Gladman Developments Ltd

Land South of Ashford Road, Sellindge

Flood Risk Assessment and Outline Surface Water Drainage Strategy

680129-R2(02)-FRA
June 2024

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RSK GENERAL NOTES

Project No.: 680129-R2(01)-FRA

Site: Land South of Ashford Road, Sellindge

Title: Flood Risk Assessment and Outline Surface Water Drainage Strategy

Client: Gladman Developments Ltd

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02	Updated drainage strategy	12.06.24	RW	MC	CW

EXECUTIVE SUMMARY

RSK has been commissioned to undertake a Flood Risk Assessment and Outline Surface Water Drainage Strategy in support of the Outline Planning Application for a proposed residential development. The proposals are for the development of the site to encompass residential dwellings, vehicular access and soft landscaping. This will be contained within a proposed site totalling 2.95 hectares which is located at Land South of Ashford Road, Sellindge, and is currently considered as undeveloped from a hydraulic perspective.

The developable area of the site is wholly located within Flood Zone 1 and therefore the proposed development passes the Sequential Test and does not require the Exception Test to be undertaken. Generally, the developable areas of the site are considered to be at low risk from all sources of flooding and will not increase the risk of flooding elsewhere as a result of the development of the site. The proposed development and proposed surface water attenuation features will remain outside of the fluvial and pluvial flood risk area.

The indicative SuDS strategy proposed for this site includes the use of an attenuation basin located towards the north of the proposed development which can provide water quality and amenity benefits to the proposed developable area. With this proposed strategy surface water runoff will be retained on site and not exacerbate flood risk to the surrounding area.

It is recommended that finished floor levels should be set at or above the existing ground levels to not increase the risk of flooding to the properties.

CONTENTS

APPENDIX I OUTLINE SURFACE WATER DRAINAGE STRATEGY

1 INTRODUCTION

RSK Land and Development Engineering Ltd were commissioned by Gladman Developments Ltd (the client) to provide a Flood Risk Assessment (FRA) and Outline Surface Water Drainage Strategy to support the planning application at Land South of Ashford Road, Sellindge (the site). Development proposals include for a residential development.

The purpose of the FRA is to establish the risk associated with the proposed development and to propose suitable mitigation, if required, to reduce the flood risk to a more acceptable level. The FRA must demonstrate that the development will be safe for its lifetime (in this case assumed to be 100 years) taking account of the vulnerability of its users, without increasing flood risk elsewhere.

This document has been produced to assess the flood risk from tidal, fluvial, surface water, groundwater, sewer and artificial sources in line with the National Planning Policy Framework (NPPF)[1] and its corresponding Planning Practice Guidance (PPG)[2]. It includes a summary of the proposed surface water drainage strategy, showing how Sustainable Drainage Systems (SuDS) have been used to demonstrate surface water is appropriately managed on-site, with the aim that there is no increased risk of flooding on-site or elsewhere as a result of the development.

This assessment has been undertaken in consultation with the relevant authorities, and with reference to data, documents and guidance published by the Environment Agency (EA), the Lead Local Flood Authority (LLFA) (Kent County Council [KCC]), the Local Planning Authority (LPA) (Folkestone and Hythe District Council), the Water Authority (Southern Water).

The comments given in this report and opinions expressed are subject to RSK Group Service Constraints provided in **Appendix A**.

[1] Communities and Local Government, 'National Planning Policy Framework', published March 2012 and last updated September 2023.

[2] Communities and Local Government, 'Planning Practice Guidance - Flood Risk and Coastal Change, ID 7', published March 2014 and last updated August 2021. http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/..

2 SITE DESCRIPTION & PROPOSALS

2.1 Existing site

2.1.1 Site description

Site Address: Land south of Ashford Road,
Ashford Road,
Sellindge
Ashford
TN25 6EG (Nearest).

Site National Grid Reference: 609970 E, 138240 N

The site is located to the west of Sellindge, which itself is a village located in Kent; approximately 9km south east of Ashford. The site covers an area of 2.95Ha and comprises an agricultural field which surrounds a centrally located private property (Grove House) that is not included as part of the total site area.

Table 3.1, below, provides a description of the immediate surroundings of the site.

Table 3.1: Site setting

Direction	Characteristic
North	The northern boundary is generally set against Ashford Road.
East	To the east of the site is Bulls Lane. East of the site is a new build residential development.
South	To the immediate south of the site is a residential dwelling. South-west of the site are a number of fields used for arable farming and for grazing. There are a series of ponds within the fields south of the site.
West	To west of the site is a residential property (Fieldhead). To the south west of the site is adjacent farm land which is part of Potten Farm.

Figure 3.1 shows a Site Location Map.

Figure 2.1: Site location map with red line boundary of the site

2.1.2 Topography

A topographic survey has been provided for the site by Gladman (shown in **Appendix B**). The site is currently used for grazing. The western parcel is characterised by undulating topography whilst the eastern parcel is relatively level in comparison.

The areas of highest ground level elevation on the western parcel are found at the south western boundary, with a ground level of approximately 75.0mAOD (above ordnance data). The land falls north-eastwards with a terraced style topography which undulates. The low point of the western parcel is at the northern-eastern boundary with an elevation of approximately 66.5mAOD.

Shallow ditches are located at the southern boundary of the site. A shallow ditch runs centrally through the western parcel, aligned south to north, however, the ditch shallows out at the northern extent before reaching any site boundaries.

The eastern parcel has a ground level of approximately 68.0mAOD at the southern boundary, the site falls northwards with a ground level of approximately 66.7mAOD at the northern boundary. The fall is consistent across the parcel.

The approximate land use of the site is as follows:

Table 2.2: Existing site land uses

Land use	Area (m^2)	Percentage
Impermeable	0.0	0
Permeable	2.95	100
Total	2.95	100

As the site in undeveloped and has no existing impermeable area the site is considered Greenfield.

2.1.3 Existing drainage

2.1.3.1 Public

The existing drainage on site and in the immediate surroundings has been assessed using the topographic survey (**Appendix B**), the sewer records (**Appendix C**), the drainage details are as follows:

- Within the north eastern corner land parcel there is a public combined 150mm diameter head of system which starts on site and flows northwards along Moorstock Lane;
- Within the grounds of the adjacent property to the north west of the site there is a public combined 150mm diameter head of system which flows westwards parallel to Ashford Road; and
- Outside of the south eastern boundary corner there is a public combined 150mm diameter head of system which conveys flows in a general eastern then north eastern direction.
- Additionally there are several highway gullies outside of the northern site boundary along Ashford Road. The gullies are identified on the topographic survey.

2.1.3.2 Private

No details of the site's existing on-site drainage were provided. The shallow ditches in the site do not receive runoff from any formalised outfalls.

3 DEVELOPMENT PROPOSALS

The proposed development is for a residential end use. The current proposed development framework shows that approximately 1.30Ha of the 2.95Ha site will be developed. This area will contain a variety of dwellings, driveways, gardens, access highways, areas of public open space and areas of soft landscaping. Of this development area an impermeable area of 50% has been assumed. Therefore, the approximate land uses of the proposed site are summarised in **Table 4.1** below.

Table 3.1: Proposed site land uses

Land use	Area (Ha)	Percentage of Developable Area (%)	Percentage of Total Site (%)
Impermeable	0.65	50	22.0
Permeable	0.65	50	22.0
Total Developable Area	1.30	100	44.0
Remaining Greenfield Area	1.65	N/A	56.0
Total Site Area	2.95	N/A	100.0

4 ENVIRONMENTAL SETTING

4.1 Hydrology

4.1.1 Main River

The closest EA designated Main River is the East Stour River, this flows east to west at approximately 600m south from the site.

4.1.2 Ordinary watercourses

The closest ordinary watercourse is approximately 70m south of the site, mapping shows this watercourse flows between ponds. The watercourse flows eastwards towards the new build residential development to the east of the site.

A pre-application response from KCC (**Appendix D**) has suggested there may be a culverted watercourse to the east of the site which conveys flows from land south of Ashford Road, northwards beneath Ashford Road to outfall into a watercourse at Elm Wood farm. There is no available evidence of this culvert.

Approximately 20m to the north west of the site there is a highway ditch to the west of Dukes Head public house on the north side of Ashford Road. It was unclear at the time of the walkover whether this ditch had an onwards flow route westwards due to the dense overgrowth within the ditches and along the public right of way.

Approximately 316m to the north west of the site a mapped watercourse on the northern side of Ashford Road is shown to flow northwards through several fields before joining a wider watercourse network. This watercourse is maintained by the River Stour (Kent) Internal Drainage Board.

4.1.3 Other Waterbodies

There is a much larger and deeper pond at the boundary of the eastern parcel, this pond was filled with water on inspection. There were no observed outfalls from the pond.

Ditches at the central site area site did not exhibit connectivity to any wider watercourses and are likely to be historical field boundaries or used to intercept surface water runoff. A summary of the ditches and ponds is included in the Photograph Location Plan in **Appendix E**.

4.2 Geology

4.2.1 Desk Study

Based on published geological records for the area (British Geological Survey online mapping), the site exhibits the following geology:

The underlying geology on the site can be described as the following:

- Split Superficial Geology:

- Head - Clay and Silt. Superficial Deposits formed up to 3 million years ago in the Quaternary Period. Local environment previously dominated by subaerial slopes. (Eastern and central site area)
- None Recorded (South western site area)

Bedrock Geology:

- Sandgate Formation - Sandstone, Siltstone and Mudstone. Sedimentary Bedrock formed approximately 113 to 126 million years ago in the Cretaceous Period. Local environment previously dominated by shallow seas.

