?                                                                                    | Thames Water |
| 4.2   | Who bills the property for sewerage services?                                                                                  | Not Billed   |
| 4.3   | Who bills the property for water services?                                                                                     | Not Billed   |
| 4.4   | What is the current basis for charging for sewerage and/or water services at the property?                                     | No Charge    |
| 4.5   | Will the basis for charging for sewerage and water services at the property change as a consequence of a change of occupation? | No           |

**Search address supplied:** Partridge Way Garages, Partridge Way, Bounds Green Road,  
Bounds Green, London, N22 8DW

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website [www.thameswater.co.uk](http://www.thameswater.co.uk) and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the Map of Public Sewers, the Map of Waterworks, Water and Sewer billing records, Adoption of Public Sewer records, Building Over Public Sewer records, the Register of Properties subject to Internal Foul Flooding, the Register of Properties subject to Poor Water Pressure and the Drinking Water Register. Thames Water Utilities Ltd (TWUL), Clearwater Court, Vastern Road, Reading RG1 8DB, holds all of these.

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments

Please refer to the attached [Terms & Conditions](#).



We are members of DWSN, the industry body for those companies responsible for compiling responses to the Law Society's CON29DW Enquiry. We comply with the DWSN Code of Practice that provides consumer protection and ensures good practice in this critical area of property information.



Thames Water Property Searches is an Executive member of CoPSO (Council of Property Search Organisations).



Thames Water Property Searches fully complies with The Property Ombudsman in any queries or complaints received.

## **Interpretation of CON29DW Drainage and Water Search**

Appendix 1 contains definitions of terms and expressions used in this report.

For your guidance:

- Thames Water Property Searches Complaints Procedure:
  - o Thames Water Property Searches offers a robust complaints procedure. Complaints can be made by telephone, in writing, by email ([searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)) or through our website ([www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk))

As a minimum standard Thames Water Property Searches will:

- o endeavour to resolve any contact or complaint at the time of receipt. If this isn't possible, we will advise of timescales;
- o investigate and research the matter in detail to identify the issue raised (in some cases third party consultation will be required);
- o provide a response to the customer within 10 working days of receipt of the complaint;
- o provide compensation, if no response or acknowledgment that we are investigating the case is given within 10 working days of receipt of the complaint;
- o keep you informed of the progress and, depending on the scale of investigation required, update with new timescales as necessary;
- o provide an amended search, free of charge, if required;
- o provide a refund if we find your complaint to be justified; take the necessary action within our power to put things right.

If you want us to liaise with a third party on your behalf, just let us know.

If you are still not satisfied with the outcome provided we will refer the matter to a Senior Manager for resolution who will respond again within 5 working days.

If you remain dissatisfied with our final response you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). Please refer to the final page of the search for further details.

## Maps

### **1.1 – Where relevant, please include a copy of an extract from the public sewer map.**

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

For your guidance:

- The Water Industry Act 1991 defines Public Sewers as those which Thames Water have responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purposes only.
- 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.
- Assets other than public sewers may be shown on the copy extract, for information.

### **1.2 – Where relevant, please include a copy of an extract from the map of waterworks.**

A copy of an extract of the map of waterworks is included, showing water mains, resource mains or discharge pipes in the vicinity of the property.

For your guidance:

- The "water mains" in this context are those, which are vested in and maintainable by the water company under statute.
- Assets other than public water mains may be shown on the plan, for information only.
- Water companies are not responsible for private supply pipes connecting the property to the public water main and do not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- 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.

## Drainage

### 2.1 – Does foul water from the property drain to a public sewer?

The enquiry appears to relate to a plot of land or a recently built property. It is recommended that drainage proposals are checked with the developer.

For your guidance:

- Water companies are not responsible for any private drains that connect the property to the public sewerage system and do not hold details of these. The property owner will normally have sole responsibility for private drains serving the property. These may pass through land outside the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- If foul water does not drain to the public sewerage system, the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

## **2.2 – Does surface water from the property drain to a public sewer?**

Records indicate that this enquiry relates to a plot of land or a recently built property. It is recommended that the drainage proposals are checked with the developer. If the property was constructed after 6th April 2015 the Surface Water drainage may be served by a Sustainable Drainage System (SuDS). Further information may be available from the Developer.

For your guidance:

- Sewerage Undertakers are not responsible for any private drains that connect the property to the public sewerage system, and do not hold details of these.
- The property owner will normally have sole responsibility for private drains serving the property. These private drains may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.
- In some cases, 'Sewerage Undertakers' records do not distinguish between foul and surface water connections to the public sewerage system.
- At the time of privatisation in 1989, Sewerage Undertakers were sold with poorly-kept records of sewerage infrastructure. The records did not always show which properties were connected for surface water drainage purposes. Accordingly, billing records have been used to provide an answer for this element of the drainage and water search.
- Due to the potential inadequacy of 'Sewerage Undertakers' infrastructure records with respect to surface water drainage, it is the customer's responsibility to inform the Sewerage Undertaker that they do not receive the surface water drainage service. If on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. For further information, please contact Thames Water on Tel: 0800 316 9800, or refer to the website at [www.thameswater.co.uk](http://www.thameswater.co.uk).
- If surface water from the property does not drain to the public sewerage system, the property may have private facilities in the form of a soakaway or private connection to a watercourse.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property and it should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

### **2.3 – Is a surface water drainage charge payable?**

This enquiry appears to relate to a plot of land or a recently built property. It is recommended that charging proposals are checked with the developer. If the property was constructed after 6th April 2015 the Surface Water drainage may be served by a Sustainable Drainage System (SuDS). Further information may be available from the Developer.

For your guidance:

- If surface water from the property drains to a public sewer, then a surface water drainage charge is payable.
- Where a surface water drainage charge is currently included in the property's water and sewerage bill but, on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. For further information, please contact Thames Water on Tel: 0800 316 9800 or refer to the website [www.thameswater.co.uk](http://www.thameswater.co.uk).

### **2.4 – Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?**

The public sewer map included indicates that there is a public sewer, disposal main or lateral drain within the boundaries of the property. However, from the 1st October 2011 there may be additional public sewers, disposal mains or lateral drains which are not recorded on the public sewer map but which may further prevent or restrict development of the property.

For your guidance:

- Thames Water has a statutory right of access to carry out work on its assets. Employees of Thames Water or its contractors may, therefore, need to enter the property to carry out work.
- Please note if the property was constructed after 1st July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public sewer running within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- 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.

**2.4.1 – Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?**

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

For your guidance:

- Private pumping stations installed before 1 July 2011 will be transferred into the ownership of the sewerage undertaker.
- The approximate boundary of the property has been determined by reference to the Ordnance Survey Record or the map supplied.
- The presence of a public Pumping station running within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- 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.

**2.5 – Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?**

The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of any buildings within the property.

However, from the 1st October 2011 many private sewers were transferred into public ownership and may not be recorded on the public sewer map and it is our professional opinion that if the property is connected to a foul sewer it is likely that there will be a public sewer within 30.48 metres (100 feet) of any buildings within the property.

For your guidance:

- This is because there are no buildings from which to measure the distance to any public sewers.
- The presence of a public sewer within 30.48 metres (100 feet) of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- 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.

**2.5.1 – Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?**

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

For your guidance:

- Private pumping stations installed before 1 July 2011 will be transferred into the ownership of the sewerage undertaker.
- The presence of a public pumping station within 50 metres of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- 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.

**2.6 – Are any sewers or lateral drains serving or which are proposed to serve the property the subject of an existing adoption agreement or an application for such an agreement?**

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

For your guidance:

- Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.
- This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to a public sewer.
- Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.
- Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991 and meeting the requirements of 'Sewers for Adoption' 6<sup>th</sup> Edition.

**2.7 – Has a sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?**

There are no records in relation to any approval or consultation about plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

For your guidance:

- From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have been approved or consulted about any plans to erect a building or extension on the property over or in the vicinity of these.
- Buildings or extensions erected over a sewer in contravention of building controls may have to be removed or altered.

