FRA & SuDS Strategy Statement

FRA20202.1A

The PES

Conex House,

148 Field End Rd,

Ruislip Pinner

HA5 1RJ FRA

13-05-2024

Prepared for:

Contents

1. Executive Summary

The PES has been commissioned to produce a FRA and SuDS Strategy statement in support of a planning application for a proposal at Conex House, 148 Field End Rd, Ruislip Pinner HA5 1RJ for the internal conversion of the existing retained building from commercial / office to residential with 6 No units.

This FRA and SuDS Strategy statement has been prepared as a desk top study based on the architectural drawings supplied and gathered data available within the public domain. It summarises the drainage / SuDS strategy solution for the proposed refurbishment / redevelopment project and demonstrates that the development complies with planning policy on flood risk – National Planning Policy Framework (NPPF) and supports Planning Practice Guidance (PPG) as well as the London Borough of Hillingdon Policies and guidelines including associated SuDS requirements.

The design process began with a review and analysis of the proposed development and the existing site conditions with respect to surface water drainage and flood risk. This included a study of both the hydrology and hydrogeology of the site. There is a low risk of flooding from all sources to the site of the proposed redevelopment / refurbishment works.

The proposed internal refurbishment / redevelopment of the Connex House property is for the conversion and change of use from commercial office space to residential units. There will therefore be no change in the built footprint and impermeable surfaces as a result of the proposed development. The rate of surface water runoff from the proposed development will be the same as the existing rate.

Given that the proposed development is for an internal changes / refurbishment, there is limited scope to implement large scale SuDS on site. It is recommended that the proposed redevelopment discharges surface water runoff via the existing drainage system associated with the existing development.

Rainwater runoff flows from the various roof levels and existing external surfaces will drain as it currently does.

Surface water from the site is to continue to utilise the Thames Water surface water sewer as existing.

The management and a maintenance regime for the surface water management of the proposed refurbishment will continue in accordance with the existing methods and procedures.

2. Introduction

Brief

The PES has been commissioned to produce a FRA and SuDS Strategy statement in support of a planning application for a proposal at Conex House, 148 Field End Rd, Ruislip Pinner HA5 1RJ for the internal conversion of the existing retained building from commercial / office to residential with 6 No units.

This desk study report is produced to identify an appropriate SuDS for the new development that mirrors the natural drainage pattern of the development site. The SuDS will provide a surface water management solution to reduce the surface water run off that leaves the site and show that the proposed development will not result in an increase to the risk of flooding on or off site. Where required it recommends mitigation to, any potential flooding issues associated with the proposed development. The SuDS solution follows the requirements of the Environment Agency (EA), London Borough (LB) of Hillingdon, the London Plan and Thames Water.

The SuDS solution is developed using information supplied by others. The PES in good faith has used it as deemed accurate, without guarantee but as best information available at the time of completion of the SuDS design and associated report.

The purpose of this report is to summarise the SuDS strategy design process for the proposed development and demonstrate that the development complies with national planning policy on flood risk as well as the LB of Hillingdon Policy, the London Plan and guidelines including associated SuDS requirements.

Report Structure

These works are discussed in the following sections. The structure of this report is summarised as follows:

- Section 3: Describes site conditions with respect to topography, hydrology, hydrogeology, drainage and potential design proposals as well as identifying National and local planning Policies and guidance;
- Section 4: Provides a commentary on how flood risk from a range of potential sources may or may not constrain development proposals and influence the SuDS solution;
- Section 5: Provides a surface water drainage statement;
- Section 6: Provides a management and a maintenance regime statement for the surface water drainage/ SuDS surface water management;
- Section 7: Presents a summary of the report and identifies the main conclusions that can be drawn.

3. Site Conditions and Planning Policy

Existing Conditions

The Conex House property is a three storey above ground commercial / office building set in a mixed commercial / residential urban area. It sits between existing residential building blocks of apartments.

There are no drainage ditches or watercourses on or nearby the development site.

The existing building is connected to separate surface and foul water sewer networks located within the Field End Road highway in front of the building.

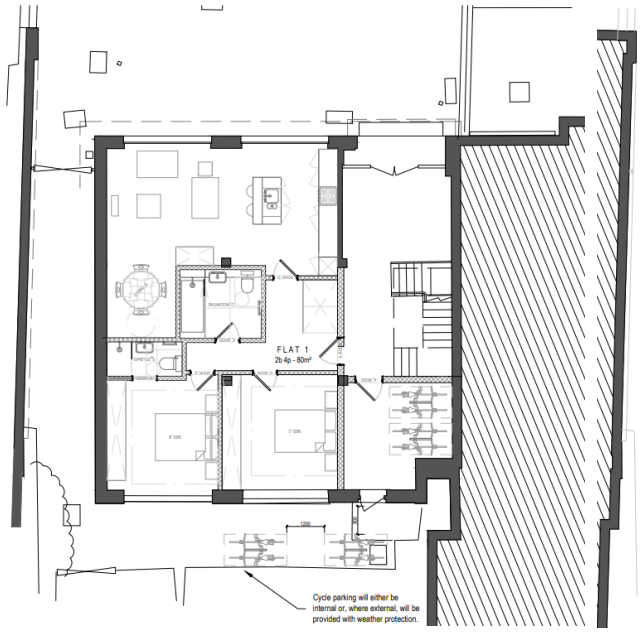
Proposed development

The proposed refurbishment / redevelopment of the Conex House property is for the change of use from a commercial office block to an apartment block for residential usage with 6 Flats.

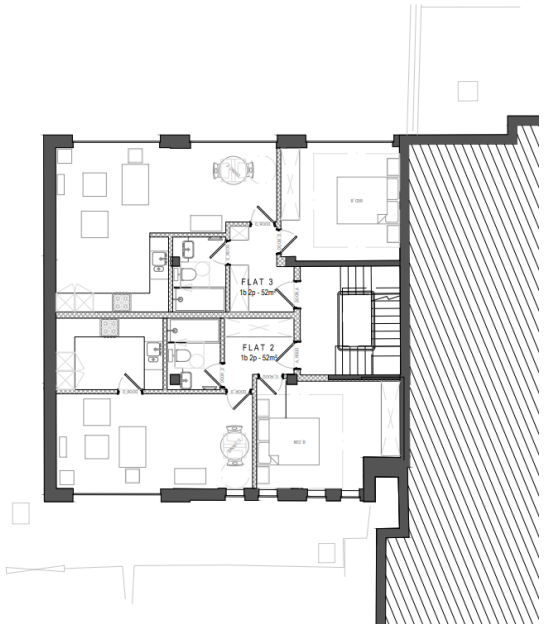
The site location plan can be seen in Figure 1 below.

Figure 1- Site Location Plan for Conex House, 148 Field End Rd, Ruislip Pinner HA5 1RJ

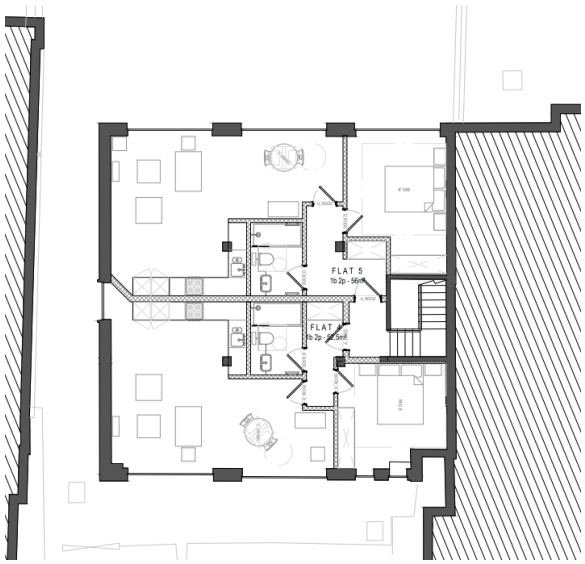
The proposed ground, first & second floor & roof plan and existing / proposed front & rear elevation for the refurbishment works at Conex House, 148 Field End Rd, Ruislip Pinner HA5 1RJ are shown below in Figures 2 and 3.