There are several historical borehole logs associated and recorded adjacent to the M20 (Motorway) and rail lines approximately 300m to the south of the site.

The closest located borehole log to the site (Ref TR03NE185). The borehole recorded approximately 0.5m of topsoil, this is underlain with approximately 0.6m of brown silty clay with roots, gravel and chalk. At a depth of 1.10mbgl the stratum is described as silty clay to a depth of 2.10mbgl. Gravel was encountered at 2.70mbgl, and the borehole was completed at 3.0mbgl.

4.2.2 Site Investigation

RSK Environment Ltd undertook infiltration testing at 4 locations across the site in September 2019, trial pits were excavated to depths ranging from 2.0m to 3.0m. Trial pit information and infiltration rates are provided in this soakaway report[3]. The report concludes that infiltration SuDS may be feasible based on the soakaway results at TP4.

Further testing was undertaken at the location of TP4 approximately 3 years after the original infiltration testing. It was found that the groundwater at the general location of TP4 was at approximately 2.50m below ground level (bgl) in March 2022[4], and 2.10mbgl in April 2022[5]. Furthermore, the infiltration rates recorded in the repeated tests at this location provided negligible infiltration rates.

It was concluded that that as the original testing was undertaken during September 2019 at the peak of the summer months it is likely the groundwater table was lower than can be observed at winter months, thereby increasing infiltration rates at that time. The subsequent infiltration testing was undertaken in late winter / early spring of 2022 when the topsoil was more likely to have been saturated, and the groundwater table higher. This has been confirmed with the LLFA in recent correspondence[6].

[3] 52109-L01(01), Land to the South of Ashford Road, Trial Pit Infiltration Testing Report, 25th September 2019, RSK Geosciences.

[4] 52301-L02(01), Potten Farm Infiltration Testing Report, 8th March 2022, RSK Geosciences.

[5] 52301-L03(01), Potten Farm Infiltration Testing Report, 1st April 2022, RSK Geosciences

[6] 680129-L2(0) – FRA, Response Letter, 22nd April 2024, RSK LDE

4.3 Hydrogeology

Hydrogeological information was obtained from the online Magic Maps service. Mapping shows the site is not underlain with any designated superficial aquifers.

The site is underlain with bedrock geology designated as a Secondary A aquifer. These are described as permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

Groundwater Source Protection Zone mapping identifies that the site is not within a Groundwater Source Protection Zone.

The groundwater level is expected to be approximately 2. 5mbgl, but subject to seasonal fluctuations.

5 LEGISLATION AND POLICY CONTEXT

5.1 National policy

Table 5.1: National legislation and policy context

Legislation	Key provisions
National Planning Policy Framework (2023)	The aims of planning policy on development and flood risk are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall.
Planning Practice Guidance (2014)	The NPPF is supported by an online Planning Practice Guidance, which provide additional guidance on flood risk.
Flood and Water Management Act 2010	The Flood and Water Management Act (FWMA) aims to implement the findings of the 2007 Pitt Review and co-ordinate control of drainage and flood issues. There are a number of increased responsibilities within the Act that affect adoption of SuDS features and the role of the Environment Agency to expand on the mapping data they provide. The implementation of SuDS features has many beneficial impacts on the treatment of surface water during remediation works.
Water Resources Act 1991	Section 24 – The Environment Agency is empowered under this Act to maintain and improve the quality of 'controlled' waters Section 85 – It is an offence to cause or knowingly permit pollution of controlled waters Section 88 – Discharge consents are required for discharges to controlled waters
Water Framework Directive (2000)	The Water Framework Directive (WFD) requires all inland and coastal waters to reach 'good' chemical and biological status by 2015. Flood risk management is unlikely to have a significant impact on chemical water quality except where maintenance works disturb sediment (such as de-silting) or where pollutants are mobilised from contaminated land by floodwaters. The main impact of the WFD on flood risk management, both now and in the future, relates to the ecological quality of water bodies. Channel works, such as straightening and deepening, or flood risk management schemes that modify geomorphological processes can change river morphology. The WFD aims to protect conservation sites identified by the EC Habitats Directive and Birds Directive that have water-related features, by designating them as 'protected sites'.

5.2 Local policy

Local policies ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding and making development safe without increasing flood risk elsewhere and where possible, reducing flood risk. The latest Folkstone & Hythe District Council was adopted in September 2020. There policies have been considered in **Table 5.2**.

Table 5.2: Local Policy

LDF document	Key provisions and policies
Places & Policies Local Plan 2020[7]	'**PolicyCC3** **Sustainable Drainage Systems (SuDS)** Development will be permitted where: 1. Surface water is managed close to its source and on the surface where reasonably practicable to do so; 2. Priority is given to the use of 'ecosystem services' as defined in the Planning Practice Guidance; 3. Water is seen as are source and is reused where practicable, offsetting potable water demand, and that a water sensitive approach is taken to the design of the development; 4. The features that manage surface water are commensurate with the design of the development in terms of size, form and materials and make an active contribution to place-making; 5. Surface water management features are multi-functional wherever possible in their land use; 6. There is no discharge from the developed site for rainfall depths up to 5mm of any rainfall event; 7. The run-off from all hard surfaces receives an appropriate level of treatment in accordance with Sustainable Drainage Systems guidelines, SuDS Manual (CIRIAC753), to minimise the risk of pollution; 8. Major development accords with Kent County Council's Drainage and Planning Policy Statement 2017or success or document; 9. Development adjacent to a waterbody actively seeks to enhance the water body in terms of its hydromorphology , biodiversity potential and setting; and 10.All hard surfaces are permeable surfaces where reasonably practicable. The district is one of the driest districts in England, and this is only likely to increase given the likely impacts of climate change. Mechanisms to ensure the effective collection and reuse of water should be designed into any surface water drainage system. Any development should also ensure the drainage design is resilient to these future changes.

[7] Places & Policies Local Plan, Folkstone & Hythe District Council, September 2020

5.3 Area guidance

Table 5.3: Area Guidance

LDF document	Key provisions and policies
The Kent Design Guide Making It Happen – Sustainability (Drainage Systems)[8]	The main points from the document are as follows: • In all cases the drainage design must include an appropriate allowance for climate change to the runoff from the 100-year return period design rainstorm to allow for the predicted effects of climate change. • The total discharge from the site should aim to mimic greenfield rates. The discharge from the site should be restricted to the theoretical greenfield runoff rates for each of the 1, 30 and 100 year return period storms. • The acceptable calculation methods are specified in Ciria SuDS Manual, Report C753 (2015) or as updated. When greenfield rates calculations result in a total discharge from the site of less than 5 litres/second, a rate of 2 litres/second may be used • The drainage system should be designed to reflect the natural catchment. This supposes that surface flows are not directed to other catchments and that means a pumping system is a last resort. • For large sites, where infiltration is not used, long-term storage must be provided to store the additional volume of runoff caused by any increase in impermeable area. This is in addition to the attenuation storage required to address flow rates. • The long-term storage should discharge at a rate not exceeding 2 litres/second/hectare. The acceptable calculation methods are specified in the Defra/EA technical report Preliminary rainfall runoff management for developments, Report W5-074/A/TR/1, Revision E (2012) or as updated. • An absolute minimum vertical distance of 1m must be provided between the bottom of the infiltration measure and the seasonal high ground water table or bedrock layer.
Drainage and Planning Policy – a Local Flood Risk Management Strategy Document[9]	The main points from the document are as follows: • SuDS Policy 1: Follow the drainage hierarchy • SuDS 2: Deliver effective drainage design - KCC will generally require the use of the more detailed and up

[8] The Kent Design Guide Making It Happen – Sustainability (Drainage Systems), Kent County Council, no date

[9] Drainage and Planning Policy – a Local Flood Risk Management Strategy Document, Kent County Council, December 2019

	➢ to date FEH13 dataset within detailed drainage design submissions. ➢ Given advances in technology and design of flow controls, it is now possible to achieve controlled flow rates of 2 l/s. • SuDS Policy 4: Seek to Reduce and Avoid Existing Flood Risk • SuDS Policy 5: Drainage Sustainability and Resilience ➢ To take account of possible future conversion of permeable surfaces to impermeable over time (e.g. surfacing of front gardens to provide additional parking spaces, extensions to existing buildings, creation of large patio areas). Consideration of urban creep should be assessed for residential developments. • SuDS Policy 6: Sustainable Maintenance • SuDS Policy 7: Safeguard Water Quality • SuDS Policy 8: Design for Amenity and Multi-Functionality • SuDS Policy 9: Enhance Biodiversity

5.4 Site-specific consultation

As part of this assessment, the following authorities have been contacted to obtain relevant data/guidance and establish key site constraints. Key findings are referred to in the relevant part of Section 4 and full details are contained in the relevant appendices.

5.4.1 Kent County Council

The Flood and Water Management department at KCC provided a response to the pre-development enquiry sent by RSK. This request is included in **Appendix D**, and provides the following information:

- Due to geology, infiltration is likely to be highly variable across the site;
- There is one incident of historic flooding along the A20 Main Road from the 'railway bridge to the end of the village', this flooded in February 2014;
- There are no known surface water drainage features within the site boundary;
- Previous planning applications in the area have suggested there may be a culvert to the east of the site which crosses the A20 and runs north to the ordinary watercourse located at Elm Tree Farm;
- Highway gullies suggest a separate positive drainage system for the public highway;
- The site is likely to have groundwater within 3m of the surface for at least part of the year;
- It is recommended that infiltration is used to dispose of surface water runoff as it appears this may mimic the existing drainage of the site;

- Discharge to the combined sewers should only be considered when there are no alternatives. There may be issues with capacity as indicated by sewer flooding incidents in the area. It is recommended consultation with Southern Water is taken if required.