**2.8 – Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?**

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a property may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

For your guidance:

- For reporting purposes buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website [www.thameswater.co.uk](http://www.thameswater.co.uk)

**2.9 – Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.**

The nearest sewage treatment works is Deephams STW which is 5.926 kilometres to the north east of the property.

For your guidance:

- The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.
- The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.
- It should be noted that there may be a private sewage treatment works closer than the one detailed above that has not been identified.
- As a responsible utility operator, Thames Water Utilities seeks to manage the impact of odour from operational sewage works on the surrounding area. This is done in accordance with the Code of Practice on Odour Nuisance from Sewage Treatment Works issued via the Department of Environment, Food and Rural Affairs (DEFRA). This Code recognises that odour from sewage treatment works can have a detrimental impact on the quality of the local environment for those living close to works. However DEFRA also recognises that sewage treatment works provide important services to communities and are essential for maintaining standards in water quality and protecting aquatic based environments. For more information visit [www.thameswater.co.uk](http://www.thameswater.co.uk)

## Water

### 3.1 – Is the property connected to mains water supply?

The enquiry appears to relate to a plot of land or a recently built property. It is recommended that the water proposals are checked with the developer.

For your guidance:

- The Company does not keep details of private supplies. The situation should be checked with the current owner of the property.

### 3.2 – Are there any water mains, resource mains or discharge pipes within the boundaries of the property?

The map of waterworks indicates that there are water mains, resource mains or discharge pipes within the boundaries of the property.

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied the Ordnance Survey Record was used. If the Water company mentioned in 4.1.2 is not Thames Water Utilities Ltd the boundary of the property has been determined by the Ordnance Survey.
- The presence of a public water main within the boundary of the property may restrict further development within it. Water companies have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.

### 3.3 – Is any water main or service pipe serving or which is proposed to serve the property the subject of an existing adoption agreement or an application for such an agreement?

Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

For your guidance:

- This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to the mains water supply.

### 3.4 – Is the property at risk of receiving low water pressure or flow?

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied the Ordnance Survey Record was used.
- “Low water pressure” means water pressure below the regulatory reference level, which is the minimum pressure when demand on the system is not abnormal.
- Water Companies are required to include in the Regulatory Register that is presented annually to the Director General of Water Services, properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level)
- The reference level of service is a flow of 9 litres/minute at a pressure of 10metres / head on the customer's side of the outside stop valve (osv). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap. The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served. For two properties, a flow of 18 litres/minute at a pressure of 10metres/head on the customers' side of the osv is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS806-3 or the Institute of Plumbing handbook.
- **Allowable exclusions** The Company is required to include in the Regulatory Register properties receiving pressure below the reference level, provided that allowable exclusions listed below do not apply.
- **Abnormal demand:** This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand, which are normally expected. Companies should exclude from the reported figures properties which are affected by low pressure only on those days with the highest peak demands. During the report year companies may exclude, for each property, up to five days of low pressure caused by peak demand.
- **Planned maintenance:** Companies should not report low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low-pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.
- **One-off incidents:** This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as pressure reducing valves or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded
- **Low-pressure incidents of short duration:** Properties affected by low pressures, which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded from the reported figures.
- Please contact your water company mentioned in Question 4.1.2 if you require further information on water pressure.

### 3.5 – What is the classification of the water supply for the property?

The water supplied to the property has an average water hardness of 110mg/l calcium which is defined as HARD by ThamesWater.

For your guidance:

- Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table shows the normal ranges of hardness.
- Sample table for information only:

| Thames Water Hardness Category | Calcium (mg/l) | Calcium Carbonate (mg/l) | English Clarke degrees | French degrees | General/ German degrees |
|--------------------------------|----------------|--------------------------|------------------------|----------------|-------------------------|
| Soft                           | 0 to 40        | 0 to 100                 | 0 to 7                 | 0 to 10        | 0 to 5.6                |
| Medium                         | 41 to 80       | 101 to 200               | 8 to 14                | 11 to 20       | 5.7 to 11.2             |
| Hard                           | Over 80        | Over 200                 | Over 14                | Over 20        | over 11.2               |

### 3.6 – Please include details of the location of any water meter serving the property.

This enquiry appears to relate to a plot of land or a recently built property. It is recommended that drainage proposals are checked with the developer.

For your guidance:

- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the water undertakers mentioned in Question 4.1.2.

## Charging

### 4.1.1 – Who is responsible for providing the sewerage services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

### 4.1.2 – Who is responsible for providing the water services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the water undertaker for the area.

### 4.2 – Who bills the property for sewerage services?

The property is not billed for sewerage services.

### 4.3 – Who bills the property for water services?

The property is not billed for water services.

### 4.4 – What is the current basis for charging for sewerage and/or water services at the property?

This enquiry appears to relate to a plot of land or a recently built property.

For your guidance:

- 
- Records indicate that the Water Company does not levy charges to the property. Water and sewerage companies' full charges are set out in their charges schemes which are available from the company free of charge upon request.
- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is [www.ofwat.gov.uk](http://www.ofwat.gov.uk).
- Where charges are given these are based on the data available at the time of the report.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
  - o Watering the garden other than by hand (this includes the use of sprinklers).
  - o Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
  - o A bath with a capacity in excess of 230 litres.
  - o A reverse osmosis unit.

**4.5 – Will the basis for charging for sewerage and water services at the property change as a consequence of a change of occupation?**

Records indicate that this enquiry relates to a plot of land or a recently built property. It is recommended that the charging proposals are checked with the developer.

For your guidance:

- Water and sewerage companies' full charges are set out in their charges schemes which are available from the company free of charge upon request.
- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is [www.ofwat.gov.uk](http://www.ofwat.gov.uk).
- It is policy to meter all new water connections. This would result in charges being levied according to the measured tariff.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
  - o Watering the garden other than by hand (this includes the use of sprinklers).
  - o Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
  - o A bath with a capacity in excess of 230 litres.
  - o A reverse osmosis unit.