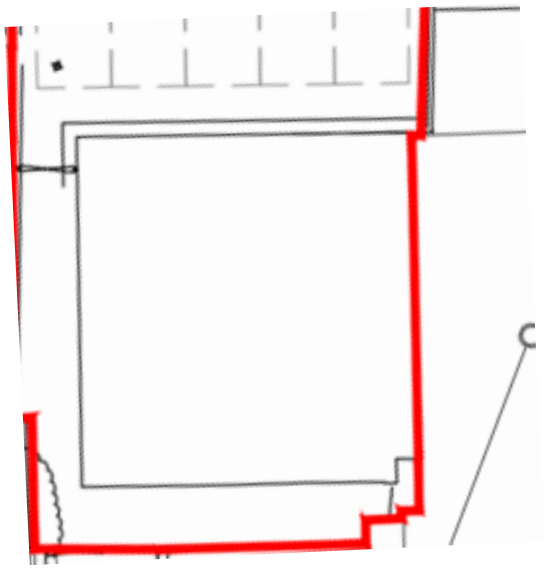
Proposed Ground Floor Plan



Proposed First Floor Plan



Proposed Second Floor Plan



Existing / Proposed Roof Plan

Figure 2 - Proposed Ground, First & Second Floor & Roof Plan Refurbishment Works at Conex House

Existing / Proposed Front Eleveation

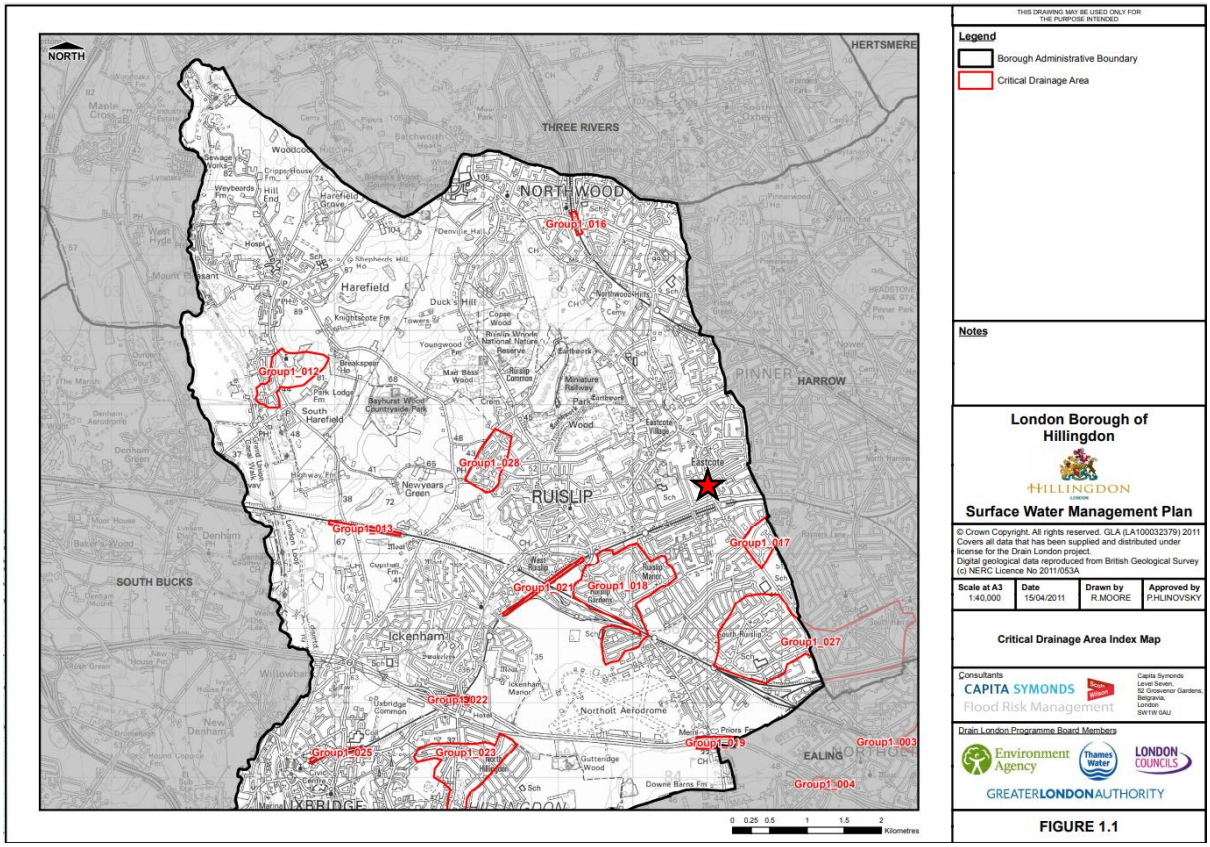
Existing / Proposed Rear Eleveation

Figure 3 - The Existing / Proposed Front & Rear Elevation for the Refurbishment Works at Connex House

Critical Drainage Area

The LB of Hillingdon Surface Water Management Plan (SWMP) included a Risk Assessment, direct rainfall modelling exercise across the entire Borough for five specified return periods. The results of this modelling was used to identify Local Flood Risk Zones (LFRZs) where flooding affects houses, businesses and/or infrastructure. Those areas identified to be at more significant risk have been delineated into Critical Drainage Areas (CDAs) representing one or several LFRZs as well as the contributing catchment area and features that influence the predicted flood extent.

The LB of Hillingdon identified and designated 17 CDAs. Figure 4 below shows Figure 1.1 - Critical Drainage Area Index Map from the LB of Hillingdon SWMP with the Connex House site location not within a CDA.



★ Site Location

Figure 4 - Figure 1.1 - Critical Drainage Area Index Map from the LB of Hillingdon SWMP

Thames Water Sewers

The site is serviced by separate Thames Water surface and foul water sewer networks located in the Field End Road highway in front of the refurbishment / development site. Thames Water asset location plans are provided within Appendix A.

Topography

The Threshold of the ground floor level of the existing building is at 52.61mAOD. The forecourt frontage car parking area at Conex House falls northward slightly adjacent to the building from the entrance at 52.39mAOD to 52.34mAOD at the side footpath. The frontage falls towards the highway

footway and Field End Road. The footway falls from 51.99mAOD at the southern end to lower than 51.93mAOD in the north. The road surface steps down accordingly and also falls slightly to the north.

Hydrology

The application site lies within the EA's Thames River Basin district.

There are no open drainage ditches or watercourses on or nearby the proposed redevelopment / refurbishment site.

Hydrogeology

The British Geological Survey site describes the site geology as London Clay Formation – Clay Silt and sand. A sedimentary bedrock formed in the Palaeogene Period. The London Clay bedrock at the application site identified by the British Geological Survey site is shown in Figure 5 below.

