

Alterations and Extensions to Unit 336 Stockley Close, West Drayton, UB7 9BL

Report for Planning Condition 4 - Sustainable Water Management Scheme

Introduction

Planning Approval ref. no: 51458/APP/2018/2791 dated 3rd. December 2018, has been gained for the above development, which is one unit of an original three-unit development.

Planning Condition 4 requires that prior to commencement of works on site, a scheme for the provision of sustainable water management shall be submitted to and approved in writing by the Local Planning Authority.

The proposed works are to an existing detached industrial unit that was completed in 2014.

The Existing Building

The existing building was built compliant with Policy EM6 Flood Risk Management in Hillingdon Local Plan: Part 1- Strategic Policies (Nov 2012).

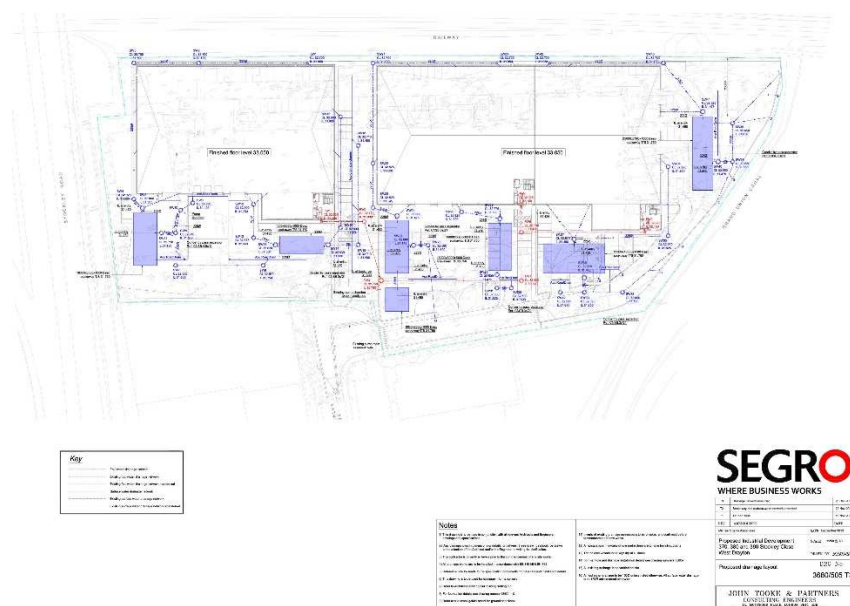
The original flood management scheme was divided in to four parts:

1. Site Investigation and flood risk assessment

A flood risk assessment was produced by Capita and is a publicly assessable document on Hillingdon Council Public Access Portal for Planning Applications. The original planning approval was ref. no: 51458/APP/2013/2973 and the document in two parts can be accessed via the following links:

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C51458_A PP_2013_2973%5CFRA_Stockley+Close_Rev+A_Part+1+of+2.pdf&module=pl

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C51458_A PP_2013_2973%5CFRA_Stockley+Close_Rev+A_Part+2+of+2.pdf&module=pl



2.

2. Drainage Calculation and Design

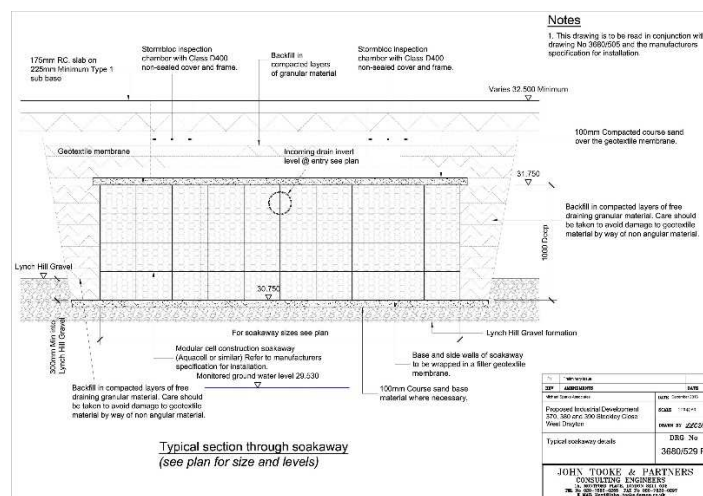
A drainage design is highlighted in the Part 2 of 2 link above and is supported by calculations found via the following link:

<https://planning.hillingdon.gov.uk/OcellaWeb/showDocuments?reference=51458/APP/2013/2973&module=pl>

(see 'additional information amended - Soakaways technical data 2013-12-23').