5.4.2 Environment Agency

The EA was formally consulted as part of this assessment. The response from this request is included as **Appendix F**. The EA confirmed the site is within Flood Zone 1 and do not have any records of historic flooding in the area.

6 SOURCES OF FLOOD RISK

6.1 Criteria

In accordance with the NPPF and advice from the EA, an assessment of the risk associated with various flooding sources is required along with consideration of the effects of climate change over the design life of the development (in this case assumed to be 100 years).

The EA's most recent climate change guidance, published in May 2022[10], should be referenced in order to identify the appropriate peak river flow and rainfall intensity allowances for the scheme. The appropriate allowance for peak river flow is based on the site's location in the country, the lifetime of development, the relevant flood zone and the vulnerability of the proposed end use.

The flood risk elements that need to be considered for any site are defined in BS 8533 'Assessing and managing flood risk in development Code of practice'[11] as the "Forms of Flooding" and are listed as:

- Flooding from rivers (fluvial flood risk);
- Flooding from the sea (tidal flood risk);
- Flooding from the land;
- Flooding from groundwater;
- Flooding from sewers (sewer and drain exceedance, pumping station failure etc); and
- Flooding from reservoirs, canals and other artificial structures.

The following section reviews each of these in respect of the subject site.

6.2 Definitions of Risk

Table 6.1: Flood Map for Planning Risk Zoning

Flood Zone	Description
Flood Zone 1	Land assessed as having a less than 1 in 1,000 annual probability of river or sea flooding (<0.1%)
Flood Zone 2	Flood Zone 2 - land assessed as having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (1% – 0.1%), or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.5% – 0.1%) in any year

[10] Environment Agency, 'Guidance: Flood Risk Assessments: Climate Change Allowances'. https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances, May 2022.

[11] BSI, 'BS 8533-2017 Assessing and managing flood risk in development Code of practice', December 2017.

Flood Zone	Description
Flood Zone 3	Land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year.
Flood Zone 3b	Land having the potential to flood for storm events up to the 1 in 30 year return period (>3.33% annual probability of flooding occurring). It is classified as 'functional floodplain'

Table 6.2: Flood Risk from Rivers or the Sea and Flood Risk from Surface Water

Flood Risk	Description
High	High risk means that each year this area has a chance of flooding of greater than 3.3%. 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.
Medium	Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%. 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.
Low	Low risk means that each year this area has a chance of flooding of between 0.1% and 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.
Very Low	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.

Table 6.3: Flood Risk category matrix from Reservoirs, Groundwater, sewers and other artificial sources

Threat Probability	Low Impact	Medium Impact	High Impact
High	Medium	Medium	High
Medium	Low	Medium	Medium
Low	Low	Low	Medium
Very Low	Very Low		

6.3 Flooding from rivers (fluvial flood risk)

6.3.1 Main Rivers

The EA Flood Zone mapping study for England is available on their website at: https://flood-map-for-planning.service.gov.uk.

The latest EA published flood zone map (**Figure 6.1**), which does not take into account the effects of flood defences, shows the site lies within Flood Zone 1.

In December 2013, the EA released an additional form of mapping 'Risk of Flooding from Rivers and Sea', which is available at:

https://flood-warning-information.service.gov.uk/long-term-flood-risk

The latest 'Risk of Flooding from Rivers and Sea' flood map (**Figure 6.2**), which shows the EA's assessment of the likelihood of flooding from rivers and the sea at any location and is based on the presence and effect of all flood defences, predicted flood levels, and ground levels, indicates that the site is at '**very low**' risk of flooding

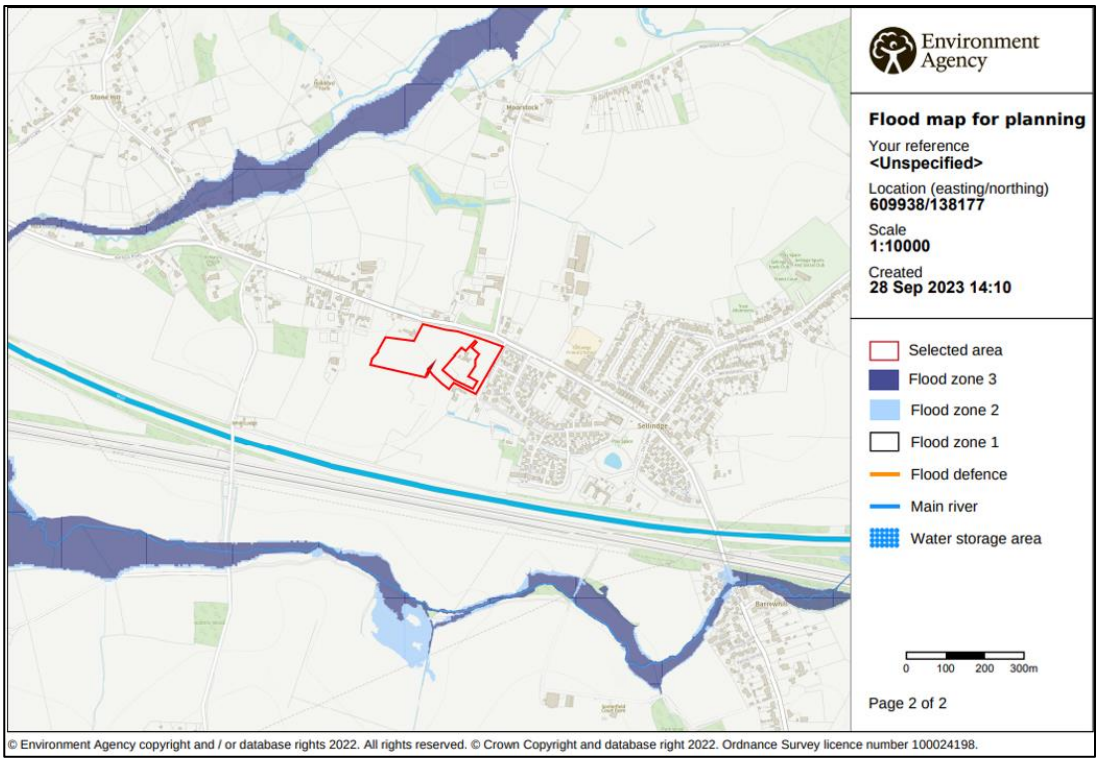


Figure 6.1: Environment Agency 'Flood map for planning'

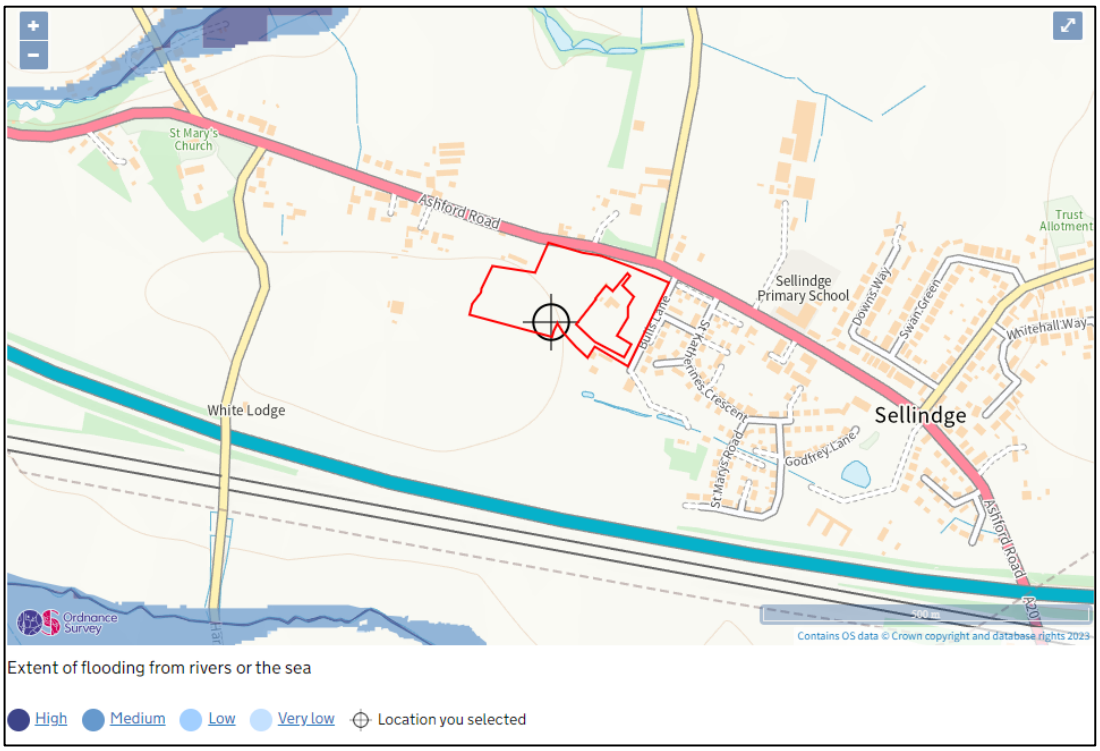


Figure 6.2: Environment Agency Extent of Flooding from Rivers or the Sea mapping (September 2023)

6.3.2 Climate change

Fluvial flooding is likely to increase as a result of climate change. A greater intensity and frequency of precipitation is likely to raise river levels and increase the likelihood of a river overtopping its banks. This will have no impact to the risk to the site and will remain very low risk.