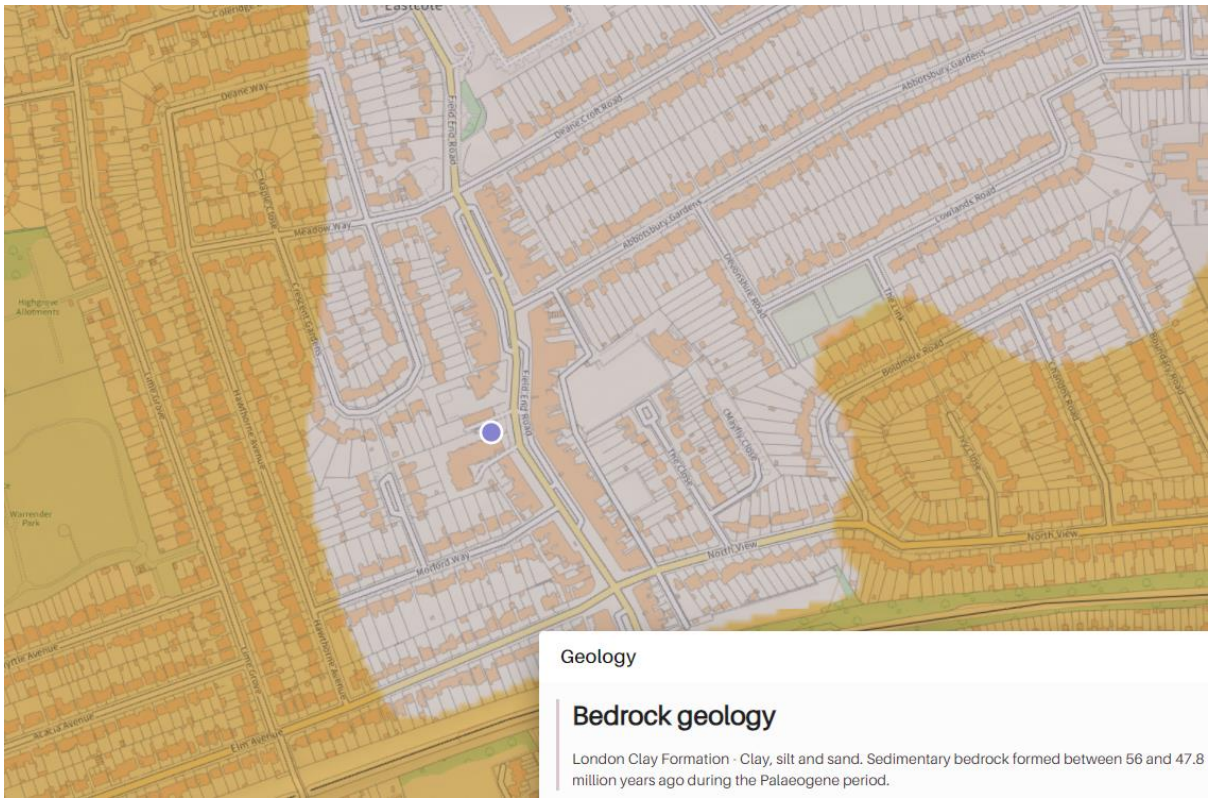


Figure 5 - BGS Bedrock Geology 1 in 50,000 (Source: British Geological Society Website (Contains British Geological Survey materials © URKI [2019]. Base mapping is provided by ESRI)).

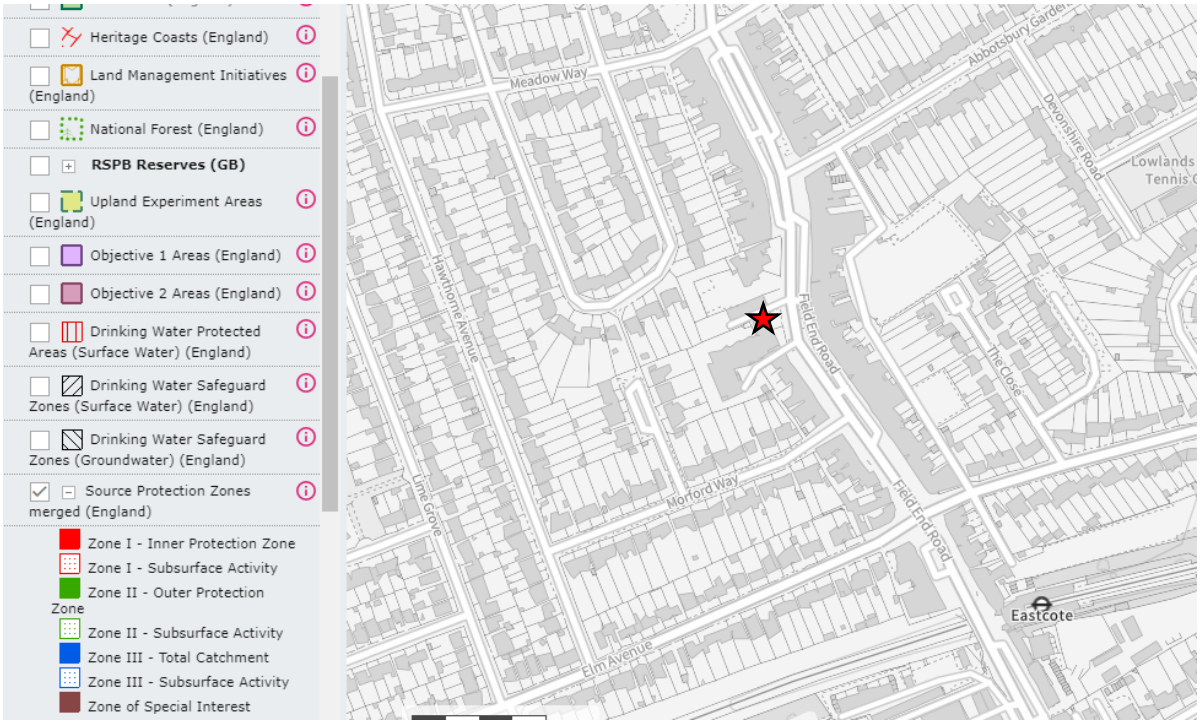
The British Geological Survey site has no records of superficial deposits at the site.

There are no records of historical trial holes and boreholes at the application site. However, there are records from boreholes at neighbouring sites. The borehole log records identify the high level London Clay Formation bedrock. the boreholes were dry.

The footprint of the existing building with the proposed change of use / refurbishment is not altered and does not change.

Groundwater

The site is not located within a groundwater source protection zone as shown in Figure 6 below.



★ Location of the development.

Figure 6 - magic.defra.gov.uk - Source Protection Zones merged (England)

Flood Zone

The application site is within a Flood Zone 1 area as shown in Figure 7 below.