The following link will take you to a detail of the underground soakaway design:

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C51458_APP_2013_2973%5C3680-529+P1+-+Typical+Soakaway+Details.PDF&module=pl

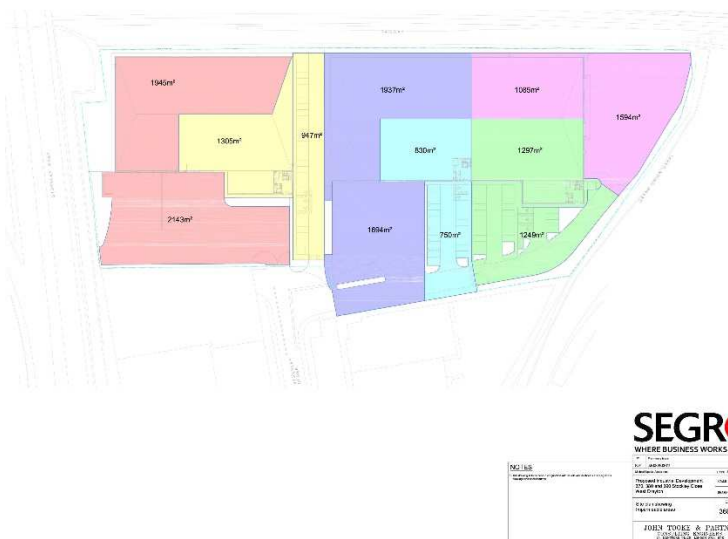


Thumbnail of original soakaway design detail

3. Assessment of Impermeable Areas

A plan was provided showing the impermeable areas via the following link:

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C51458_APP_2013_2973%5C3680-508+P1+-+Impermeable+areas.pdf&module=pl



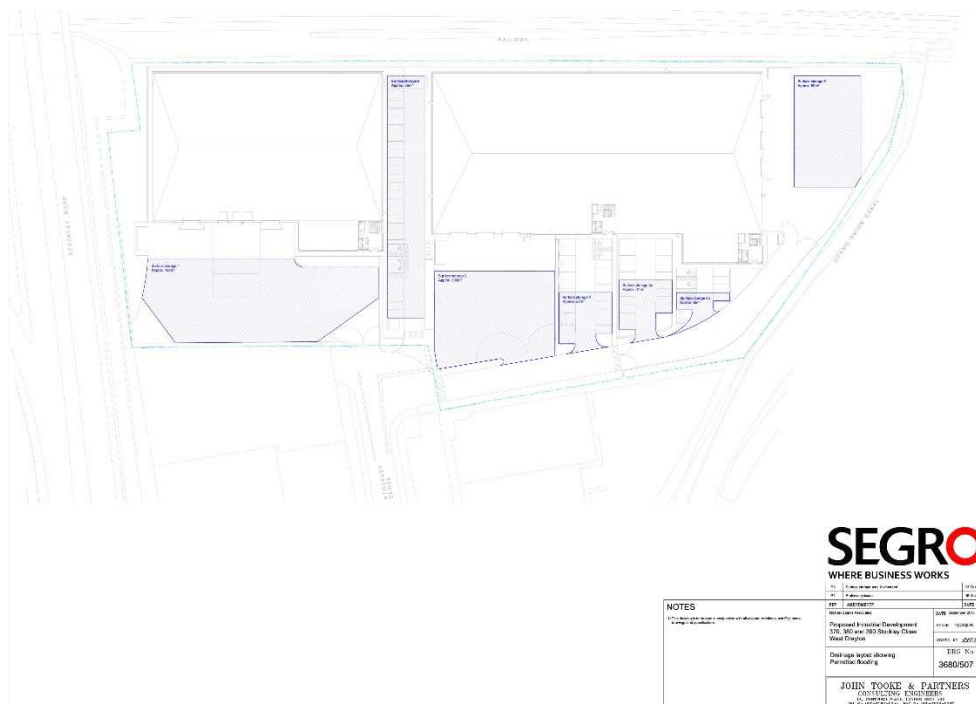
Thumbnail of original impermeable areas drawing found at above link

3.