6.4 Flooding from the sea (tidal flood risk)

The site is not considered to be a risk from tidal flooding due to its inland location therefore the resultant tidal flood risk is considered to be **very low.**

6.5 Flooding from the land (surface water flood risk)

If intense rain is unable to soak into the ground or be carried through manmade drainage systems, for a variety of reasons, it can run off over the surface causing localised floods before reaching a river or other watercourse.

Generally, where there is impermeable surfacing or where the ground infiltration capacity is exceeded, surface water runoff can occur. Excess surface water flows from the site are believed to drain naturally via overland flow or through infiltration.

The EA's surface water flood map (**Figure 6.3**) shows that the risk posed to the site from pluvial flooding is considered as **very low**. There is an isolated and small area of high surface water flood risk on the northern boundary of the site, correlating with a low area of relief along the northern boundary.

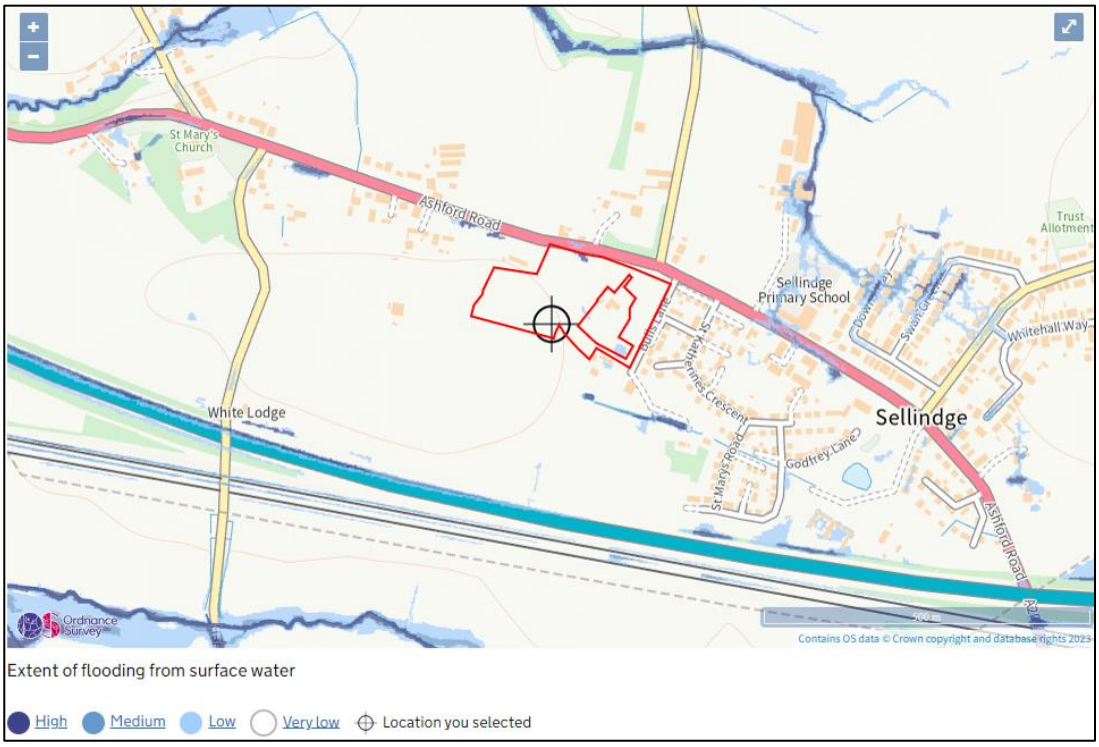


Figure 6.3: Environment Agency 'Flood risk from surface water' map (accessed September 2023

6.5.1 Climate change

Surface water flooding is likely to increase as a result of climate change in a similar ratio to fluvial flooding. Increased intensity and frequency of precipitation is likely to lead to reduced infiltration and increased overland flow. Climate change guidance for rainfall intensity is included with the Climate Change Allowances Guidelines. As the climate change allowance is to be included in the drainage calculations then there will be little to no increase in flood risk to the proposed development as a result.

6.6 Flooding from groundwater

Groundwater flooding tends to occur after much longer periods of sustained high rainfall. Higher rainfall means more water will infiltrate into the ground and cause the water table to rise above normal levels. Groundwater tends to flow from areas where the ground level is high, to areas where the ground level is low. In low-lying areas the water table is usually at shallower depths anyway, but during very wet periods, with all the additional

groundwater flowing towards these areas, the water table can rise up to the surface causing groundwater flooding.

Trial pit testing undertaking in 2019 and 2022 encountered groundwater between 2.45m bgl and 3.0m bgl in the north east of the site.

From the above and due to the sporadic nature of groundwater flooding, the design of the development and the possibility of groundwater emergence at the site, it is unlikely that groundwater flooding would affect the development. The resultant groundwater flood risk is considered to be **low**.

6.6.1 Climate change

Climate change could increase the risk of groundwater flooding as a result of increased precipitation filtering into the groundwater body. If winter rainfall becomes more frequent and heavier, groundwater levels may increase. Higher winter recharge may however be balanced by lower recharge during the predicted hotter and drier summers. This is less likely to cause a significant change to flood risk than from other sources, since groundwater flow is not as confined. It is probable that any locally perched aquifers may be more affected, but these are likely to be isolated. The change in flood risk is likely to be low.

6.7 Flooding from sewers

Flooding from artificial drainage systems occurs when flow entering a system, such as an urban storm water drainage system, exceeds its conveyance capacity, the system becomes blocked or it cannot discharge due to a high water level in the receiving watercourse. A sewer flood is often caused by surface water drains discharging into the combined sewer systems; sewer capacity is exceeded in large rainfall events causing the backing up of floodwaters within properties or discharging through manholes.

Most adopted surface water drainage networks are designed to the criteria set out in DCG Sewerage Sector Guidance[12]. One of the design parameters is that sewer systems be designed such that no flooding of any part of the site occurs in a 1 in 30 year rainfall event. By definition a 1 in 100 year event would exceed the capacity of the surrounding sewer network as well as any proposed drainage.

As the site ground levels are elevated above the surrounding highway drains and combined sewers then the flood risk to the site and the proposed development is considered **very low**.

New sewers constructed as part of the development will be construction in line with best practice to reduce the risk of sewer flooding on site.

6.7.1 Climate change

The impact of climate change is likely to be negative regarding flooding from sewers. Increased rainfall and more frequent flooding put existing sewer and drainage systems

[12] Design and Construction Guidance Sewerage Sector Guidance, Appendix C, May 2021.

under additional pressure resulting in the potential for more frequent surcharging and potential flooding. This would increase the frequency of local sewer flooding but will not impact the site.

6.8 Reservoirs

Flood events can occur from a sudden release of large volumes of water from reservoirs.

The EA mapping was updated in 2021 to demonstrate the potential maximum extent of flooding for two scenarios - a "dry day scenario" in which river levels are "normal", and a "wet day scenario" where the flooding from the reservoir coincides with flooding from rivers.

The EA reservoir flood map (reproduced as **Figure 6.4**) shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. Since this is a prediction of a worst-case scenario, it is unlikely that any actual flood would be this large.

The mapping shows the site is outside reservoir flood extents for when river levels are normal and for when rivers are in flood.

As a reservoir breach is considered unlikely the resultant flood risk is considered to be **very low**.

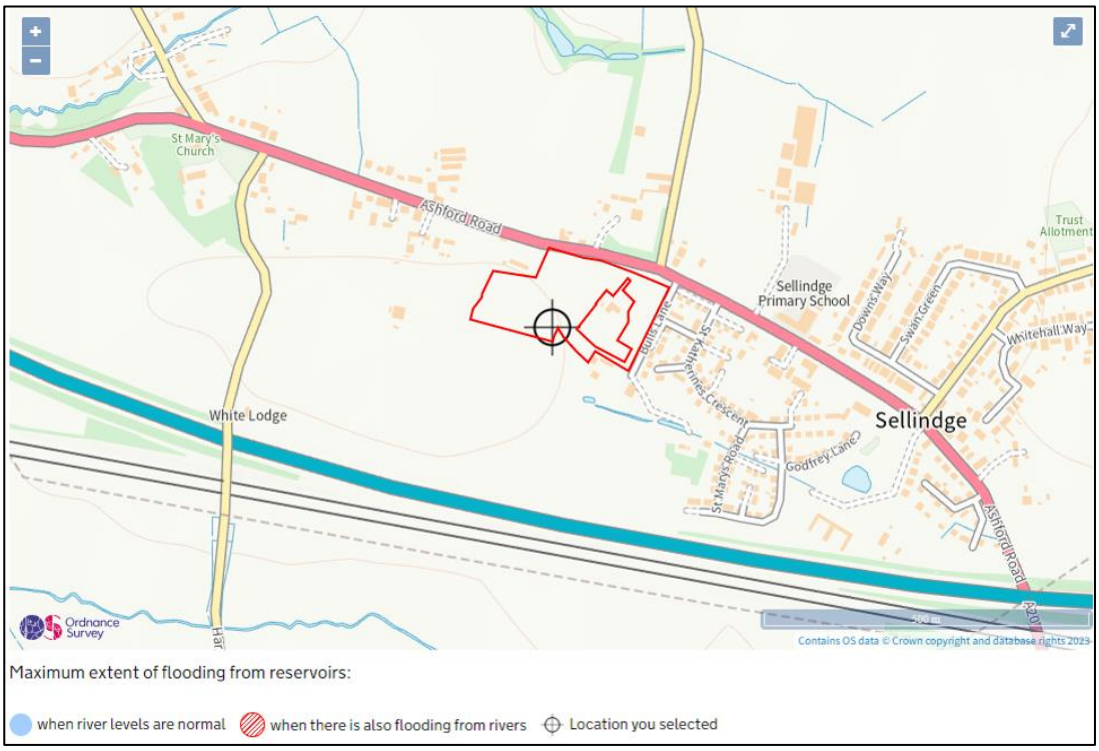


Figure 6.4: Environment Agency 'Maximum extent of flooding from reservoirs' map (accessed September 2023

6.8.1 Climate change

Reservoirs can be managed over time, controlling inflow/outflow of water and therefore there is the capacity to control the effects of climate change. Increased rainfall has the potential to increase base flow, but this should be minimal. It is unlikely that there will be a substantial change to the risk of flooding for this site.