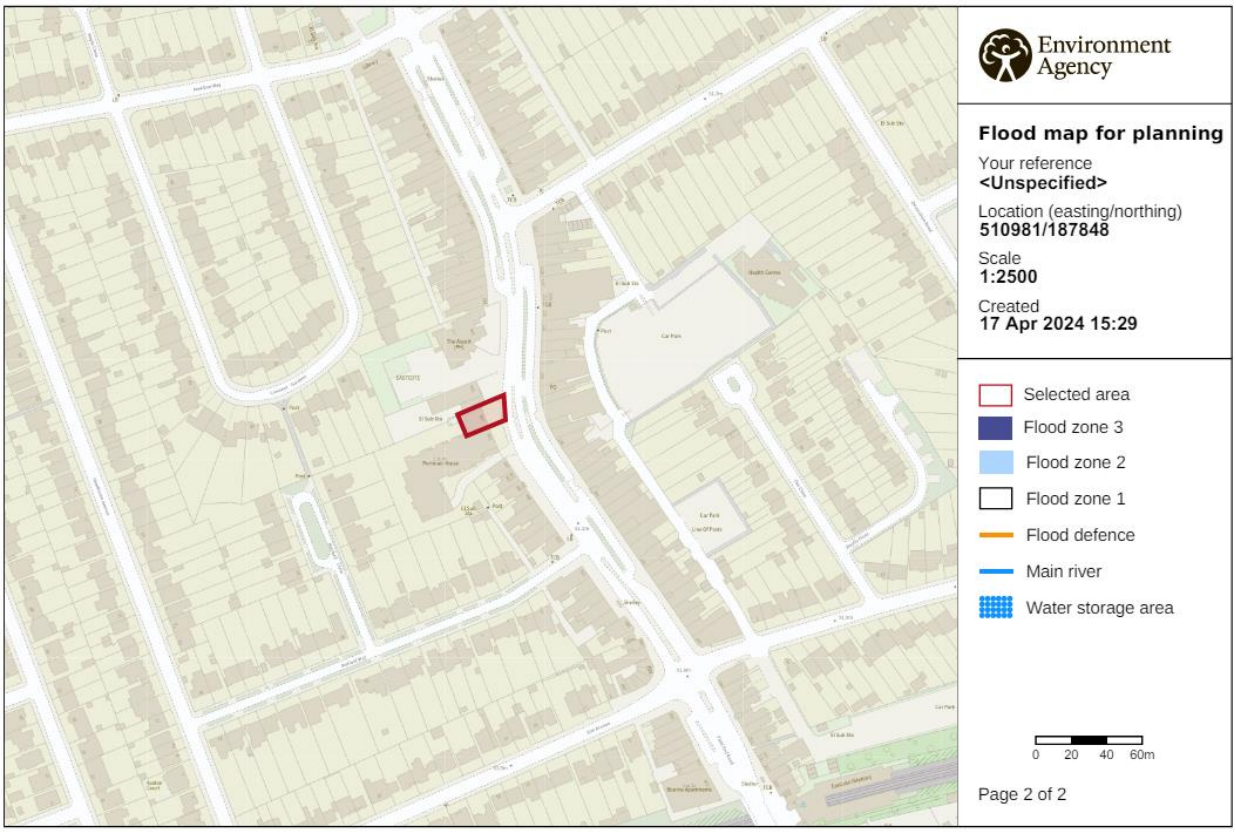


Figure 7 – EA Flood Map for Planning

Planning Policy

The National Planning Policy Framework (NPPF) currently sets out the Government's planning policies for England and defines Flood Zones, Flood Risk vulnerability classification and their compatibility in the tables below.

Table 1: Flood Zones

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning (Rivers and Sea), available on the Environment Agency's web site, as indicated in the table below.

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)

Flood Zone	Definition
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Note: The Flood Zones shown on the Environment Agency's Flood Map for Planning (Rivers and Sea) do not take account of the possible impacts of climate change and consequent changes in the future probability of flooding.

Table 1 – Table 1 from Planning Policy Guidance (Flood Risk and Coastal Change) 06 03 2014

Table 2: Flood risk vulnerability classification

Essential infrastructure • Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. • Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. • Wind turbines.
Highly vulnerable • Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substances consent. (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').
More vulnerable • Hospitals • Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling houses, student halls of residence, drinking establishments, nightclubs and hotels. • Non–residential uses for health services, nurseries and educational establishments. • Landfill* and sites used for waste management facilities for hazardous waste. • Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less vulnerable • Police, ambulance and fire stations which are not required to be operational during flooding. • Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill* and hazardous waste facilities). • Minerals working and processing (except for sand and gravel working). • Water treatment works which do not need to remain operational during times of flood. • Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place.
Water-compatible development • Flood control infrastructure. • Water transmission infrastructure and pumping stations. • Sewage transmission infrastructure and pumping stations. • Sand and gravel working. • Docks, marinas and wharves. • Navigation facilities. • Ministry of Defence defence installations. • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation). • Lifeguard and coastguard stations. • Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms. • Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

Table 1 – Table 2 from Planning Policy Guidance (Flood Risk and Coastal Change) 06 03 2014

The proposed development classification at the application site is more vulnerable.

Table 3: Flood risk vulnerability and flood zone 'compatibility'

Flood risk vulnerability classification (see table 2)		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	×	Exception Test required	✓
	Zone 3b functional floodplain	Exception Test required	✓	×	×	×

Key: ✓ Development is appropriate.
× Development should not be permitted.

Table 2 – Table 3 from Planning Policy Guidance (Flood Risk and Coastal Change) 06 03 2014

More vulnerable developments are acceptable within a Flood Zone 1.

This FRA & SuDS Strategy takes into account and makes reference to the NPPF and the National Planning Practice Guidance (NPPG) as well as the local polices and guidance including the London Plan; Preliminary Flood Risk Assessment for the London Borough of Hillingdon 2011; Local Flooding Risk Management Strategy 2015; West London Strategic Flood Risk Assessment - Hillingdon; LB of Hillingdon website: Local Flood Risk Surface Water Management Plan; Hillingdon SuDS Design and Evaluation Guide; and related documents. It also makes reference to consultations with the Environment Agency and Thames Water as well as CIRIA753 The SuDS Manual and Susdrain – the community for sustainable drainage.

4. Flooding

Introduction

There are a wide range of potential mechanisms which can cause flooding. Each potential source of flooding is discussed individually below. This section refers to the LB of Hillingdon Local and Strategic Flood Risk Management Strategies.

Tidal or River Flooding

The EA plan shows that the application site is within an area where the flood risk from rivers or the sea at this location is less than very low as shown in the Environment Agency flood risk map below in Figure 8 – Flood Risk from Rivers or the sea.

Very low risk means that each year this area has a chance of flooding of less than 0.1%. This takes into account the effect of any flood defences in the area. These defences reduce but do not completely stop the chance of flooding as they can be overtopped or fail.