4. Permitted Flooding

A drainage design is highlighted impermeable areas that have been designed to flood as a back up to the sustainable soakaway design and detail can be found at the following link:

https://planning.hillingdon.gov.uk/OcellaWeb/viewDocument?file=dv_pl_files%5C51458_A PP_2013_2973%5C3680-507+P2+-+drainage+layout+showing+Permitted+flooding.PDF&module=pl



Thumbnail of original allowable flooding design drawing found at above link

The approved scheme has been implemented and seems to be working as designed with no flooding incidents reported by the Applicants and current building occupiers.

The original scheme as built placed two large areas of underground modular cell construction soakaways below the front service yard at a level above the monitored ground water level of 29.530 O.O.D. but well founded into the permeable strata of 'Lynch Hill Gravel' as determined by the original trial holes and permeability tests as part of the original sustainable flood management scheme.

Relevant Planning Policies

The relevant planning policies have been stated in the planning Conditions:

- (1). Policy EM6 Flood Risk Management in Hillingdon Local Plan: Part 1- Strategic Policies (Nov 2012);

Sustainable Urban Drainage Systems (SUDS) should be designed to take in to account the surface run-off quantity, rates and also water quality ensuring their effective operation up to and including the 1 in 100-year design standard flood including an increase in peak rainfall of up to 30% to account for climate change.

The Council will require new development to be directed away from Flood Zones 2 and 3 in accordance with the principles of the National Planning Policy Framework (NPPF). The site is still designated as in Flood Zone 1 and therefore continues to comply with policy.

(2). Policy 5.12 Flood Risk Management of the London Plan (March 2016);

<https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-five-londons-response/pol-11>

(3). Policy 5.13 Sustainable Drainage of the London Plan (March 2016);

<https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-five-londons-response/pol-12>

(4). Policy 5.15 Water use and supplies of the London Plan (March 2016);

<https://www.london.gov.uk/what-we-do/planning/london-plan/current-london-plan/london-plan-chapter-five-londons-response/pol-14>

(5). National Planning Policy Framework (March 2012), and the Planning Practice Guidance (March 2014).

<https://www.gov.uk/government/publications/national-planning-policy-framework--2>
<https://www.gov.uk/guidance/flood-risk-and-coastal-change>

It should be noted that the original scheme was design in accordance with Hillingdon's Local Plan Policy EM6 Flood Risk Management and although the London Plan Policies were not in place at the time of the original planning application the resulting scheme would still broadly comply with the spirit of these policies.

Current Proposed Scheme

The industrial unit is currently a food production, storage, packaging and distribution facility.

The planning approved scheme (planning approval no: 51458/APP/2018/2791 dated 3rd. December 2018), consists of the following:

- (a). internal alterations, subdividing larger rooms into smaller rooms, plus the installation of new plant and machinery principally to service a new cooked pasta production line;
- (b). a new two storey extension on the south-west corner of the existing building to house a new DAF processing plant, a chemical store and an air-lock into the chilled warehouse area;

(c). a new double height extension in the middle of the existing south elevation to form an air-lock in front of an existing loading dock to include an area for pallet storage;

(d). an extended external plant area to provide plant and machinery in support of the new internal processes as follows:

- (i). hot and cold-water storage tanks;
- (ii). new condenser units and buffer tanks for the upgraded internal cooling systems;
- (iii). a new balance tank in a concrete bunded enclosure to store waste water from the factory processes prior to treatment in the DAF process;
- (iv). a new sludge tank in a concrete bunded enclosure to store the semi-solid material left over from the DAF process prior to its removal from site by tanker;
- (v). a screening building where solids are removed from the factory process waste water prior to DAF treatment;
- (vi). a new High Voltage transformer Enclosure and a new Electrical Switch-Gear Enclosure;
- (vii). a new Gas Meter Enclosure.

(e). an enlarged service yard to facilitate easier access for a Sludge Tanker to reverse into a position close to the Sludge Tank.

The proposed drainage scheme is shown on planning application drawing nos. 17-045-PL501 - Proposed Site and Location Plan and 17-045-PL501 - Proposed Ground Floor Plan.