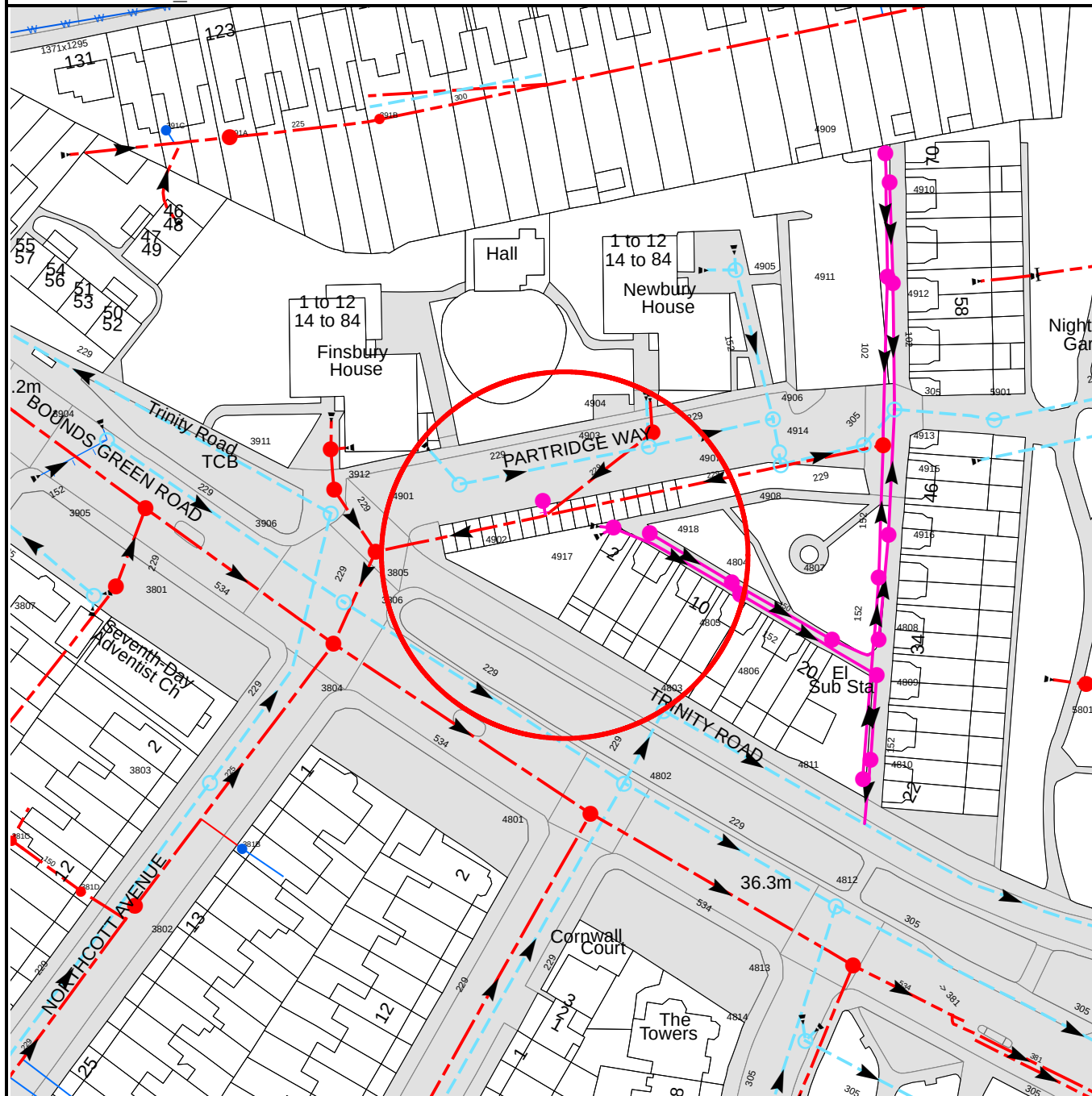
**Payment for this Search**

A charge will be added to your suppliers account.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information.

All prices are in accordance with the standard terms of Property Searches; discounts are available, please contact us on 0845 070 9148 to obtain further details.

# Residential CON29DW Drainage & Water Search Sewer Map-DWS/DWS Standard/2019 4092391



The width of the displayed area is 200m

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.



# Residential Drainage & Water Search Sewer Key

## Public Sewer Pipes (Operated & 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, watercourses or a treatment works.
-  **Combined Sewer:** A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
-  **Trunk Sewer:** A strategic sewer which collects either foul or surface water flow from a number of subsidiary catchments and transfers this flow to a pumping station, river outfall or treatment works.
-  **Storm Overflow Sewer:** A sewer designed to convey excess rainfall to rivers or watercourses so that the flow does not exceed the capacity of normal sewers (which could cause flooding).
-  **Biosolids:** A sewer designed to convey sludge from one treatment works to another.
-  **Vent Pipe:** A section of sewer pipe connected between the top of a sewer and vent column, used to prevent the accumulation of gas in a sewer and thus allowing the system to operate properly.
-  **Rising Main:** A pipe carrying pumped flow under pressure from a low point to a high point on the sewerage network. Line style / colour and direction of fleck indicate sewer purpose and direction of flow within the pipe.
-  **Vacuum:** A foul sewer designed to remove foul sewerage under pressure (vacuum sewers cannot accept direct new connections).
-  **Proposed Foul Sewer**
-  **Proposed Surface Water Sewer**

## Other Sewer Types (Not Operated or Maintained by Thames Water)

-  **Foul Sewer:** Any foul sewer that is not owned by Thames Water.
-  **Surface Water Sewer:** Any surface water sewer that is not owned by Thames Water.
-  **Combined Sewer:** Any combined sewer that is not owned by Thames Water.
-  **Gulley:** A sewer designed to convey surface water from large roads, motorways, etc. to watercourses or to public surface water sewers. These sewers are generally maintained by the relevant highway authority.
-  **Culverted Watercourse:** A watercourse running through a culvert or pipe which is the responsibility of the property owner or the Environment Agency.
-  **Abandoned Sewer:** A disused sewer. Usually filled with cement mixture or removed from the ground.

## Other Symbols

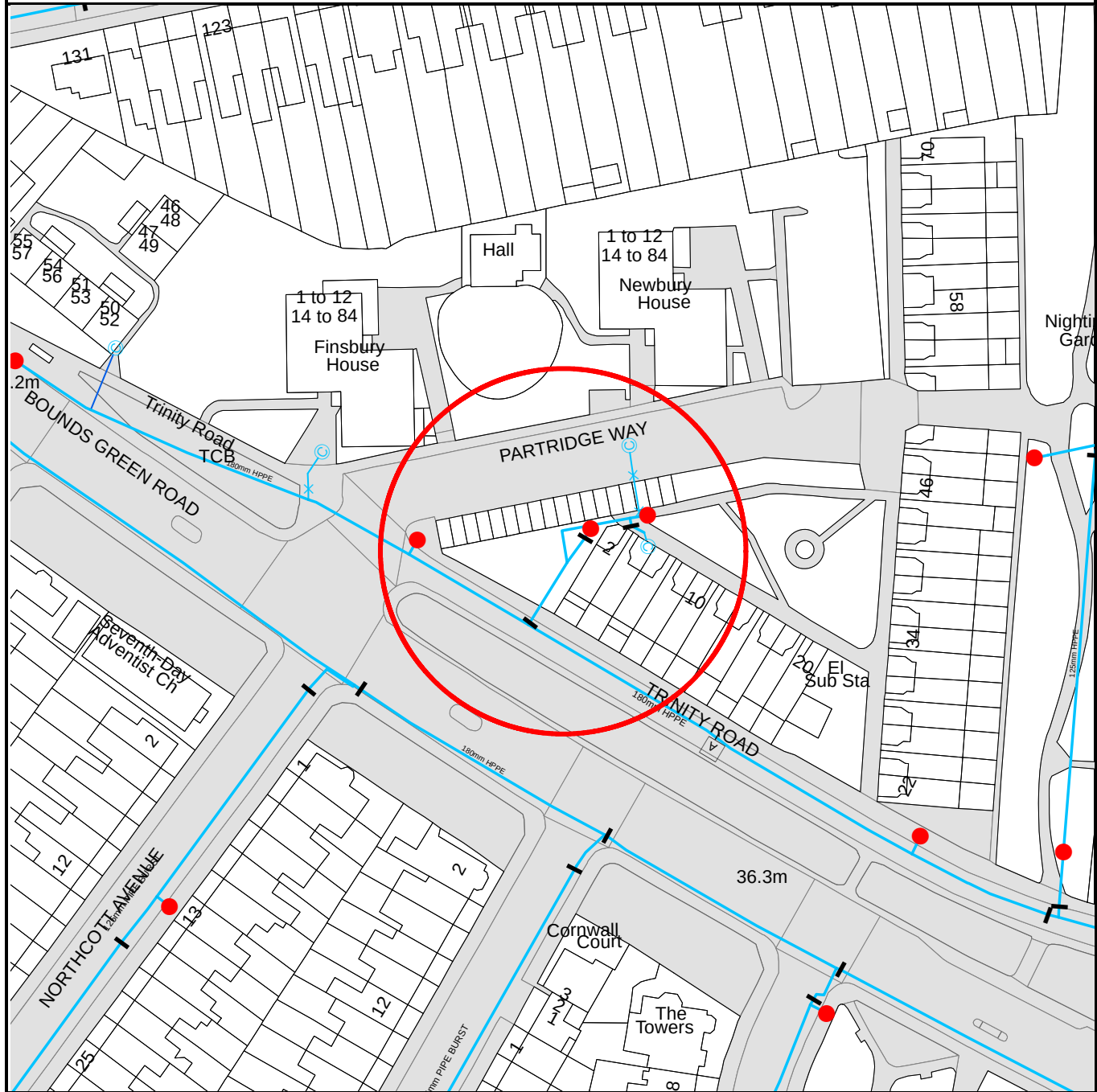
-  **Undefined Ends:** These symbols represent the point at which a pipe continues but no record of its position are currently held by Thames Water. These symbols are rare but may be found on any of the public sewer types.
-  **Public/Private Pumping Station:** Foul or Surface water pumping station.

### Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate 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 level indicates that data is unavailable.
- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. 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 present on the plan, please contact a member of Property Searches on 0845 070 9148.

**Residential CON29DW Drainage & Water Search Water Map-DWS/DWS  
Standard/2019\_4092391**



The width of the displayed area is 200m

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.



# Residential Drainage & Water Search Water Key

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

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## Pipe fittings and controls (Operated & Maintained by Thames Water)

- Hydrant:** A point on a water main which is used by the fire services or operational purposes by Thames Water.
- Meter:** Used to measure water flowing through a water main for domestic metering or operational purposes by Thames Water.
- General Purpose Valve:** Valves allowing control of water flow or pressure within the system.
- Air Valve:** A valve which allows the release of trapped air within a water pipe.

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

- 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 ownership of the pipe.
- Other Water Company or Unknown Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. The mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

## Depth of Water Pipes (Normal Cover)

| 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')        |

### Note:

Most private pipe work and assets i.e. stopcocks, are not shown on our plans (in the past this information had not been recorded).

## Appendix 1 - terms and expressions in this report

“the 1991 Act” means the Water Industry Act 1991**(1)**;

“the 2000 Regulations” means the Water Supply (Water Quality) Regulations 2000**(2)**;

“the 2001 Regulations” means the Water Supply (Water Quality) Regulations 2001**(3)**;

“adoption agreement” means an agreement made or to be made under section 51A(1) or 104(1) of the 1991 Act**(4)**;

“bond” means a surety granted by a developer who is a party to an adoption agreement;

“bond waiver” means an agreement with a developer for the provision of a form of financial security as a substitute for a bond;

“calendar year” means the twelve months ending with 31st December;

“discharge pipe” means a pipe from which discharges are made or are to be made under section 165(1) of the 1991 Act;

“disposal main” means (subject to section 219(2) of the 1991 Act) any outfall pipe or other pipe which—

(a) is a pipe for the conveyance of effluent to or from any sewage disposal works, whether of a sewerage undertaker or of any other person; and

(b) is not a public sewer;

“drain” means (subject to section 219(2) of the 1991 Act) a drain used for the drainage of one building or of any buildings or yards appurtenant to buildings within the same curtilage;

“effluent” means any liquid, including particles of matter and other substances in suspension in the liquid;

“financial year” means the twelve months ending with 31st March;

“lateral drain” means—

(a) that part of a drain which runs from the curtilage of a building (or buildings or yards within the same curtilage) to the sewer with which the drain communicates or is to communicate; or

(b) (if different and the context so requires) the part of a drain identified in a declaration of vesting made under section 102 of the 1991 Act or in an agreement made under section 104 of that Act**(5)**;

“licensed water supplier” means a company which is the holder for the time being of a water supply licence under section 17A(1) of the 1991 Act**(6)**;

“maintenance period” means the period so specified in an adoption agreement as a period of time—

(a) from the date of issue of a certificate by a sewerage undertaker to the effect that a developer has built (or substantially built) a private sewer or lateral drain to that undertaker’s satisfaction; and

(b) until the date that private sewer or lateral drain is vested in the sewerage undertaker;

“map of waterworks” means the map made available under section 198(3) of the 1991 Act**(7)** in relation to the information specified in subsection (1A);

“private sewer” means a pipe or pipes which drain foul or surface water, or both, from premises, and are not vested in a sewerage undertaker;

“public sewer” means, subject to section 106(1A) of the 1991 Act**(8)**, a sewer for the time being vested in a sewerage undertaker in its capacity as such, whether vested in that undertaker—

(a) by virtue of a scheme under Schedule 2 to the Water Act 1989**(9)**;

(b) by virtue of a scheme under Schedule 2 to the 1991 Act**(10)**;

(c) under section 179 of the 1991 Act~~(11)~~; or

(d) otherwise;

“public sewer map” means the map made available under section 199(5) of the 1991 Act~~(12)~~;

“resource main” means (subject to section 219(2) of the 1991 Act) any pipe, not being a trunk main, which is or is to be used for the purpose of—

(a) conveying water from one source of supply to another, from a source of supply to a regulating reservoir or from a regulating reservoir to a source of supply; or

(b) giving or taking a supply of water in bulk;

“sewerage services” includes the collection and disposal of foul and surface water and any other services which are required to be provided by a sewerage undertaker for the purpose of carrying out its functions;

“sewerage undertaker” means the company appointed to be the sewerage undertaker under section 6(1) of the 1991 Act for the area in which the property is or will be situated;

“surface water” includes water from roofs and other impermeable surfaces within the curtilage of the property;

“water main” means (subject to section 219(2) of the 1991 Act) any pipe, not being a pipe for the time being vested in a person other than the water undertaker, which is used or to be used by a water undertaker or licensed water supplier for the purpose of making a general supply of water available to customers or potential customers of the undertaker or supplier, as distinct from for the purpose of providing a supply to particular customers;

“water meter” means any apparatus for measuring or showing the volume of water supplied to, or of effluent discharged from any premises;

“water supplier” means the company supplying water in the water supply zone, whether a water undertaker or licensed water supplier;

“water supply zones” in relation to a calendar year means the names and areas designated by a water undertaker within its area of supply that are to be its water supply zones for that year; and

“water undertaker” means the company appointed to be the water undertaker under section 6(1) of the 1991 Act for the area in which the property is or will be situated.

In this report, references to a pipe, including references to a main, a drain or a sewer, shall include references to a tunnel or conduit which serves or is to serve as the pipe in question and to any accessories for the pipe.

(1) 1991 c. 56.

(2) S.I. 2000/3184. These Regulations apply in relation to England.

(3) S.I. 2001/3911. These Regulations apply in relation to Wales.

(4) Section 51A is inserted by section 92(2) of the Water Act 2003 (c. 37). Section 104(1) is amended by section 96(4) of that Act.

(5) To which there are various amendments made by sections 102 and 104 by section 96 of the Water Act 2003.

(6) Inserted by section 56 of and Schedule 4 to the Water Act 2003.

(7) Subsection (1A) is inserted by section 92(5) of the Water Act 2003.

(8) Section 106(1A) is inserted by section 99 of the Water Act 2003.

(9) 1989 c. 15.

(10) To which there are various amendments made by section 101(1) of and Schedule 8 to the Water Act 2003.

(11) To which there are various amendments made by section 101(1) of and Schedule 8 to the Water Act 2003.

(12) Section 199 is amended by section 97(1) and (8) of the Water Act 2003.

# **CON29DW DRAINAGE & WATER ENQUIRY (DOMESTIC)**

## **TERMS AND CONDITIONS**

**The Customer and the Client are asked to note these terms, which govern the basis on which the drainage and water report is supplied.**

### **Definitions**

"Apparatus" means the public assets shown on the Company's map keys relevant to the Report.

"Client" means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.

"Company" means the company who produces the Report, being Thames Water Utilities Limited, a company registered in England and Wales with company number 02366661 and whose registered office is at Clearwater Court, Vastern Road, Reading, Berkshire, RG1 8DB.

"Customer" means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.

"Order" means any request completed by the Customer requesting the Report from the Company.

"Property" means the address or location supplied by the Customer in the Order.

"Report" means the drainage and/or water report prepared by the Company in respect of the Property, including any maps provided as part of such reports.

### **1. Agreement**

1.1 The Company agrees to supply the Report to the Customer and the Client subject to these terms and conditions. The scope and limitations of the Report are described in clause 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client.