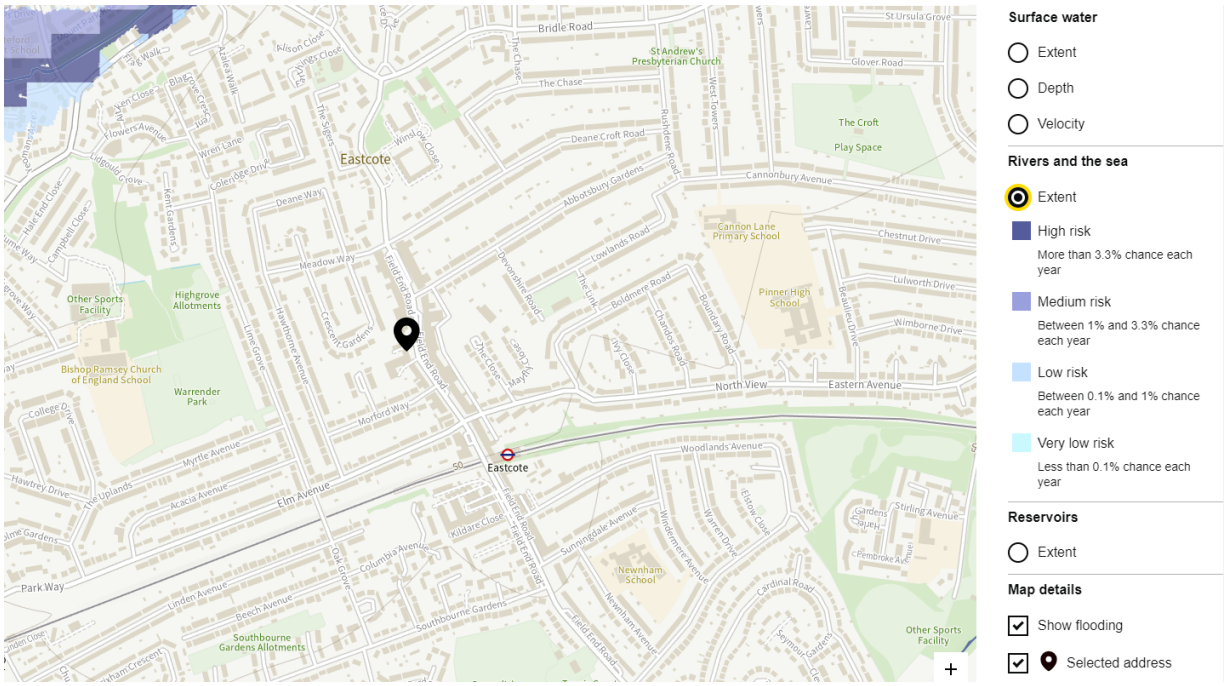


Figure 8 - Flood Risk from Rivers or the sea

Surface Water Flooding

Surface water flooding can occur during high intensity rainfall events as sheet run off from fields or hard paved areas.

The application site sits within an area of very low risk of flooding from surface water as shown in the EA flood risk map below in Figure 9 - Flood Risk from Surface Water.

Very low risk means that each year this area has a chance of flooding of less than 0.1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.

The adjacent Fields End Road highway at the front of the site has a low to medium risk of surface water flooding but predicted floods do not reach the development site. Surface water depths within the highway adjacent to the Connex House site are 300mm or less.

There is no historical record of surface water flooding at the site.

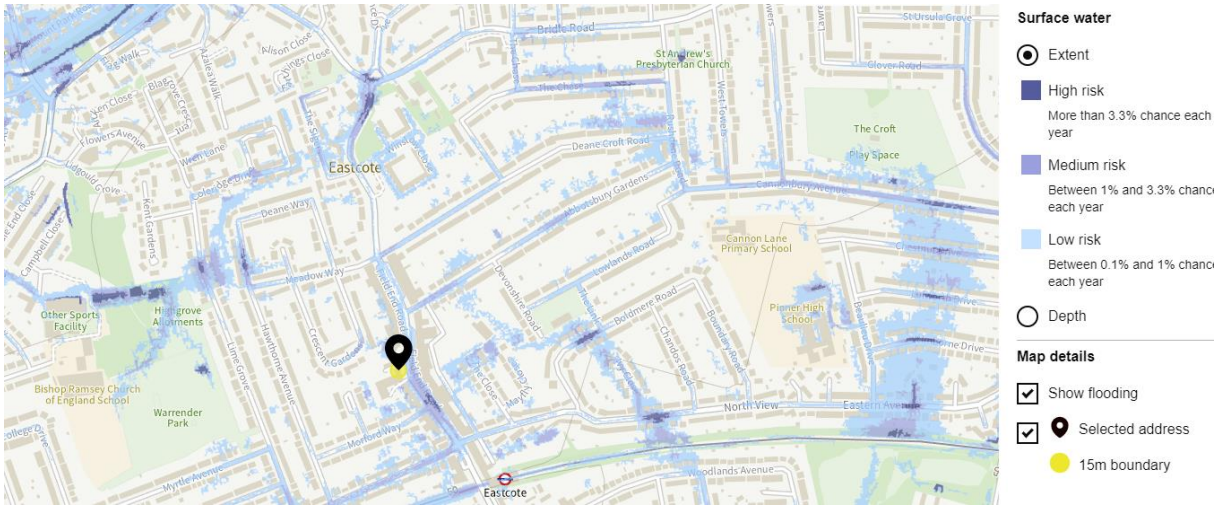


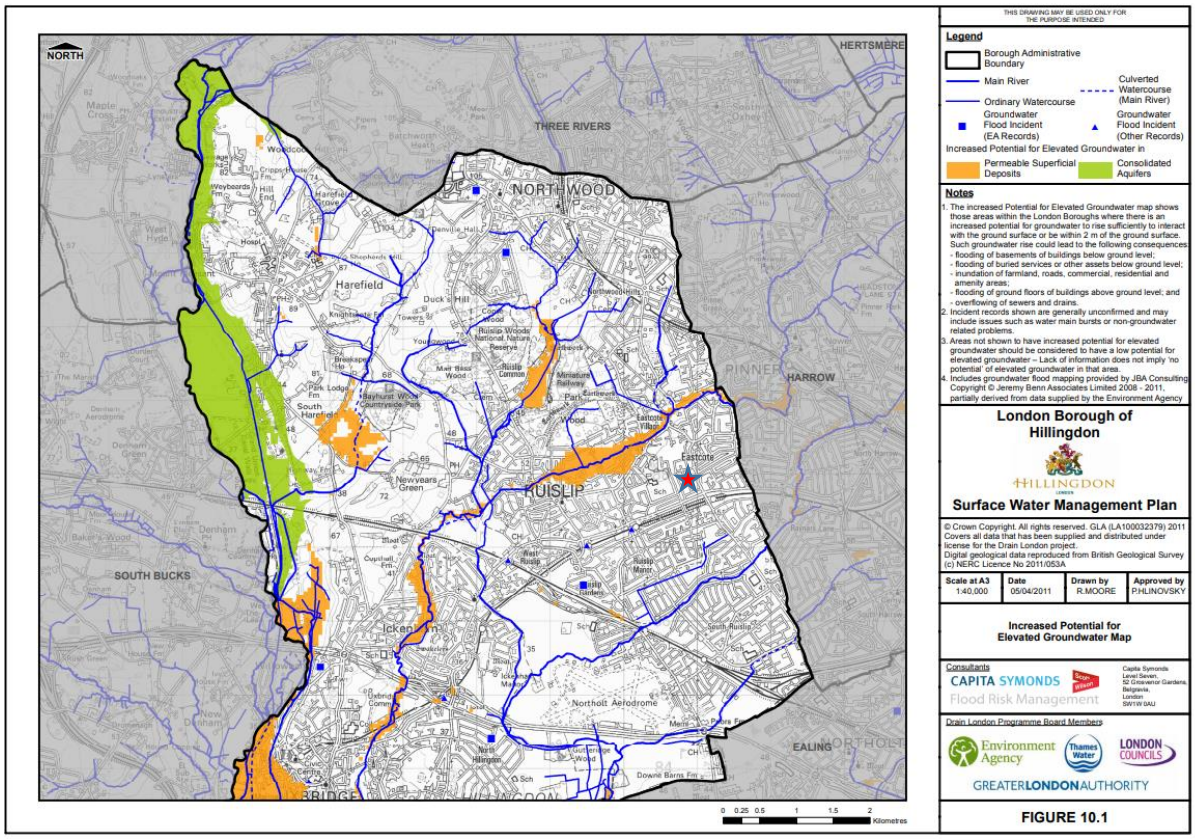
Figure 9 - Flood Risk from Surface Water

Groundwater Flooding

Figure 10 - London Borough of Hillingdon Surface Water Management Plan figure 10.1 Increased Potential for Elevated Groundwater Map below shows that the application site is not located within an area at risk from groundwater flooding. Figure 10 below also identifies that there are no records of groundwater flooding incidents at the development site.