The new proposed food processes place more demands on energy and water use and the proposals are designed to deal with this extra demand.

The DAF process, 'dissolved air floatation' is a water treatment process that clarifies waste water by removing suspended matter such as oil and solids and making the waste water fit to be discharged into the normal public foul sewer system.

The Applicants have a current licenced agreement with Thames Water for the site to be able to discharge grey water to the public foul sewer at a rate of up to 2 litres per second for a 24-hour period and a maximum allowed output of 172 cubic metres per day. Currently the site discharges 20 cubic metres per day and is not planning to discharge more than half the daily allowance even with the new pasta processes up and running.

The new DAF plant and its associated balance and sludge tank will allow waste to be stored and discharged at a steady rate thus avoiding any discharge exceeding the maximum allowed flow rate at peak production times.

Surface Water Implications of New Development

The implication for surface water from the new development falls into three parts, the new building extensions, the new external plant areas and rainwater falling into the bunded areas.

The new building extensions have flat roofs over and the water falling onto these roofs will be carried down and into the existing surface water soakaway system and this is rainwater that would have fallen on the extensions footprints and be carried into the same system, therefore the extensions cause no change to the existing arrangement and zero net effect.

The new extended external plant bases will form new areas of impermeability.

The area of additional hard surface that was previously permeable soft landscaping is 225m² and this represents an additional 3.5% of hard surface on top of the 6340 m² of impermeable surface area of the original scheme.

The new hard surface area divides in to two areas, the bunded areas and the non-bunded areas.

The bunded areas contain the balance tank and the sludge tank and these are designed to catch any spillage or leaks from the storage tanks and pumps and put this material back in to the DAF treatment cycle, thus preventing any pollutants getting in to the surface drainage system.

The two bunded areas are open to the sky and equated to a total area of 49m². Rainwater falling into the bunded area will flow into collection sumps in the base of the bunded areas. Every day samples of the liquid in the sumps will be tested for contaminants. If the liquid in the sumps is rainwater it will be pumped into the adjacent surface water system. If the liquid in the sumps contains process fluids from leaks or spills, or contaminated rainwater, it will be pumped back in to the DAF process and then in to the foul sewer. For example, 2 inches of rain falling in an hour (a rare occurrence) into the bunds would equal 2.45 cubic metres of liquid and if this were found to be contaminated would only add 13% to the current daily site discharge. Holding the rainwater within the bunds would also create an indirect hydro-brake, allowing the water to be stored and pumped outside of periods of intense rainfall.

The balance of the hard surface area of 196m² will have the rainwater surface run-off directed into the existing soakaway system via a series of gullies and drains, which is an efficient way of getting the water back into the ground in a sustainable manner and more effectively than the lost soft landscape areas which would have had variable sub-surface conditions.

The original sustainable drainage system with its permitted flooding areas designed to cope with a 1 in 100-year peak occurrence and a 30% increase in peak rain flow should be able to cope with a 3.5% increase in catchment area.

There is no opportunity within the existing site to increase the soakaway capacity as the existing site is now criss-crossed with other drainage and major underground services of gas, electrics and water.

Conclusion

The site is in a Flood Zone 1 (see 'Flood Map for Planning' appended) and is at low probability of flooding from fluvial or tidal sources. Flood risk, both on and off-site, from site-generated runoff had been addressed via a surface water drainage strategy using a sustainable drainage system (SuDS) in the original building scheme.

The development was originally considered to be at low risk from flooding and was not considered to increase such risk to others.

The addition of 3.5% of impermeable surface draining in to the existing sustainable drainage system is not considered to change the flood risk on or off site. This rainwater would have originally drained to the same geographical ground area via the soft landscape and now will do the same via the more efficient SuDS system.

Food processing is an important part of feeding the general population. The applicants are investing heavily in a DAF processing system that renders their food waste liquid output in to an environmentally neutral product suitable to enter the public sewer system.

The bunded storage tanks are designed to prevent accidental leaks flowing off site and causing pollution therefore by default rain falling into these bunded areas will either be pumped into the site DAF process system if contaminated, or to the SuDS system if uncontaminated, but in relatively small and controlled amounts.

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First Issue - 18/12/2018

Flood map for planning

Your reference
17-045

Location (easting/northing)
507716/179775

Created
7 Dec 2018 11:18

Your selected location is in flood zone 1, an area with a low probability of flooding.