6.8.2 Canals

There are no canals within the vicinity of the site as such there is no risk to the site from this source.

6.8.3 Blockages of artificial drainage systems

There is a possibility that flooding may result due to culverts and/or sewers being blocked by debris or structural failure. This can cause water to backup and result in localised flooding, as well as placing areas with lower ground levels at risk.

There are no artificial drainage systems within the vicinity of the site.

Therefore, the risk of flooding from artificial drainage systems is considered to be **very low**.

Climate change is unlikely to affect the flooding risk to the site from such blockages.

6.8.4 Historic flooding

There are no known recorded incidents of fluvial or surface water flooding at the proposed development site.

7 PLANNING CONTEXT

7.1 Land use vulnerability

Table 2 of the PPG indicates the compatibility of various land uses in each flood zone, dependent on their vulnerability to flooding. Table 7.1 below is reproduced from Table 2 of PPG.

Table 7.1: Flood risk vulnerability and flood zone 'compatibility'

Flood Risk Vulnerability Classification		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	Appropriate	Appropriate	Appropriate	**Appropriate**	Appropriate
	Zone 2	Appropriate	Appropriate	Exception Test Required	Appropriate	Appropriate
	Zone 3a	Exception Test Required	Appropriate	Should not be permitted	Exception Test Required	Appropriate
	Zone 3b functional floodplain	Exception Test Required	Appropriate	Should not be permitted	Should not be permitted	Should not be permitted

With reference to Table 2 of the PPG, the proposed development, based on its residential use, is classed as 'more vulnerable'. This classification of development is appropriate for areas within Flood Zone 1 and therefore appropriate for the subject site.

7.2 Sequential Test

The Sequential Test aims to direct new development to areas with the lowest probability of flooding. The site has been identified as located within Flood Zone 1 with no other flooding issues from other sources. It is therefore considered to pass the Sequential Test.

8 SURFACE WATER DRAINAGE ASSESSMENT

8.1 Scope

As development is greater than 1Ha in size, the EA and the LLFA requires such development to focus on the management of surface water run-off. This section discusses the potential quantitative effects of the development on both the risk of surface water flooding on-site and elsewhere within the catchment, as well as the type of potential SuDS features that could be incorporated as part of the framework development plan.

The NPPF states that SuDS should be considered wherever practical. The use of SuDS is also encouraged by regional and local policy (see Section 6.7). In accordance with local and national guidance, the surface water drainage strategy should seek to implement a SuDS hierarchy that aspires to achieve reductions in surface water runoff rates to Greenfield rates (Preferred Standard).

In addition, Building Regulations Part H[13] requires that the first choice of surface water disposal should be to discharge to an adequate soakaway or infiltration system, where practicable. If this is not reasonably practicable then discharge should be to a watercourse, the least favourable option being to a sewer (surface water before combined). Infiltration techniques should therefore be applied wherever they are appropriate.

8.2 Pre-development situation

The existing site area is 2.95Ha and is considered as Greenfield. The site drains naturally by allowing surface water to follow the topographic falls of the site north-eastwards towards the northern boundary where it may then freely drain to the highway. There will also be interception of surface water runoff by vegetation and topsoil surfaces which will allow for limited infiltration to the ground.

In order to estimate the existing Greenfield Runoff Rate for the proposed developable impermeable area (0.65Ha), the pro-rata IoH 124 (ICP SuDS) method[14] of calculation has been used. These calculations are contained in **Appendix G**. Greenfield Runoff Rates for this area are shown in **Table 8.1**.

[13] HM Government (2010 with 2013 amendments), 'The Building Regulations 2010: Approved Document H - Drainage and Waste Disposal (2002 Edition incorporating 2010 amendments)'

[14] Institute of Hydrology (IoH), 'Flood Estimation for small catchments - Report 124', 1994

Table 8.1: ICP SuDS surface water runoff (for 0.65Ha of developable area only)

Return period	Peak flow (l/s) Total Site Area
QBar	1.29
1 in 1 year	1.1
1 in 30 year	2.98
1 in 100 year	4.13

8.3 Off site discharge options

8.3.1 Infiltration

Infiltration should be considered as the primary option to discharge surface water from the developed site. The effectiveness of infiltration is completely dependent on the physical conditions at the site. Potential obstacles include:

- Local variations in permeability preventing infiltration – Infilitration is shown to be unfeasible on the most recent soakaway site investigations;
- Shallow groundwater table - For infiltration drainage devices, Building Regulation approved document H2 states that these *"should not be built in ground where the water table reaches the bottom of the device at any time of the year"*. Groundwater was recorded at depths of 2.45m bgl at the low point of the site, and;
- Source Protection Zones - As discussed above, the site is not located within a Groundwater Source Protection Zone.

Based on the results obtained from the most recent site investigations, infiltration-based SuDS are not considered to be a feasible option for surface water drainage as it will be difficult to prove a 1.0m clearance between the base of the infiltration SuDS features and the groundwater level and negligible infiltrations rates were recorded .

8.3.2 Discharge to watercourse

There are no watercourses within the site boundary.

8.3.3 Discharge to surface water sewer

There are no surface water sewers within close proximity of the site.

8.3.4 Discharge to combined sewer

A pre-development enquiry was submitted to Southern Water to assess the feasibility of restricted surface water discharge to the combined sewer manhole within the site boundary. Southern Water advised there was insufficient capacity to accept surface water runoff from the proposed development.

8.3.5 Discharge to highway drainage system

There is a highway drainage system outside of the site boundary along Ashford Road, as indicted by the presence of several highway gullies. The highway gullies are likely to be interconnected by an existing highway drainage culvert along Ashford Road.

8.4 Post-development situation

The proposed development is approximately 22.0% impermeable (based on total site area as per **Table 3.1**), which, if unmitigated, will result in an increase in surface water runoff across the site. It will therefore be necessary to manage surface water on-site in order to limit the discharge of surface water off-site to an agreed rate, to provide sufficient on-site attenuation up to the 1 in 100 year climate change rainfall event and to provide improvements to water quality through appropriate source treatment. It is proposed to provide a surface water drainage strategy which will closely mimic the pre-development surface water drainage of the site.

8.4.1 Discharge Rate

The 'Kent Design Guide Making It Happen – Sustainability' document (**Table 5.2**) advises that developments should aim to mimic greenfield runoff rates from the 1 in 1 year rainfall event. However, as the rate is relatively small at 1.1 l/s, the discharge rate has been limited to 2.0 l/s as recommended within the Kent County Council Drainage and Planning Policy December 2019 Section 5.2.2 minimum discharge rate guidance. This will mitigate any issues associated with blockages with flow controls limited to less than 2.0 l/s.

It is proposed to discharge surface water runoff to the highway drainage system to the north of the site, subject to confirmation from the high authority (KCC) and the LLFA. The discharge location mimics the existing scenario where greenfield runoff from the site sheds from the sloped site and discharges at unrestricted greenfield rates onto Ashford Road.

8.4.2 Storage estimates

To determine the volume of attenuation storage that would be required on the site, the WinDes ' 4-Stage Design Guide' tool has been used. This allows for an attenuation figure to be calculated based upon basin dimensions, rainfall values (FEH) and permitted discharge rates. An allowance for 1 in 4 side slopes has been made in the calculations. These volumes can be later revised at detail design stage by the introduction of specific flow control methods.

The surface water drainage design utilises a below ground cellular storage for the upper end of the site which discharges at 2.5l/s to the main drainage network. The basin is located at the lower end of the site which will receive runoff from the surrounding development area and from the geocellular crates. This is represented using the 'Cascade' feature in the '4-Stage Design Guide'.

The attenuation will provide surface water storage and attenuation for the 1 in 100 year storm plus 45% climate change event including an allowance of 10% for urban creep (50% permeability of developable area + 10% for urban creep). The indicative catchment sizes are calculated in **Table 8.2**.

A climate change allowance of a 45% increase has been used based on the EA's Peak Rainfall Intensity Allowances published in May 2022. The guidance recommends to design for the upper end allowance in the 1% annual exceedance probability event for Development with a lifetime beyond 2100. The allowance used is specific to the Stour Management Catchment.

Table 8.2: Catchment area calculations

Drainage Catchment Area	Developable Area (Ha)	Assumed Impermeable Are (50% Dev area) (Ha)	Urban Creep uplift (+10%) (Ha)
Cellular Storage - Catchment A	0.69	0.35	0.38
Basin – Catchment B	0.61	0.31	0.34
Total Area	1.37	0.66	0.72

The indicative attenuation designs are outlined in **Table 8.3**. The calculations of attenuation are provided in **Appendix H**.