The Sewer, Groundwater & Artificial Flood Risk map on the West London Strategic Flood Risk Assessment website also shows that the site is not at risk of flooding.

There are no records of boreholes at the application site. However, boreholes in the area indicated the London Clay bedrock and were dry.



Location of the development.

Figure 10 - London Borough of Hillingdon Surface Water Management Plan figure 10.1 Increased Potential for Elevated Groundwater Map

Flood Risk From Sewers

Thames Water has sewerage networks within the vicinity that services the development site for both foul sewage and surface water drainage. The Thames Water asset plans are shown in Appendix A.

Thames Water have confirmed that their flooding records indicate that there have been no incidents of flooding as a result of surcharging / overloaded public sewers at the application site. Please see the Thames Water correspondence in Appendix A.

Thames Water referencing for properties at risk of flooding from sewers include the following:

• 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 is expected that the sewers and water distribution networks in the vicinity of this site are well maintained as Thames Water is a highly professional company having planned operations and maintenance regimes for their sewerage, drainage and potable water main network systems.

It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Thames Water. Their report excludes flooding from private sewers and drains and Thames Water makes no comment upon this matter.

Flood Risk from other Sources

In rare occasions, a development may be subject to flood risk from upstream features such as reservoirs, where there is a theoretical risk of failure. An area is considered at risk if peoples' lives could be threatened by an uncontrolled release of water from a reservoir.

The application site is not at risk of flooding from the failure of a reservoir as is shown in the EA flood risk map below in Figure 11 - Flood Risk from Reservoirs.

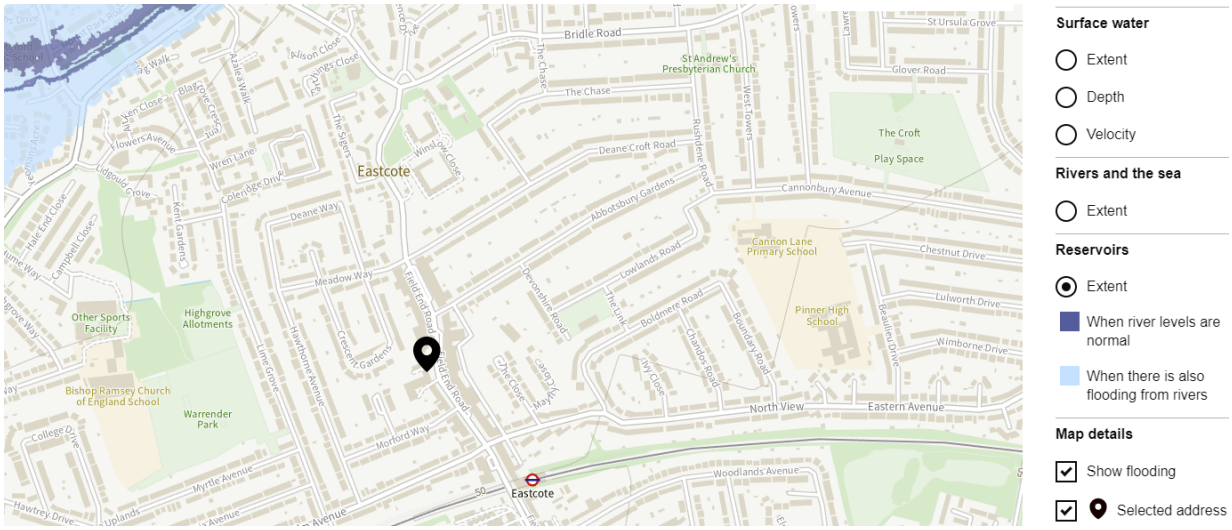


Figure 11 – Flood Risk from Reservoirs

Flood Risk Summary

Data from the EA's flood maps corresponds with that included within the Preliminary Flood Risk Assessment maps for the London Borough of Hillingdon and West London Strategic Flood Risk Assessment maps.

The Preliminary Flood Risk Assessment maps for the London Borough of Hillingdon do not show any historical flooding at or close to the development site.

The application site is at a very low risk of surface water flooding.

5. Sustainable Drainage Systems Strategy

Philosophy

Sustainable drainage has moved away from the traditional thinking of designing to manage flood risk and where runoff is regarded as a nuisance to a philosophy of surface water being a valuable resource that should be managed for maximum benefit.

Sustainable Drainage systems (SuDS) can contribute to sustainable development overall by improving the places and spaces where we live, work and play as well as balancing the different opportunities and challenges that influence urban design and the development of communities.

The SuDS philosophy is to replicate, as closely as possible the natural drainage from a site before development. SuDS mimic nature and manage rainfall close to where it falls. They can be designed to convey surface water, slow / attenuate runoff before it enters watercourses, provide areas to store water in natural contours and can be used to allow water to infiltrate into the ground or evaporate from the surface and transpired from vegetation.

The "four pillars" of SuDS design philosophy is to meet design objective where surface water runoff is managed for water quantity, water quality, amenity and biodiversity benefits.

Management Train

Adopting a holistic approach towards surface water drainage provides the benefits of combined water quality and quantity control, biodiversity as well as increased amenity value. This is accomplished by managing the increased flows and pollution from surface water runoff that can arise from development

A fundamental concept used in the management / development of SuDS is the management train or treatment train, illustrated in Figure 12 below

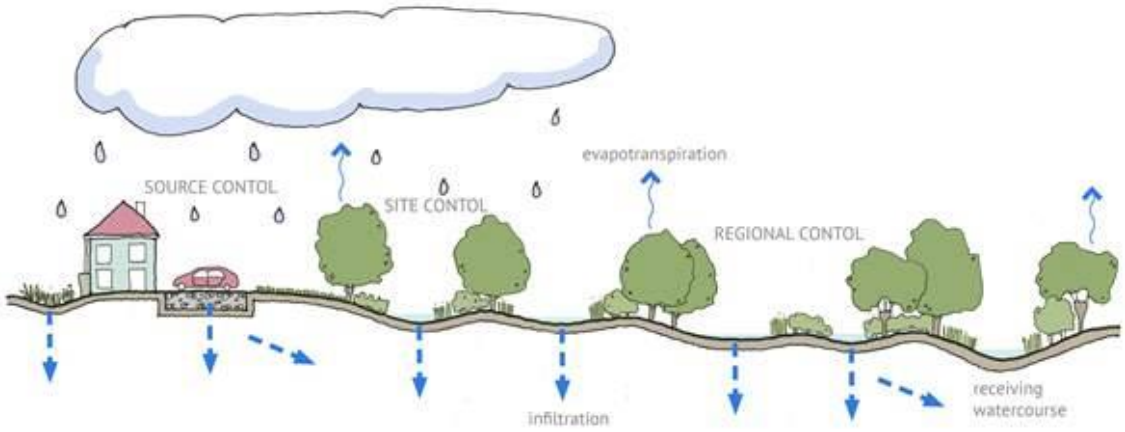


Figure 12 - SuDS Management Train (susdrain)

Just as in a natural catchment, drainage techniques can be used in series to change the flow and quality characteristics of the runoff in stages. The management train starts with prevention (prevent runoff by reducing impermeable areas), or good housekeeping measures for reducing pollution; and progresses through local source controls to larger downstream site and regional controls

They are regarded as a sequence of management practices, control structures and strategies designed to efficiently and sustainably drain surface water, while minimising pollution and managing the impact on water quality of local water bodies. Within the philosophy of the surface water management train each component adds to the performance of the whole drainage system.