This means:

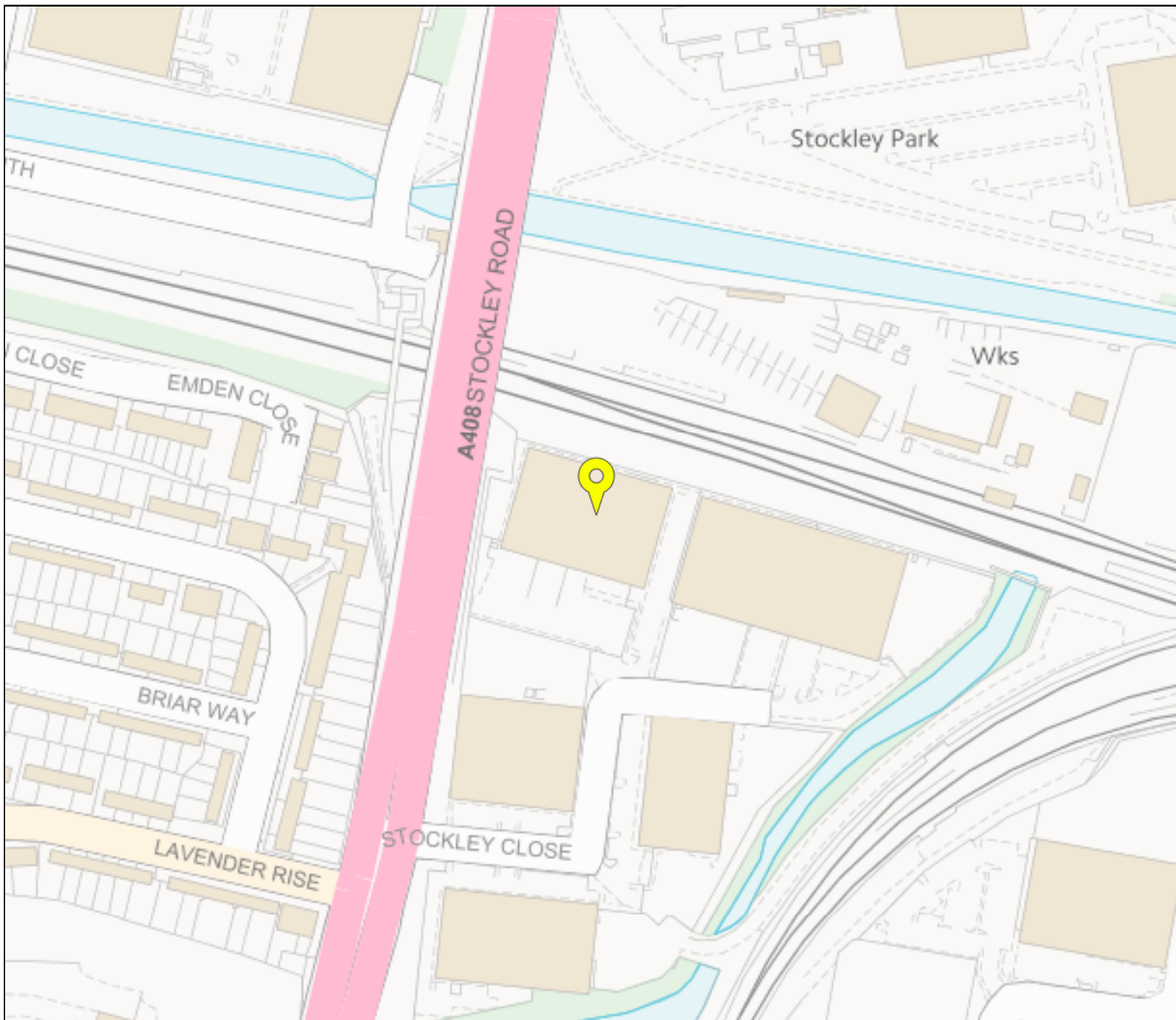
- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

The Open Government Licence sets out the terms and conditions for using government data.
<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



Flood map for planning

Your reference
17-045

Location (easting/northing)
507716/179775

Scale
1:2500

Created
7 Dec 2018 11:18

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefitting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area

0 20 40 60m