Table 8.3: Indicative attenuation calculations for 100 year plus climate change scenario

Drainage Catchment Area	Impermeable area of catchment with Urban creep (Ha)	Discharge Rate	Indicative Storage Dimensions		
			Maximum Volume Required (m^3)	Surface Area (m^2)	Depth (m)
Cellular Storage - Catchment A	0.38	2.5 l/s	358.4	220	1.8
Basin – Catchment B	0.34	2.0 l/s	640.2	915.4	0.9

An allowance for 300mm permanent water level is allowed for the bottom of the attenuation basin, this increases the total basin water level to 1.2m depth for the 100 year plus climate change storm event.

8.4.3 Proposed drainage strategy

The proposed indicative outline drainage strategy is provided in **Appendix I** and outlines the following details regarding surface water drainage:

- Following the SuDS Hierarchy, infiltration based methods of surface water disposal are not considered feasible and an outline surface water drainage strategy based on discharge to watercourse is provided;
- Surface water discharge will be formally connected to the highway drainage system on Ashford Road, subject to agreement from the highway authority (KCC) and the LLFA. The levels of the point of connection at the highway drainage system are to be confirmed;
- The discharge from the site will restricted to 2.0l/s (minimum allowable rates) for all events up to the 100 year plus climate change storm event;
- The attenuation will provide surface water storage and attenuation for the 1 in 100 year storm plus 45% climate change event including an allowance of 10% for urban creep (50% permeability of developable area + 10% for urban creep), as per **Table 8.3**;
- The upper end of the site will drain to below ground cellular attenuation to slow the conveyance of surface water runoff to the basin. The cellular attenuation will discharge at 2.5l/s to the downstream drainage network and which will drain to the attenuation basin. Total surface water discharge from the site will not exceed 2.0l/s.
- The site will be drained via gravitational falls within surface water conveyance pipes towards areas of lower topography for attenuation;
- Permeable paving could be incorporated within private roads, shared surfaces and driveways that are part of the development. These areas of paving can be used to collect and store runoff from the houses and surrounding hardstanding areas before joining the on-site surface water network that flows into the attenuation structure. Permeable paving reduces the volume of suspended sediment and hydrocarbon pollution associated with residential developments, providing effective water quality improvements. Adopted roads will not be constructed using permeable paving due to ownership and future maintenance issues, where responsibility will most likely lie with the highway authority. As the surface area available for permeable paving is currently unknown then the storage volume of permeable paving has not been included in the calculations at this stage;
- Consent should be obtained from the LLFA or EA should any works be required near to a watercourses as part of the development.
- FEH rainfall data has been used for the calculations as per SuDS Policy 2 outlined in the KCC guidance;
- Urban creep as been used for drainage calculations as per SuDS Policy 5 outlined in the KCC guidance;
- A permanent water level is to be provided which will enhance the amenity and biodiversity value and characteristic of the basin, in line with SuDS Policy 8 and 9 in the KCC guidance.

The dimensions, volumes and location of the SuDS features will need to be revised as the masterplan develops and during the detailed planning stage. Detailed design of individual features is not part of the scope of this report. Preliminary design criteria have been based upon guidance given in the CIRIA publication ‘The SUDS Manual.

8.4.4 Foul Drainage

The foul drainage from the proposed development will drain to a foul water pump station location along the eastern periphery of the development. The pump station will lift flows via a rising main to a water recycling centre in the adjacent development to the west.

9 CONCLUSIONS AND RECOMMENDATIONS

This FRA complies with the NPPF and Planning Practice Guidance. This FRA demonstrates that flood risk from all sources has been considered in the proposed development. It is also consistent with the Local Planning Authority requirements with regard to flood risk.

The majority of the site lies in an area designated by the EA as Flood Zone 1, outlined to have a chance of flooding of less than 1 in 1,000 (<0.1%) in any year.

NPPF sets out a Sequential Test, which states that preference should be given to development located within Flood Zone 1. This flood risk assessment demonstrates that the requirements of the Sequential Test have been met, with the developable area of the site located within Flood Zone 1 and 'More Vulnerable' classification of the development.

This flood risk assessment has considered multiple sources of flooding and concluded the following:

Table 9.1: Flood risk summary

Source	Level of risk	Comments
Fluvial	Very Low	The whole of the site is located within an area designated as Flood Zone 1 by the Environment Agency. As a result, the risk from this source in this location is considered low.
Tidal	Very Low	The site is inland and elevated.
Surface water	Very Low	The existing risk is considered very low. Risk as a result of the proposed development can remain low with the following a surface water drainage strategy which is demonstrated to be feasible.
Groundwater	Low	Groundwater levels encountered in trial pits have shown that Groundwater risk is considered low.
Sewers	Very Low	Sewer records indicated there is a low likelihood of risk from sewers.
Reservoir	Very Low	Reservoir flooding is not a risk to the site
Artificial sources	Very Low	There are no confirmed sources of artificial flood risk.

The proposed development will increase the impermeable area on-site resulting in an increase in surface water runoff if unmanaged. The proposals will follow best practice

regarding site drainage to ensure that any surface water runoff from the development is managed, ensuring flood risk is not increased elsewhere.

In order to prevent flooding, both on and off the site, a surface water drainage strategy has been devised which shows the feasibility of managing surface water runoff sustainably. The surface water drainage features will be designed to restrict runoff from the site to 2.0l/s and store the volume of water associated with a 1 in 100 year rainfall event, plus an additional allowance to account for increased rainfall due to climate change, providing a betterment over the existing scenario.

As safe pedestrian and vehicular access, to and from the development, will be achievable under all flood conditions, a formal evacuation plan is not required.

Overall, taking into account the above points, the development of the site should not be precluded on flood risk grounds.

APPENDIX A
RSK GROUP SERVICE CONSTRAINTS

1. This report and the drainage design carried out in connection with the report (together the "Services") were compiled and carried out by RSK LDE Ltd (RSK) for Gladman Developments Ltd (the "client") in accordance with the terms of a contract between RSK and the "client" dated August 2022. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable civil engineer at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services, which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The phase II or intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the appropriate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
TOPOGRAPHIC SURVEY

TREE SCHEDULE

No.	DIAM.	SPREAD Ø	HEIGHT
TE/1	2.10	14	9
TE/2	1.10	16	19
TE/3	0.75	16	25
TE/4	0.60	14	25
TE/5	0.40	8	10
TE/6	0.80	12	10
TE/7	0.60	15	15
TE/8	0.80	12	12
TE/9	0.70	4	7
TE/10	0.50	14	14
TE/11	0.50	14	14
TE/12	0.50	14	14
TE/13	0.55	14	14
TE/14	0.55	14	14
TE/15	0.80	10	14
TE/16	0.50	14	12
TE/17	1.00	16	14
TE/18	0.60	10	10
TE/19	0.30	6	4
TE/20	0.85	20	18
TE/21	0.40	4	4
TE/22	0.30	4	6
TE/23	0.30	4	6
TE/24	0.30	6	4
TE/25	0.40	6	6
TE/26	0.90	18	16
TE/27	1.10	12	16
TE/28	0.40	10	6
TE/29	0.40	10	6
TE/30	0.30	8	4
TE/31	0.40	8	6
TE/32	0.40	8	6
TE/33	1.00	16	14
TE/34	0.50	6	8
TE/35	0.50	6	8
TE/36	0.40	6	8
TE/37	0.30	6	8
TE/38	0.60	8	6
TE/39	0.50	12	12
TE/40	0.50	12	12
TE/41	1.85	16	18
TE/42	1.30	20	18
TE/43	0.20	6	5
TE/44	0.85	14	18
TE/45	0.60	8	8
TE/46	0.90	20	20
TE/47	0.70	14	16
TE/48	0.40	10	12
TE/49	0.40	10	12
TE/50	0.60	14	12
TE/51	0.50	16	16
TE/52	0.60	18	12
TE/53	0.40	8	8
TE/54	0.45	16	16
TE/55	0.30	10	12
TE/56	0.40	14	12
TE/57	0.40	16	12
TE/58	0.60	7	10
TE/59	0.40	10	14
TE/60	0.45	16	14
TE/61	0.25	10	10
TE/62	1.00	20	18
TE/63	0.60	17	18
TE/64	0.50	12	16
TE/65	0.50	8	12
TE/66	0.20	8	10
TE/67	1.20	14	18
TE/68	0.50	12	16
TE/69	0.50	12	16
TE/70	1.00	16	22
TE/71	0.40	10	12
TE/72	1.00	19	22
TE/73	0.80	24	22
TE/74	0.40	10	12
TE/75	0.80	18	18
TE/76	0.30	10	14
TE/77	0.60	14	16
TE/78	0.70	14	18
TE/79	0.70	14	18
TE/80	0.40	10	16
TE/81	0.20	8	8
TE/82	1.60	24	18
TE/83	0.35	12	18
TE/84	0.60	18	18
TE/85	0.50	18	16
TE/86	0.15	8	8
TE/87	0.45	16	18
TE/88	0.20	8	10
TE/89	0.40	16	16
TE/90	0.70	18	18
TE/91	0.40	16	16
TE/92	0.25	10	10
TE/93	1.20	20	20
TE/94	0.85	20	20
TE/95	1.20	20	18
TE/96	0.85	14	18
TE/97	0.70	18	18
TE/98	0.70	18	18
TE/99	0.60	16	16
TE/100	0.70	16	16
TE/101	0.50	16	16
TE/102	0.70	16	16
TE/103	0.50	16	16
TE/104	0.55	16	16
TE/105	0.40	16	16
TE/106	0.50	12	14
TE/107	0.70	6	10
TE/108	0.70	6	10
TE/109	0.30	6	8
TE/110	0.30	6	8
TE/111	1.30	18	20
TE/112	0.90	16	22
TE/113	1.10	16	16
TE/114	0.50	10	16
TE/115	0.50	10	16
TE/116	0.70	12	18
TE/117	0.50	10	12
TE/118	1.20	20	24
TE/119	0.90	18	24
TE/120	0.90	22	24
TE/121	0.50	10	12
TE/122	0.90	22	16
TE/123	0.75	14	16
TE/124	0.80	22	16
TE/125	0.90	22	16
TE/126	0.40	6	6
TE/127	1.30	20	11
TE/128	1.30	20	20
TE/129	0.40	8	8
TE/130	0.50	12	10

TREE DIAMETER MEASURED APPROXIMATELY 1.5M ABOVE GROUND LEVEL. TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE GENERALISED CANOPY SIZE. TREE BOLE MAY NOT SIT CENTRALLY TO THE CANOPY. TREE HEIGHT ESTIMATED FROM GROUND LEVEL.