Design Requirements

SuDS design proposals should consider the location of discharge as a hierarchy, Planning Practice Guidance states:

"Generally, the aim should be to discharge surface run off as high up the following hierarchy of drainage options as reasonably practicable:

1. into the ground (infiltration);
2. to a surface water body;
3. to a surface water sewer, highway drain, or another drainage system;
4. to a combined sewer."

The current London Plan Policy SI 13 Sustainable drainage states:

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

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

SuDS design:

- Manage runoff volumes and flow rates from hard surfaces, reducing the impact of urbanisation on flooding
- Provide opportunities for using runoff where it falls
- Protect or enhance water quality (reducing pollution from runoff)
- Protect natural flow regimes in watercourses
- Are sympathetic to the environment and the needs of the local community
- Provide an attractive habitat for wildlife in urban watercourses
- Provide opportunities for evapotranspiration from vegetation and surface water
- Encourage natural groundwater/aquifer recharge (where appropriate)
- Create better places to live, work and play.

Summary of typical SuDS Components:

Source Control

- Good house keeping
- Green Roofs

- Infiltration Basins
- Infiltration trenches
- Permeable pavements / Grasscrete
- Rainwater Harvesting
- Soakaways

Permeable Conveyance Systems

- Filter (or French) Drains
- Swales

Passive Treatment

- Bioretention / Vegetated areas
- Filter Strips
- Detention Basins
- Retention ponds
- Wetlands

Pipes and accessories. A series of conduits and their accessories normally laid underground that convey surface water to a suitable location for treatment and/or disposal. (Although sustainable, these techniques should be considered where other SUDS techniques are not practicable).

Site Considerations

As well as to ensure that the users of the site are not at risk, another key objective is to ensure that the development does not increase the potential of flooding elsewhere. This objective can be achieved by designing a drainage / SuDS strategy for the development that will set the strict framework to be followed during the detailed drainage design.

The SuDS strategy will be delivered as required in accordance with prevailing local and national planning policy and design standards including CIRIA Reports etc.

This FRA & drainage / SuDS Strategy takes into account and makes reference to the NPPF and the National Planning Practice Guidance (NPPG) as well as the local polices and guidance including the London Plan.

Currently, the most significant directives influencing the design of the SuDS strategy are the Flood and Water Management Act 2010, the National Planning Policy Framework (NPPF) and relevant chapters of the Planning Practice Guidance (PPG) as well as the local polices and guidance including the London Plan; Preliminary Flood Risk Assessment for the London Borough of Hillingdon 2011; Local Flooding Risk Management Strategy 2015; West London Strategic Flood Risk Assessment - Hillingdon; LB of Hillingdon website: Local Flood Risk Surface Water Management Plan; Hillingdon SuDS Design and Evaluation Guide; and related documents.

It also makes reference to consultations with the Environment Agency and Thames Water as well as CIRIA753 The SuDS Manual and Susdrain – the community for sustainable drainage.

This drainage / SuDS strategy sets the guidelines for future detailed design, complying with all relevant planning and legislative criteria.

Outline SuDS Strategy Design

The aim of the outline drainage / SuDS strategy is to mimic the existing drainage system for the site.

The existing site is a brownfield hard surfaced site that sits directly on London Clay. the site is not suitable for infiltration soakaway systems. There are no drainage ditches or watercourses on or near the site to drain to. The surface water from the existing site is drained via a Thames Water surface

water sewer network located within the adjacent highway. Thames Water asset drawings confirm the location of a surface water sewer network accordingly. Current Thames Water asset record plans are shown in Appendix A. Please note that these are not a fully comprehensive record of their assets within the area and private drainage is not shown on their plans.

A review of the EA flood maps, British Geological Society and LB of Hillingdon documents have identified that the site is not suitable for infiltration. There are no historical records of flooding at the application site. The site is at a very low risk of flooding and there are no mitigation measure requirements for the development. The main flood risk to the development is therefore from surface water runoff from the new development itself.

Surface water runoff exceedance flows from the existing application site onto the adjacent highways and flows away from the site. In addition to ensuring flood risk on site is not increased the SuDS design for the proposed redevelopment considers mitigation in order not to add to offsite flood risk.

The proposed refurbishment / redevelopment is for the internal conversion of the existing retained building from commercial / office to residential with 6 No units within the existing building footprint. There will therefore be no change in the built footprint and impermeable surfaces as a result of the proposed development. The rate of surface water runoff from the proposed development will be the same as the existing rate.

Given that the proposed development is for an internal refurbishment / conversion to the existing building there is limited scope to implement large scale SuDS on site. It is recommended that the proposed development discharges surface water runoff via the drainage system associated with the existing development.

Rainwater runoff flows from the roof level and existing external surfaces will drain as it currently does.

6. Management and Maintenance

The management and a maintenance regime for the surface water management of the proposed refurbishment will continue in accordance with the existing methods and procedures.

Management

The existing onsite surface water management system is not eligible for adoption and will remain in the private ownership of the facilities maintenance manager / developer. The building maintenance manager / developer will be responsible for the long-term maintenance of the onsite drainage system.

Maintenance

The maintenance strategy and regime are to continue in accordance with the existing established methods, procedures and specific manufacturers recommendations. They should include

- inspections required to identify performance issues and plan appropriate maintenance needs
- operation and maintenance of the overall drainage system
- landscape management
- waste management associated with contaminated silt and other waste materials resulting from maintenance.

The existing Operations & Management Manual for the surface water drainage / SuDS should be followed by the site operator. It should provide the surface water management strategy and SuDS overall philosophy as well as the function and operation of each component. Manufacturers technical details and maintenance procedures and requirements should be included within the Manual.

7. Conclusions

The PES has been commissioned to produce a FRA and SuDS Strategy statement in support of a planning application for a proposal at Conex House, 148 Field End Rd, Ruislip Pinner HA5 1RJ for the internal conversion of the existing retained building from commercial / office to residential with 6 No units.

This FRA and SuDS Strategy statement has been prepared as a desk top study based on the architectural drawings supplied and gathered data available within the public domain. It summarises the drainage / SuDS strategy solution for the proposed refurbishment / redevelopment project and demonstrates that the development complies with planning policy on flood risk – National Planning Policy Framework (NPPF) and supports Planning Practice Guidance (PPG) as well as the London Borough of Hillingdon Policies and guidelines including associated SuDS requirements.

The design process began with a review and analysis of the proposed development and the existing site conditions with respect to surface water drainage and flood risk. This included a study of both the hydrology and hydrogeology of the site. There is a low risk of flooding from all sources to the site of the proposed redevelopment / refurbishment works.

The proposed internal refurbishment / redevelopment of the Connex House property is for the conversion and change of use from commercial office space to residential units. There will therefore be no change in the built footprint and impermeable surfaces as a result of the proposed development. The rate of surface water runoff from the proposed development will be the same as the existing rate.

Given that the proposed development is for an internal changes / refurbishment, there is limited scope to implement large scale SuDS on site. It is recommended that the proposed redevelopment discharges surface water runoff via the existing drainage system associated with the existing development.