1.2 The Customer and the Client agree that the placing of an Order for a Report and the subsequent provision of a copy of the Report to the Client indicates their acceptance of these terms.

### **2. The Report**

Whilst the Company will use reasonable care and skill in producing the Report, it is provided to the Customer and the Client on the basis that they acknowledge and agree to the following:-

2.1 The information contained in the Report can change on a regular basis so the Company cannot be responsible to the Customer or the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.

2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as a substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.

2.3 The information contained in the Report is based upon the accuracy of the address supplied by the Customer or Client when placing the Order.

2.4 The Report provides information as to the indicative location and connection of existing services and other information in relation to drainage and water enquiries and should not be relied on for any other purpose.

2.5 The Report is produced only for use in relation to individual domestic property transactions which require the provision of drainage and water information and cannot be used for commercial development of domestic properties, development of land or commercial properties for intended occupation by third parties. Where a Report is required for commercial development of domestic properties, development of land or commercial properties for intended occupation by parties, the Customer can order a different report, and different terms shall apply.

2.6 The customer shall only use the Report for the purpose for which it is supplied in accordance with these terms.

2.7 In providing the Customer with the Report, the Company shall comply with the Drainage & Water Searches Network (DWSN) Standards.

2.8 In providing the Customer with the Report, the Company shall comply with the Search Code.

### **3. Disclaimers**

3.1 Without prejudice to any other terms set out herein, the Company accepts responsibility for any inaccuracy in the location of Apparatus, or missing Apparatus contained in the maps within the Report

provided that such inaccuracies or errors arise as a direct result of the negligence of the Company and the existence of which the Company should reasonably have been aware.

3.2 For the purposes of the Report, the Company will not seek to rely on any statements and/or disclaimer shown on any maps which seeks to limit its liability in relation to the accuracy and/or location of Apparatus where any inaccuracies or errors arise as a direct result of the negligence of the Company and the existence of which the Company should reasonably have been aware.

### **4. Liability**

4.1 The Company shall not be liable to the Customer or Client in contract, tort, negligence, breach of statutory duty, misrepresentation or otherwise for any inaccuracies, mistakes or omissions in the Report unless any such liability arises as a direct consequence of the Company's negligence and the existence of which the Company should reasonably have been aware.

4.2 Notwithstanding clause 4.1 above, the Company shall accept liability for (a) death or personal injury arising from its negligence, (b) fraud or fraudulent misrepresentation, and (c) any other liability which cannot be excluded or limited by law.

4.3 Subject to clause 4.2 above, the Company's total liability to the Customer or Client, whether for breach of contract, tort, negligence, breach of statutory duty, misrepresentation or otherwise, arising under or in connection with these terms and conditions and/or the provision of a Report shall be limited to £10 million in aggregate.

### **5. Copyright and Confidentiality**

5.1 The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of the Company and/or its licensors. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided in these terms.

5.2 The Customer or Client is entitled to make copies of the Report for their own internal purposes, but may only copy Ordnance Survey mapping or data contained in or attached to the Report if they have an appropriate licence from the originating source of that mapping or data.

5.3 The Customer and the Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.

5.4 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.

5.5 The enquiries in the Report are protected by copyright by the Law Society of 113 Chancery Lane, London WC2A 1PL and must not be used for any purpose outside the context of the Report.

5.6 The Customer and the Client agree to indemnify the Company against any losses, costs, claims and damage suffered by the Company as a result of any breach by either of them of the terms of clauses 5.1 to 5.5 inclusive.

### **6. Payment**

6.1 Unless otherwise stated, all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by the Company, without any set off, deduction or counterclaim. Unless otherwise agreed between the parties, the Company must receive payment for the Report in full before the Report is produced. Where the parties agree that payment is not required in advance, the Customer must pay for the Report in full within 14 days of the date of the invoice, unless otherwise agreed in writing between the parties.

### **7. Cancellation Rights**

#### **As a consumer**

7.1 Where the Customer is an individual consumer (and not acting for purposes wholly or mainly relating to his or her trade, business, craft or profession), the Customer has specific legal rights relating to cancellation of any Order the Customer may place. The Customer may cancel his or her Order at any time within 14 days after the day on which the contract is entered into ("**Cancellation Period**").

**CON29DW DRAINAGE & WATER ENQUIRY (DOMESTIC)**  
**TERMS AND CONDITIONS**

- 7.2 To exercise the right to cancel, the Customer must inform the Company in writing of his or her decision to cancel this contract.
- 7.3 Where the Customer is ordering a Report as a consumer, due to the Customer's cancellation rights, the Company will not process the Order or provide the Report to the Customer before the end of the Cancellation Period unless the Customer provides his or her express consent and acknowledges that he or she will lose the right to cancel the contract under regulation 29(1) of the Consumer Contracts (Information, Cancellation, and Additional Charges) Regulations 2013
- 7.4 In addition to these rights, where the Company is able to, it will cancel any Order in accordance with its cancellation policy, which can be found on the Company's website.

**As a business**

- 7.5 The Cancellation Period does not apply to the Customer's Order if the Customer is placing the Order wholly or mainly for purposes relating to their trade, business, craft or profession.
- 7.6 If the Customer cancels the Order other than in accordance with this clause the Customer may be liable for fees as detailed in the Company's cancellation policy which can be found on the Company's website.

**8. Complaints**

- 8.1 The Company's complaints procedure is available on the Company's website.
- 8.2 If the Customer follows the Company's complaints procedure but is dissatisfied with the response, the Customer may refer the complaint for consideration under The Property Ombudsman Scheme (TPOs). 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).

**9. General**

- 9.1 These terms are the only terms and conditions that shall apply to any Order and the provision of a Report by the Company to the Customer and shall constitute the entire agreement between the Customer and the Company and supersede, replace and extinguish any previous arrangement, understanding or agreement between the parties relating to such Report.
- 9.2 In the event of any conflict of inconsistency between any information on the Company's website describing the features of the Report and these terms, then these terms shall prevail.
- 9.3 Where the Customer is acting wholly or mainly in the normal course of his or her trade, business, craft or profession, the Client is entitled to the benefit of these terms. Save as provided in this clause 9.3, it is not intended that any other person who is not a party to these terms has any right to enforce any term of these terms under the Contracts (Rights of Third Parties) Act 1999.
- 9.4 If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.
- 9.5 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.
- 9.6 Nothing in these terms and conditions shall in any way restrict the Customer or the Client's statutory or any other rights of access to the information contained in the Report.

**These Terms & Conditions are available in larger print for those with impaired vision**

## 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 14 days from due 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. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. 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'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. 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 not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

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 0121 345 1000 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                                                                                                           | Cheque                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Call <b>0845 070 9148</b> quoting your invoice number starting CBA or ADS / OSS. | Account number <b>90478703</b><br>Sort code <b>60-00-01</b><br>A remittance advice must be sent to:<br><b>Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.</b><br>or email <a href="mailto:ps.billing@thameswater.co.uk">ps.billing@thameswater.co.uk</a> | By calling your bank and quoting:<br>Account number <b>90478703</b><br>Sort code <b>60-00-01</b><br>and your invoice number | Made payable to ' <b>Thames Water Utilities Ltd</b> '<br>Write your Thames Water account number on the back.<br>Send to:<br><b>Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW</b><br>or by DX to <b>151280 Slough 13</b> |

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

## Search Code



### **IMPORTANT CONSUMER PROTECTION INFORMATION**

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

#### **The Search Code:**

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

#### **The Code's core principles**

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

#### **Complaints**

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if the Ombudsman finds that you have suffered actual loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the code.

**Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.**

#### **TPOs Contact Details**

The Property Ombudsman scheme  
Milford House  
43-55 Milford Street  
Salisbury  
Wiltshire SP1 2BP  
Tel: 01722 333306  
Fax: 01722 332296  
Web site: [www.tpos.co.uk](http://www.tpos.co.uk)  
Email: [admin@tpos.co.uk](mailto:admin@tpos.co.uk)

You can get more information about the PCCB from [www.propertycodes.org.uk](http://www.propertycodes.org.uk)

**PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE**

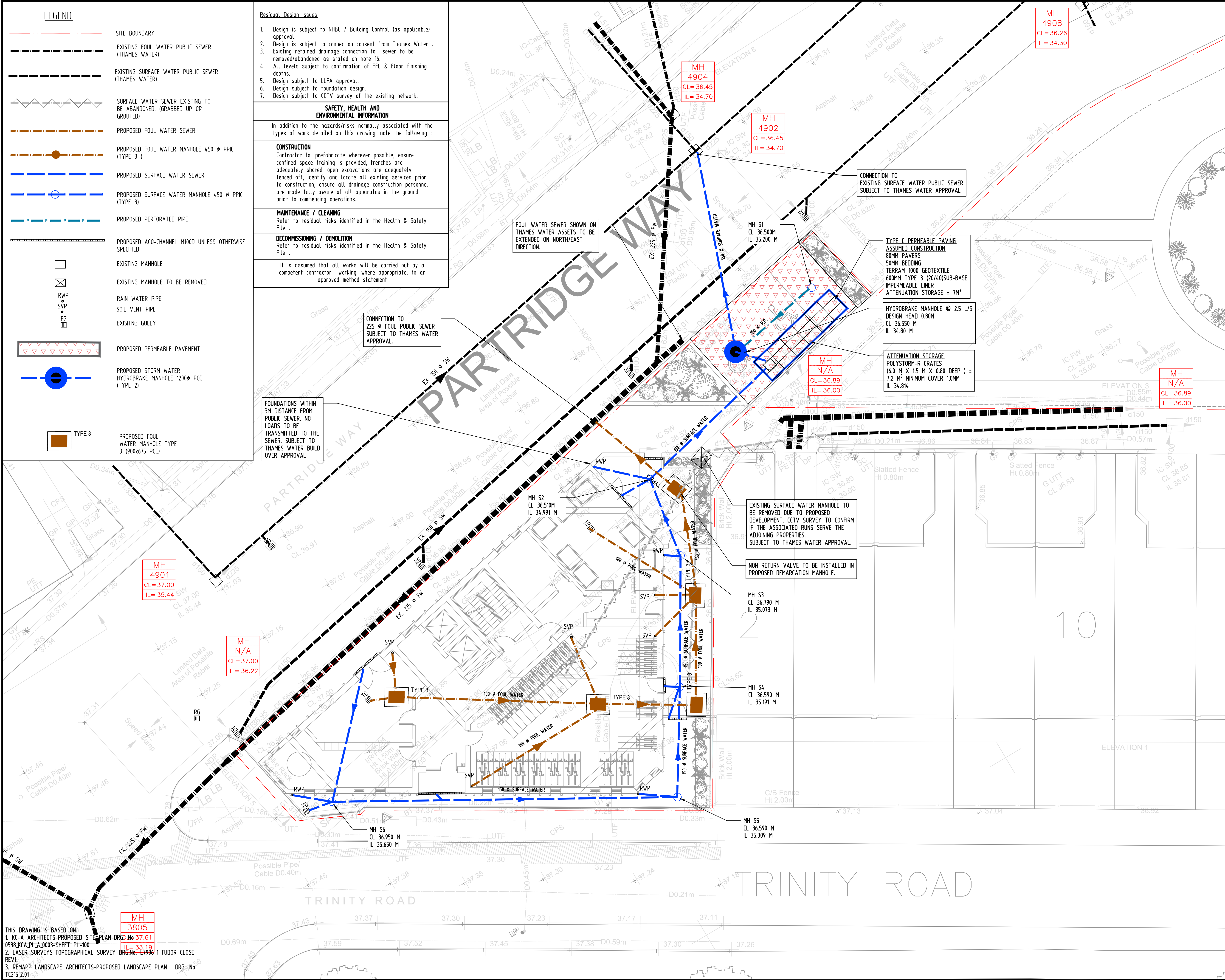
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## Appendix C - Surface Water Run-off Calculations

|                                                                                                                   |                                       |                          |                                         |                     |                                                          |         |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------|--------------------------|-----------------------------------------|---------------------|----------------------------------------------------------|---------|
| Patridge Way,Haringey, N22 8DW                                                                                    |                                       |                          |                                         |                     | Ellis and Moore Consulting Engineers                     |         |
| Surface Water Run-Off Calculation:<br>SW run-off from Pre-Developed Site:<br>Impermeable Area =572 m <sup>2</sup> |                                       |                          |                                         |                     | Date:                                                    | Oct-20  |
|                                                                                                                   |                                       |                          |                                         |                     | Job:                                                     | 19125-P |
|                                                                                                                   |                                       |                          |                                         |                     | Engineer:                                                | PK      |
|                                                                                                                   |                                       |                          |                                         |                     | Checked                                                  |         |
| <b>Formula for Calculating Run-off from impermeable Areas:</b>                                                    |                                       |                          |                                         |                     |                                                          |         |
| Q = 2.78 C i A                                                                                                    |                                       |                          |                                         |                     | CIRIA C697 'The SuDS Manual'                             |         |
| C = Run-off Coefficient                                                                                           |                                       |                          |                                         |                     | Section 4.3.3                                            |         |
| i = rainfall intensity - taken as 50mm/hr for an average<br>1 in 2 year storm event                               |                                       |                          |                                         |                     |                                                          |         |
| A = Impermeable area (hectares)                                                                                   |                                       |                          |                                         |                     |                                                          |         |
| <b>Hydrological Growth Curve Factors:</b>                                                                         |                                       |                          |                                         |                     | CIRIA C697: Figure 4.3 &<br>Table 4.3 Hydrometric Area 6 |         |
| 1 year Factor = 0.85                                                                                              |                                       |                          |                                         |                     |                                                          |         |
| 30 year Factor = 2.30                                                                                             |                                       |                          |                                         |                     |                                                          |         |
| 100 year Factor = 3.19                                                                                            |                                       |                          |                                         |                     |                                                          |         |
| <b>Run-off from impermeable Surfaces:</b>                                                                         |                                       |                          |                                         |                     |                                                          |         |
| Surface                                                                                                           | Area                                  | Permeability Coefficient | Storm Event                             | Growth Curve Factor | Surface Water Run-off Discharge                          |         |
|                                                                                                                   | (ha)                                  | (C)                      | (1 in x yr)                             |                     | Rate                                                     |         |
|                                                                                                                   |                                       |                          |                                         |                     | l/s                                                      |         |
| Building areas and hard standing                                                                                  | 0.0572                                | 0.9                      | 1                                       | 0.85                | 6.08                                                     |         |
|                                                                                                                   | 0.0572                                | 0.9                      | 30                                      | 2.30                | 16.46                                                    |         |
|                                                                                                                   | 0.0572                                | 0.9                      | 100                                     | 3.19                | 22.83                                                    |         |
|                                                                                                                   | 0.0572                                | 0.9                      | 100+40%CC                               | 3.19                | 31.96                                                    |         |
| <b>Summary of Existing Run-off:</b>                                                                               |                                       |                          |                                         |                     |                                                          |         |
| Storm Event                                                                                                       | Discharge from permeable area of site |                          | Discharge from impermeable area of site |                     | Total Discharge from Site                                |         |
| (1 in x yr)                                                                                                       | l/s                                   |                          | l/s                                     |                     | l/s                                                      |         |
| 1                                                                                                                 | 0.00                                  |                          | 6.08                                    |                     | 6.08                                                     |         |
| 30                                                                                                                | 0.00                                  |                          | 16.46                                   |                     | 16.46                                                    |         |
| 100                                                                                                               | 0.00                                  |                          | 22.83                                   |                     | 22.83                                                    |         |
| 100+40%CC                                                                                                         | 0.00                                  |                          | 31.96                                   |                     | 31.96                                                    |         |

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## Appendix D - Proposed Drainage Layout