N

NOTES

THIS SURVEY IS ORIENTATED TO ORDNANCE SURVEY GRID NORTH. THE SURVEY IS TO A PLANE GRID. HORIZONTAL MEASUREMENTS TAKEN FROM THIS SURVEY WILL BE GROUND DISTANCES.

SITE CENTRE: E 609984.295, N 138216.109

LOCAL SCALE FACTOR: 1.0001428

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM GENERATED BY ACTIVE GPS NETWORK.

DRAINAGE:-

NO ALLOWANCE HAS BEEN MADE FOR SUB SURFACE ACCESS TO MANHOLES OR CHAMBERS. ANY PIPE SIZES, DEPTHS OR BELOW GROUND DIMENSIONS ARE TAKEN FROM THE SURFACE AND THUS WILL ONLY BE APPROXIMATE. ANY FLOW TYPES (FOUL WATER, SURFACE WATER OR COMBINED) ARE ASSUMED AND THEREFORE REQUIRE VERIFICATION.

ROAD MARKINGS:-

ROAD MARKINGS DISPLAYED ARE SYMBOLIC. LENGTH, SPACING AND THICKNESS ETC. ARE INDICATIVE ONLY.

LEGEND

30.29 SPOT LEVEL
SURVEY STATION
SAPLING
BUSHES/SHRUB
TREE (INDICATIVE ONLY)
HEDGE/AREA OF UNDERGROWTH
99.90 CONTOUR
GATE
OVERHEAD CABLE
FENCE
1 PHOTOGRAPH LOCATION AND NUMBER

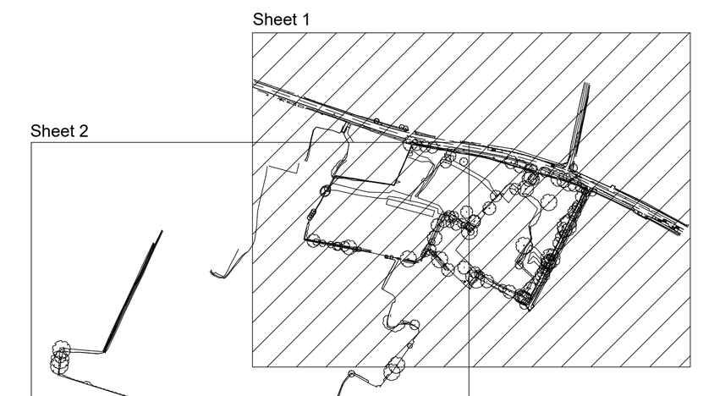
ABBREVIATIONS

ArL	ARCH LEVEL	LB	LETTER BOX
AV	AIR VALVE	LP	LAMPOST
B	BOLLARD	MH	MANHOLE
BB	BELISHA BEACON	MKR	MARKER
BH	BOREHOLE	OHC	OVERHEAD CABLE
BL	BED LEVEL	OpL	OPENING LEVEL
BS	BUS STOP	OSBM	OS BENCHMARK
BT	BT COVER	P	POST
C/B	CLOSED BOARD FENCE	P/R	POST AND RAIL FENCE
C/L	CHAIN LINK FENCE	P/W	POST AND WIRE FENCE
CATV	CABLE TELEVISION COVER	PEC	PEDESTRIAN CROSSING
CC	CONTROL CABIN	PM	PARKING METER
COL	COLUMN	RE	RODDING EYE
Conc/p	CONCRETE PANEL FENCE	RWL	RETAINING WALL
CPY	CANOPY	SAP	SAPLING
CrL	CROWN LEVEL	SEC	SECURITY CAMERA
Csty	CABLE STAY	SGY	STRIP GULLY
CTV	CABLE TELEVISION POINT	SoL	SOFFIT LEVEL
CYR	CYCLE RACK	SP	SIGNPOST
DK	DROPPED KERB	SpL	SPRINGING LEVEL
DP	DOWNPIPE	SV	STOP VALVE
EiP	ELECTRIC INLET POINT	Tac	TACTILE PAVING
EL	ELECTRIC INSPECTION COVER	TCB	TELEPHONE BOX
EP	ELECTRICITY SUPPLY POLE	TE/?	TREE + NUMBER
ER	EARTH ROD	THL	THRESHOLD LEVEL
FH	FIRE HYDRANT	TL	TRAFFIC LIGHT
G	GULLY	ToF	TOP OF FENCE
G/DP	GULLY AND DOWNPIPE	ToW	TOP OF WALL
GP	GATE POST	TP	TELEPHONE POLE
Gpi	GAS PIPE	W/M	WIRE MESH FENCE
GV	GAS VALVE	W/P	WOODEN PANEL FENCE
IC	INSPECTION CHAMBER	WLV	WATER LEVEL
IL	INVERT LEVEL	WM	WATER METER
I/R	IRON RAILING FENCE	WO	WASH OUT
KO	KERB OUTLET		

STATION CO-ORDINATES

STATION	EASTING	NORTHING	LEVEL	DESCRIPTION
STN/2	609929.00	138309.51	66.88	Survey Nail
STN/9	610054.05	138106.91	68.00	Survey Nail
STN/10	610068.78	138119.44	67.69	Survey Nail
STN/50	609821.87	138332.51	66.04	Survey Nail
STN/51	610074.31	138270.07	66.92	Survey Nail
STN/52	610103.82	138257.47	66.70	Survey Nail
STN/53	610135.52	138253.17	66.67	Survey Nail

PLOT LOCATIONS



Rev	Date	Revision notes	By
A	16.06.21	Additional field surveyed.	JW

DO NOT SCALE

Status

INFORMATION

Project

Ashford Road, Sellindge.

Title

TOPOGRAPHICAL SURVEY AS OF 22.08.19 SHEET 1 OF 2

GLADMAN
Gladman House, Alexandria Way
Congleton Business Park
Congleton, Cheshire
CW12 1LB
Tel: 01260 288800
Fax: 01260 288801
www.gladman.co.uk

Drawn By	Publish Date	Scale(s)	Sheet Size
JW/JH	03.09.19	1:500	A0

Project no.	Drawing no.	Revision
2019-070	Topo_01_2D	A

TREE SCHEDULE

No.	DIAM.	SPREAD Ø	HEIGHT
TE/1	2.10	14	9
TE/2	1.10	16	19
TE/3	0.75	16	25
TE/4	0.60	14	25
TE/5	0.40	8	10
TE/6	0.80	12	10
TE/7	0.60	15	15
TE/8	0.80	12	12
TE/9	0.70	4	7
TE/10	0.50	14	14
TE/11	0.50	14	14
TE/12	0.50	14	14
TE/13	0.55	14	14
TE/14	0.55	14	14
TE/15	0.80	10	14
TE/16	0.50	14	12
TE/17	1.00	16	14
TE/18	0.60	10	10
TE/19	0.30	6	4
TE/20	0.85	20	18
TE/21	0.40	4	4
TE/22	0.30	4	6
TE/23	0.30	4	6
TE/24	0.30	6	4
TE/25	0.40	6	6
TE/26	0.90	18	16
TE/27	1.10	12	16
TE/28	0.40	10	6
TE/29	0.40	10	6
TE/30	0.30	8	4
TE/31	0.40	8	6
TE/32	0.40	8	6
TE/33	1.00	16	14
TE/34	0.50	6	8
TE/35	0.50	6	8
TE/36	0.40	6	8
TE/37	0.30	6	8
TE/38	0.60	8	6
TE/39	0.50	12	12
TE/40	0.50	12	12
TE/41	1.85	16	18
TE/42	1.30	20	18
TE/43	0.20	6	5
TE/44	0.85	14	18
TE/45	0.60	8	8
TE/46	0.90	20	20
TE/47	0.70	14	16
TE/48	0.40	10	12
TE/49	0.40	10	12
TE/50	0.60	14	12
TE/51	0.50	16	16
TE/52	0.60	18	12
TE/53	0.40	8	8
TE/54	0.45	16	16
TE/55	0.30	10	12
TE/56	0.40	14	12
TE/57	0.40	16	12
TE/58	0.60	7	10
TE/59	0.40	10	14
TE/60	0.45	16	14
TE/61	0.25	10	10
TE/62	1.00	20	18
TE/63	0.60	17	18
TE/64	0.50	12	16
TE/65	0.50	8	12
TE/66	0.20	8	10
TE/67	1.20	14	18
TE/68	0.50	12	16
TE/69	0.50	12	16
TE/70	1.00	16	22
TE/71	0.40	10	12
TE/72	1.00	19	22
TE/73	0.80	24	22
TE/74	0.40	10	12
TE/75	0.80	18	18
TE/76	0.30	10	14
TE/77	0.60	14	16
TE/78	0.70	14	18
TE/79	0.70	14	18
TE/80	0.40	10	16
TE/81	0.20	8	8
TE/82	1.60	24	18
TE/83	0.35	12	18
TE/84	0.60	18	18
TE/85	0.50	18	16
TE/86	0.15	8	8
TE/87	0.45	16	18
TE/88	0.20	8	10
TE/89	0.40	16	16
TE/90	0.70	18	18
TE/91	0.40	16	16
TE/92	0.25	10	10
TE/93	1.20	20	20
TE/94	0.85	20	20
TE/95	1.20	20	18
TE/96	0.85	14	18
TE/97	0.70	18	18
TE/98	0.70	18	18
TE/99	0.60	16	16
TE/100	0.70	16	16
TE/101	0.50	16	16
TE/102	0.70	16	16
TE/103	0.50	16	16
TE/104	0.55	16	16
TE/105	0.40	16	16
TE/106	0.50	12	14
TE/107	0.70	6	10
TE/108	0.70	6	10
TE/109	0.30	6	8
TE/110	0.30	6	8
TE/111	1.30	18	20
TE/112	0.90	16	22
TE/113	1.10	16	16
TE/114	0.50	10	16
TE/115	0.50	10	16
TE/116	0.70	12	18
TE/117	0.50	10	12
TE/118	1.20	20	24
TE/119	0.90	18	24
TE/120	0.90	22	24
TE/121	0.50	10	12
TE/122	0.90	22	16
TE/123	0.75	14	16
TE/124	0.80	22	16
TE/125	0.90	22	16
TE/126	0.40	6	6
TE/127	1.30	20	11
TE/128	1.30	20	20
TE/129	0.40	8	8
TE/130	0.50	12	10