Rainwater runoff flows from the various roof levels and existing external surfaces will drain as it currently does.

Surface water from the site is to continue to utilise the Thames Water surface water sewer as existing.

The management and a maintenance regime for the surface water management of the proposed refurbishment will continue in accordance with the existing methods and procedures.

Appendix A

Thames Water Correspondence

Asset Location Search

Thames Water Property Searches

eb Sustainability
Mira Sol
Crown Road
CWMBRAN
NP44 8UF

Search address supplied

Conex House
Conex House
148
Field End Road
Pinner
HA5 1RJ

Your reference Conex House

Our reference ALS/ALS Standard/2024_4977036

Search date 18 April 2024

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the prices of its CON29DW Residential and Commercial searches along with the Asset Location Search. Costs will rise in line with RPI as per previous years, which is sat at 6%.

Customers will be emailed with the new prices by February 28th 2024.

Any orders received with a higher payment prior to the 1st April 2024 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk.

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

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Asset Location Search

Property Searches

Search address supplied: Conex House, Conex House, 148, Field End Road, Pinner, HA5 1RJ

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

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

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Asset Location Search

Thames Water Property Searches

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an ‘as constructed’ record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

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

Affinity Water Ltd
Tamblin Way
Hatfield

AL10 9EZ
Tel: 0345 3572401

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

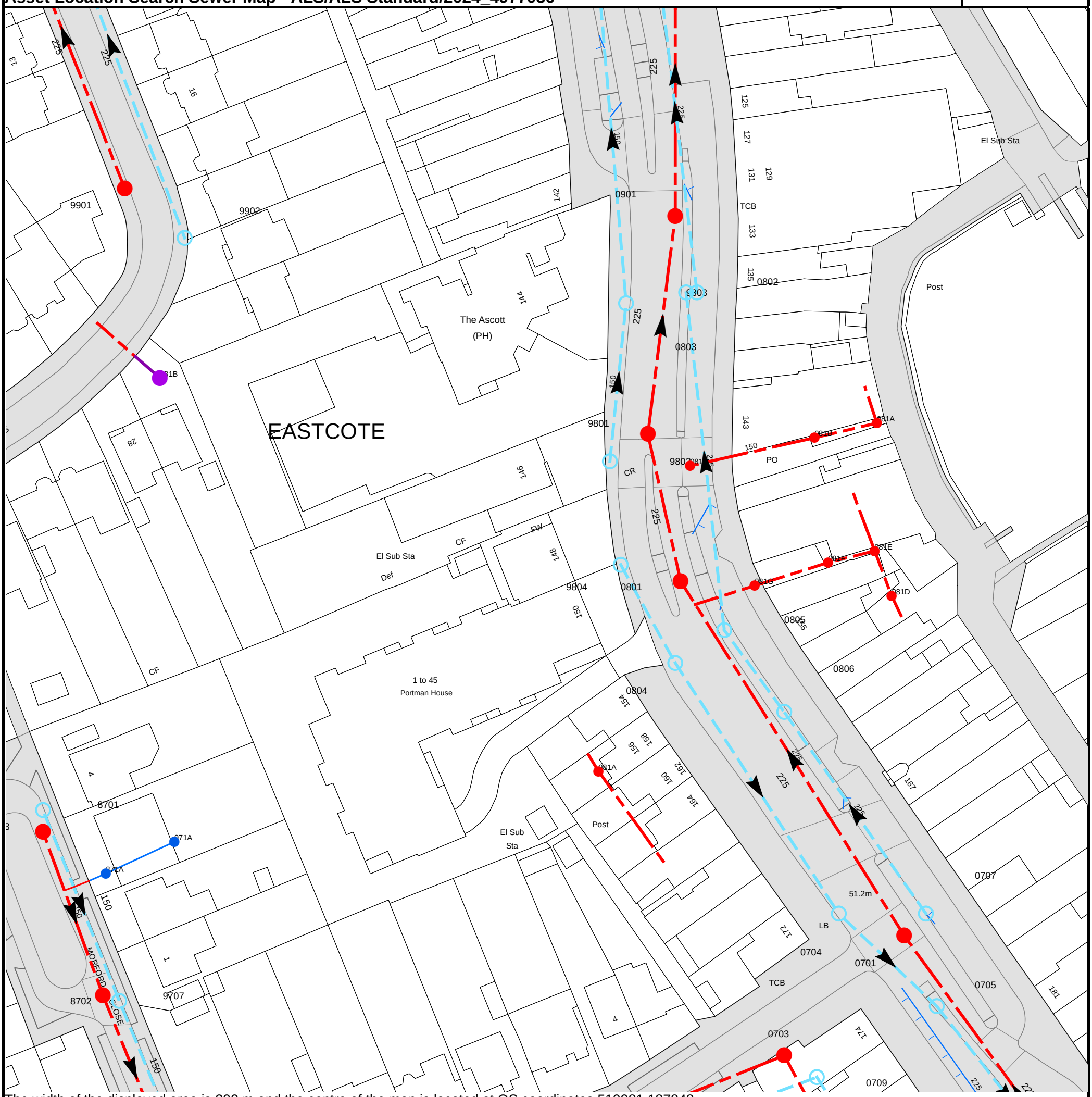
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2024_4977036



The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 510981,187848

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

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

Manhole Reference	Manhole Cover Level	Manhole Invert Level
0709	n/a	n/a
0705	51.47	50.66
0701	51.42	49.5
0707	51.58	50.78
081C	n/a	n/a
081B	n/a	n/a
081A	n/a	n/a
081E	n/a	n/a
081D	n/a	n/a
9902	52.81	50.93
981A	n/a	n/a
9802	51.81	50.99
9804	51.72	50.93
9803	51.76	50.55
9801	51.77	49.08
0901	51.73	48.94
0804	51.54	50.86
0801	51.56	49.2
0803	51.91	50.51
0802	51.67	50.49
0805	51.56	50.88
081G	n/a	n/a
0806	51.72	50.92
0703	51.99	50.08
081F	n/a	n/a
0704	51.33	50.72
8803	n/a	n/a
8701	52.64	51.45
8702	52.57	51.2
871A	n/a	n/a
9707	52.57	51.47
9901	52.81	50.93
981B	n/a	n/a
971A	n/a	n/a

Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

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

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

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

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

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

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

Sewer Fittings

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

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

Operational Controls

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

- Ancillary
- Drop Pipe
- Control Valve
- Weir

End Items

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

- Inlet
- Outfall
- Undefined End

Other Symbols

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

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

Areas

Lines denoting areas of underground surveys, etc.

- Agreement
- Chamber
- Operational Site

Ducts or Crossings

- Casement

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

- Conduit Bridge
- Subway
- Tunnel

Notes:

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

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

Payment Terms and Conditions

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

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

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

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

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

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

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

Ways to pay your bill

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

Sewer Flooding
History Enquiry

Property Searches

eb Sustainability

Crown Road

Search address supplied	Conex House Conex House 148 Field End Road Pinner HA5 1RJ
Your reference	Conex House
Our reference	SFH/SFH Standard/2024_4977037
Received date	**18 April 2024**
Search date	**18 April 2024**

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

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Conex House,Conex House,148,Field End Road,Pinner,HA5 1RJ

This search is recommended to check for any sewer flooding in a specific address or area

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

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

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- 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

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

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0800 009 4540