**notes**  
**DO NOT SCALE FROM THIS DRAWING**

- Only drawings marked as 'Construction' Drawing should be used for construction. Any other drawings used for construction purposes may not represent the finalized design and will be used at the contractors own risk.
- All dimensions are in mm unless stated otherwise.
- This drawing is to be read in conjunction with all relevant architectural, structural and civil drawings/documents relating to this site.
- Do not scale from this drawing. All levels and dimensions to be checked on site prior to works starting. Notify the project manager of any discrepancy.
- All private drainage works to comply with current Building Regulations Part H and BS EN 752.
- Workmanship on site shall accord with the principles of BS8000-14 'Workmanship on Building Sites. Code of Practice for Below Ground Drainage' and general good working practices.
- Before commencing any sewer or drainage works, the Contractor's ground worker must satisfy themselves of actual levels and conditions of existing sewers.
- Depth and location of existing services to be traced prior to commencing any drainage excavations.
- Drainage pipelines to be laid under roads, parking bays and other trafficked areas shall be either:  
a) Vitrified clayware to BS EN295.  
b) Concrete to BS5911 Class M.
- All private drains that run under non trafficked areas, to be laid to the invert levels shown using flexibly jointed pipes, either UPVC to BS 4460 and BS 5481 or vitrified clayware to BS EN 295.
- All rainwater pipe outfalls shall be 100Ø, all soil vent pipes / foul connection outfalls leaving buildings shall be 100Ø.
- Buried concrete shall be suitable for Class DS-3 and AC3 conditions in accordance with BRE Special Digest 1.
- Precast concrete used in the construction of foul sewers and chambers to be Sulphate Resisting to Class 4 conditions.
- Private manhole and inspection chambers located under trafficked areas to have a concrete surround.
- Where private manholes and catchpits are constructed using precast concrete circular rings, they are to be constructed to BS 5911-200.
- All disused, abandoned or redundant drainage to be removed/sealed as stated in Part H of the Building Regulations 2002 edition, Appendix H1-B.
- All abandoned, buried obstructions encountered during the construction of Highway & Drainage Works are to be broken out to bed level of drains and sewers, and to the formation of car parks and drives etc., and to sufficient depth to allow for laying service company's mains and services.
- Access panels are to be provided to all rainwater pipes, a maximum of 600mm above finished ground level.
- All soil vent pipe locations shown on this drawing are indicative only. Reference should be made to the architects drawings for accurate location.
- All foul water connections from dwellings to sewer to be laid at a minimum 1:40 gradient unless indicated otherwise on this drawing. All WC's should be on the main drainage run and not branching onto another run.
- All cover and invert levels are shown in metres, all pipe diameters are shown in millimetres.
- All ground levels for manholes are approximate and should be confirmed onsite prior to construction. Actual ground levels should be taken from the landscaping layout.

| rev. | description         | date     | By | Chk |
|------|---------------------|----------|----|-----|
| A    | Issued for Approval | 07-06-21 | PK | CLM |
| -    | Issued for Approval | 05-10-20 | PK | CLM |

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**PRELIMINARY**

| scale     | date     |
|-----------|----------|
| 1:100 @A1 | 28/09/20 |

| drawn | checked |
|-------|---------|
| PK    | CLM     |

| project                                      | drawing title                   |
|----------------------------------------------|---------------------------------|
| PATRIDGE WAY<br>HARRINGAY, LONDON<br>N22 8DW | BELOW GROUND DRAINAGE<br>LAYOUT |

| drawing no. | revision |
|-------------|----------|
| 19125/P/300 | A        |

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## Appendix E – British Geological Society Borehole

| <b>Contract Name</b> HARINGEY                              |              |               |          |           |                        | <b>Borehole No.</b> 1               |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|------------------------------------------------------------|--------------|---------------|----------|-----------|------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Method of boring    Light cable percussion    Ground level |              |               |          |           |                        | 3013<br>9111                        |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| Diameter    200 mm nominal                                 |              |               |          |           |                        | Start    2.7.82<br>Finish    5.7.82 |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| Daily progress                                             | Water levels | In-situ tests | Sam-ples | Depth (m) | Reduced level (m O.D.) | Thickness (m)                       | Description of Strata                                                                                                                                       | Legend                                                                                                                                                                                                                                                                              |      |                                                                                                                                                                                                                                            |  |
| 2/7                                                        |              |               | J        | 0.30      |                        | 0.30                                | Topsoil                                                                                                                                                     | <div style="display: flex; align-items: center;"> <div style="width: 20px; height: 20px; border: 1px solid black; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px);"></div> <div style="margin-left: 5px;">Made Ground</div> </div> |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               |          | 0.55      |                        | 0.25                                | Light brown clay with traces of brick                                                                                                                       |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | J        |           |                        | 1.70                                | Firm becoming stiff brown silty CLAY with occasional small pockets and partings of orange-brown fine sand and silts some root fibres and calcareous nodules |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | J        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | J        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | U        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               |          |           |                        | U                                   |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               |          |           |                        |                                     | 2.25                                                                                                                                                        |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               |          |           |                        | JU                                  |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     | 8.75 | Stiff becoming very stiff brown fissured silty CLAY with small pockets and partings of brown fine sand and silts, occasional roots to 5 m and pockets of selenite crystals. Claystone bands between 5.00 m to 5.30 m and 9.50 m to 9.60 m. |  |
|                                                            |              |               | U        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | U        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | U        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | JU       |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | J        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
|                                                            |              |               | U        |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| J                                                          |              |               |          |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| U                                                          |              |               |          |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| J                                                          |              |               |          |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| U                                                          |              |               |          |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |
| JU                                                         |              |               |          |           |                        |                                     |                                                                                                                                                             |                                                                                                                                                                                                                                                                                     |      |                                                                                                                                                                                                                                            |  |

**Notes** Contd/..

Clearing buried services 2 hours

7.00 m Water level observation tubing installed.

|                     |                        |                       |
|---------------------|------------------------|-----------------------|
| Terresearch Limited | Report No.    S.32/545 | Appendix 1    Sheet 1 |
|---------------------|------------------------|-----------------------|

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## Appendix F – Hydraulic Calculations

|                                                                       |                                 |                                                                                     |
|-----------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------|
| Ellis and Moore Consulting Engineers Ltd                              |                                 | Page 1                                                                              |
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| XP Solutions                                                          | Network 2017.1.2                |                                                                                     |

### STORM SEWER DESIGN by the Modified Rational Method

#### Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

|                                      |        |                                       |       |
|--------------------------------------|--------|---------------------------------------|-------|
| Return Period (years)                | 2      | PIMP (%)                              | 100   |
| M5-60 (mm)                           | 20.700 | Add Flow / Climate Change (%)         | 0     |
| Ratio R                              | 0.438  | Minimum Backdrop Height (m)           | 0.200 |
| Maximum Rainfall (mm/hr)             | 500    | Maximum Backdrop Height (m)           | 1.500 |
| Maximum Time of Concentration (mins) | 30     | Min Design Depth for Optimisation (m) | 1.200 |
| Foul Sewage (l/s/ha)                 | 0.000  | Min Vel for Auto Design only (m/s)    | 1.00  |
| Volumetric Runoff Coeff.             | 0.750  | Min Slope for Optimisation (1:X)      | 500   |

Designed with Level Soffits

#### Time Area Diagram for Storm

| Time<br>(mins) | Area<br>(ha) | Time<br>(mins) | Area<br>(ha) |
|----------------|--------------|----------------|--------------|
| 0-4            | 0.034        | 4-8            | 0.005        |

Total Area Contributing (ha) = 0.039

Total Pipe Volume (m³) = 1.120

#### Network Design Table for Storm

| PN    | Length<br>(m) | Fall<br>(m) | Slope<br>(1:X) | I.Area<br>(ha) | T.E.<br>(mins) | Base<br>Flow (l/s) | k<br>(mm) | HYD<br>SECT | DIA<br>(mm) | Section Type | Auto<br>Design                                                                        |
|-------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|---------------------------------------------------------------------------------------|
| 1.000 | 19.947        | 0.341       | 58.5           | 0.007          | 5.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |
| 1.001 | 6.898         | 0.118       | 58.5           | 0.010          | 0.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |
| 1.002 | 6.898         | 0.118       | 58.5           | 0.006          | 0.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |
| 1.003 | 4.798         | 0.082       | 58.5           | 0.008          | 0.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |
| 1.004 | 8.582         | 0.177       | 48.5           | 0.004          | 0.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |
| 1.005 | 2.078         | 0.048       | 43.3           | 0.000          | 0.00           | 0.0                | 0.600     | o           | 150         | Pipe/Conduit |  |

#### Network Results Table

| PN    | Rain<br>(mm/hr) | T.C.<br>(mins) | US/IL<br>(m) | Σ I.Area<br>(ha) | Σ Base<br>Flow (l/s) | Foul<br>(l/s) | Add Flow<br>(l/s) | Vel<br>(m/s) | Cap<br>(l/s) | Flow<br>(l/s) |
|-------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| 1.000 | 74.56           | 5.25           | 35.650       | 0.007            | 0.0                  | 0.0           | 0.0               | 1.32         | 23.3         | 1.5           |
| 1.001 | 74.02           | 5.34           | 35.309       | 0.017            | 0.0                  | 0.0           | 0.0               | 1.32         | 23.3         | 3.4           |
| 1.002 | 73.48           | 5.43           | 35.191       | 0.023            | 0.0                  | 0.0           | 0.0               | 1.32         | 23.3         | 4.6           |
| 1.003 | 73.11           | 5.49           | 35.073       | 0.031            | 0.0                  | 0.0           | 0.0               | 1.32         | 23.3         | 6.1           |
| 1.004 | 72.52           | 5.59           | 34.991       | 0.035            | 0.0                  | 0.0           | 0.0               | 1.45         | 25.6         | 6.8           |
| 1.005 | 72.38           | 5.61           | 34.814       | 0.035            | 0.0                  | 0.0           | 0.0               | 1.53         | 27.1         | 6.8           |



|                                                                       |                                 |                                                                                     |
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Online Controls for Storm

Hydro-Brake® Optimum Manhole: 6, DS/PN: 1.006, Volume (m³): 2.1

|                                   |                            |
|-----------------------------------|----------------------------|
| Unit Reference                    | MD-SHE-0078-2500-0800-2500 |
| Design Head (m)                   | 0.800                      |
| Design Flow (l/s)                 | 2.5                        |
| Flush-Flo™                        | Calculated                 |
| Objective                         | Minimise upstream storage  |
| Application                       | Surface                    |
| Sump Available                    | Yes                        |
| Diameter (mm)                     | 78                         |
| Invert Level (m)                  | 34.766                     |
| Minimum Outlet Pipe Diameter (mm) | 100                        |
| Suggested Manhole Diameter (mm)   | 1200                       |

| Control Points            | Head (m) | Flow (l/s) |
|---------------------------|----------|------------|
| Design Point (Calculated) | 0.800    | 2.5        |
| Flush-Flo™                | 0.236    | 2.5        |
| Kick-Flo®                 | 0.508    | 2.0        |
| Mean Flow over Head Range | -        | 2.2        |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100     | 2.2        | 1.200     | 3.0        | 3.000     | 4.6        | 7.000     | 6.9        |
| 0.200     | 2.5        | 1.400     | 3.2        | 3.500     | 4.9        | 7.500     | 7.1        |
| 0.300     | 2.5        | 1.600     | 3.4        | 4.000     | 5.3        | 8.000     | 7.3        |
| 0.400     | 2.4        | 1.800     | 3.6        | 4.500     | 5.6        | 8.500     | 7.5        |
| 0.500     | 2.1        | 2.000     | 3.8        | 5.000     | 5.8        | 9.000     | 7.7        |
| 0.600     | 2.2        | 2.200     | 4.0        | 5.500     | 6.1        | 9.500     | 7.9        |
| 0.800     | 2.5        | 2.400     | 4.1        | 6.000     | 6.4        |           |            |
| 1.000     | 2.8        | 2.600     | 4.3        | 6.500     | 6.6        |           |            |

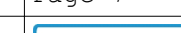




|                                                                       |                                 |                                                                                     |
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)  
for Storm

| PN    | US/MH<br>Name | Surcharged   |                | Flooded        |                   | Pipe          |  | Status | Level<br>Exceeded |
|-------|---------------|--------------|----------------|----------------|-------------------|---------------|--|--------|-------------------|
|       |               | Depth<br>(m) | Volume<br>(m³) | Flow /<br>Cap. | Overflow<br>(l/s) | Flow<br>(l/s) |  |        |                   |
| 1.006 | 6             | -0.001       | 0.000          | 0.11           |                   | 2.4           |  | OK     |                   |

|                                                                       |                                 |                                                                                     |
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### 30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

### Simulation Criteria

|                             |   |                              |   |
|-----------------------------|---|------------------------------|---|
| Number of Input Hydrographs | 0 | Number of Storage Structures | 2 |
| Number of Online Controls   | 1 | Number of Time/Area Diagrams | 0 |
| Number of Offline Controls  | 0 | Number of Real Time Controls | 0 |

|                |                   |             |       |
|----------------|-------------------|-------------|-------|
| Rainfall Model | FSR               | Ratio R     | 0.435 |
| Region         | England and Wales | Cv (Summer) | 0.750 |
| M5-60 (mm)     | 20.700            | Cv (Winter) | 0.840 |

|                          |                                |
|--------------------------|--------------------------------|
| Profile(s)               | Summer and Winter              |
| Duration(s) (mins)       | 15, 30, 60, 120, 180, 240, 360 |
| Return Period(s) (years) | 1, 30, 100                     |
| Climate Change (%)       | 0, 0, 40                       |

| PN    | US/MH<br>Name | Surcharged   | Flooded        | Flow /<br>Cap. | Overflow<br>(l/s) | Pipe          | Status     | Level<br>Exceeded |
|-------|---------------|--------------|----------------|----------------|-------------------|---------------|------------|-------------------|
|       |               | Depth<br>(m) | Volume<br>(m³) |                |                   | Flow<br>(l/s) |            |                   |
| 1.000 | 1             | -0.115       | 0.000          | 0.12           |                   | 2.7           | OK         |                   |
| 1.001 | 2             | -0.091       | 0.000          | 0.33           |                   | 6.5           | OK         |                   |
| 1.002 | 3             | -0.054       | 0.000          | 0.33           |                   | 6.5           | OK         |                   |
| 1.003 | 3             | 0.061        | 0.000          | 0.49           |                   | 8.7           | SURCHARGED |                   |
| 1.004 | 4             | 0.140        | 0.000          | 0.43           |                   | 9.6           | SURCHARGED |                   |
| 1.005 | 5             | 0.310        | 0.000          | 0.18           |                   | 2.5           | SURCHARGED |                   |
| 2.000 | 6             | -0.027       | 0.000          | 0.00           |                   | 0.0           | OK         |                   |

|                                                                       |                                 |                                                                                     |
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)  
for Storm

|           |              | <b>Surcharged</b> | <b>Flooded</b> |                        | <b>Pipe</b>  |              |               |
|-----------|--------------|-------------------|----------------|------------------------|--------------|--------------|---------------|
|           | <b>US/MH</b> | <b>Depth</b>      | <b>Volume</b>  | <b>Flow / Overflow</b> | <b>Flow</b>  |              | <b>Level</b>  |
| <b>PN</b> | <b>Name</b>  | <b>(m)</b>        | <b>(m³)</b>    | <b>Cap.</b>            | <b>(l/s)</b> | <b>(l/s)</b> | <b>Status</b> |
| 1.006     | 6            | 0.357             | 0.000          | 0.11                   |              | 2.5          | SURCHARGED    |