TREE DIAMETER MEASURED APPROXIMATELY 1.5M ABOVE GROUND LEVEL. TREE SPREADS ARE SYMBOLIC ONLY AND ARE REPRESENTATIVE OF THE GENERALISED CANOPY SIZE. TREE BOLE MAY NOT SIT CENTRALLY TO THE CANOPY. TREE HEIGHT ESTIMATED FROM GROUND LEVEL.

NOTES

THIS SURVEY IS ORIENTATED TO ORDNANCE SURVEY GRID NORTH. THE SURVEY IS TO A PLANE GRID. HORIZONTAL MEASUREMENTS TAKEN FROM THIS SURVEY WILL BE GROUND DISTANCES.

SITE CENTRE: E 609984.295, N 138216.109

LOCAL SCALE FACTOR: 1.0001428

ALL LEVELS RELATE TO ORDNANCE SURVEY DATUM GENERATED BY ACTIVE GPS NETWORK.

DRAINAGE:-

NO ALLOWANCE HAS BEEN MADE FOR SUB SURFACE ACCESS TO MANHOLES OR CHAMBERS. ANY PIPE SIZES, DEPTHS OR BELOW GROUND DIMENSIONS ARE TAKEN FROM THE SURFACE AND THUS WILL ONLY BE APPROXIMATE. ANY FLOW TYPES (FOUL WATER, SURFACE WATER OR COMBINED) ARE ASSUMED AND THEREFORE REQUIRE VERIFICATION.

ROAD MARKINGS:-

ROAD MARKINGS DISPLAYED ARE SYMBOLIC. LENGTH, SPACING AND THICKNESS ETC. ARE INDICATIVE ONLY.

LEGEND

30.29 +	SPOT LEVEL
△	SURVEY STATION
○	SAPLING
○	BUSHES/SHRUB
○	TREE (INDICATIVE ONLY)
≈	HEDGE/AREA OF UNDERGROWTH
99.90	CONTOUR
⋈	GATE
—	OVERHEAD CABLE
—○—	FENCE
①	PHOTOGRAPH LOCATION AND NUMBER

ABBREVIATIONS

ArL	ARCH LEVEL	LB	LETTER BOX
AV	AIR VALVE	LP	LAMPOST
B	BOLLARD	MH	MANHOLE
BB	BELISHA BEACON	MKR	MARKER
BH	BOREHOLE	OHC	OVERHEAD CABLE
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Gpi	GAS PIPE	W/M	WIRE MESH FENCE
GV	GAS VALVE	W/P	WOODEN PANEL FENCE
IC	INSPECTION CHAMBER	WLV	WATER LEVEL
IL	INVERT LEVEL	WM	WATER METER
I/R	IRON RAILING FENCE	WO	WASH OUT
KO	KERB OUTLET		

STATION CO-ORDINATES

STATION	EASTING	NORTHING	LEVEL	DESCRIPTION
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STN/53	610135.52	138253.17	66.67	Survey Nail

PLOT LOCATIONS

*	*	*	*
A	16.06.21	Additional field surveyed.	JW
Rev	Date	Revision notes	By

DO NOT SCALE

Status

INFORMATION

Project

Ashford Road, Sellindge.

Title

TOPOGRAPHICAL SURVEY
AS OF 22.08.19
SHEET 2 OF 2

GLADMAN
Gladman House, Alexandria Way
Congleton Business Park
Congleton, Cheshire
CW12 1LB
Tel: 01260 288800
Fax: 01260 288801
www.gladman.co.uk

Drawn By	Publish Date	Scale(s)	Sheet Size
JW/JH	03.09.19	1:500	A0

Project no.	Drawing no.	Revision
2019-070	Topo_02_2D	A

APPENDIX C
SEWER RECORDS

Order received: 19 July 2019
Order completed: 23 July 2019

Drainage and water enquiry

Commercial

Order reference: LS/U1454703
Your reference: SF27990504000 LKS/Sellindge 2019-70

Search address:

Land at Ashford Road
Ashford
Kent
TN25 6JX

Ordered by:

Searchflow
42 Kings Hill Avenue
West Malling
Kent
ME19 4AJ

For enquiries regarding the information provided in this report, please contact the LandSearch team:

Tel: 0845 270 0212
0330 303 0276 (individual consumers)

Email: searches@southernwater.co.uk

Web: www.southernwater.co.uk

LandSearch
Southern Water Services
Southern House
Capstone Road
Chatham
Kent
ME5 7QA

COMMERCIALDW
DRAINAGE AND WATER ENQUIRY

Southern Water

What you need to know about...

Private sewer transfer

On 1 October 2011, ownership of private sewers and lateral drains changed in accordance with The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The contents of this search may not reflect these changes.

For further information please visit our website: www.southernwater.co.uk/sewer-ownership-changes.

Records searched

The following records were searched in compiling this report: the Map of Public Sewers, the Map of Waterworks, water and sewerage records, the Register of Properties subject to Internal Foul Flooding, the Register of Properties subject to Poor Water Pressure and the Drinking Water Register. Should the property not fall entirely within Southern Water's region, a copy of the records held by the relevant water company was searched.

Competition in the non-household retail market

From April 2017 non-household customers in England can choose their retailer. 'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

The 'wholesale' part of the water industry was not opened for competition in April 2017. This means Southern Water continues to look after the pipes and infrastructure for all its customers across Kent, Sussex, Hampshire and the Isle of Wight.

Moving

There can be a lot to do and remember when you're moving. Whether you are moving within our area, moving into our area or moving out of the area please let your retailer know.

Your order summary

	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?	No
2.2	Does surface water from the property drain to a public sewer?	No
2.3	Is a surface water drainage charge payable?	See answer
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?	No
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?	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 any 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?	No
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	See answer
	Water	
3.1	Is the property connected to mains water supply?	No
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	No
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?	No
3.5	What is the classification of the water supply for the property?	See answer
3.6	Is there a meter installed at this property?	See answer
	Charging	
4.1.1	Who is responsible for providing the sewerage services for the property?	Southern Water
4.1.2	Who is responsible for providing the water services for the property?	Affinity Water
4.2	Who bills the property for sewerage services?	See answer
4.3	Who bills the property for water services?	See answer
	Trade effluent information	
4.4	Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?	No

Maps

Public sewer map

Q. 1.1: Where relevant, please include a copy of an extract from the public sewer map.

A.: A copy of an extract from the public sewer map is provided.

Guidance Notes:

The Water Industry Act 1991 defines public sewers as those which the Company has responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purpose 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.

Map of waterworks

Q. 1.2: Where relevant, please include a copy of an extract from the map of waterworks.

A.: A copy of an extract of the map of waterworks is provided.

Guidance Notes:

Assets other than vested water mains may be shown on the plan for information only.

The Company is not responsible for private supply pipes connecting the property to the public water main and does 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

Foul water

Q. 2.1: Does foul water from the property drain to a public sewer?

A.: The Company's records indicate that foul water from the property does not drain to the public sewerage system.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These 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.

The copy extract will show known public sewers in the vicinity of the property. 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.

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.

Surface water

Q. 2.2: Does surface water from the property drain to a public sewer?

A.: The Company's records indicate that surface water from the property does not drain to the public sewerage system. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These 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.

The copy extract will show known public sewers in the vicinity of the property. 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.

In some cases company records do not distinguish between foul and surface water connections to the public sewerage system. If on inspection the buyer finds that the property is not connected for surface water drainage, the property may be eligible for a rebate of the surface water drainage charge. Details can be obtained from the Company.

If surface water 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.

Surface water drainage charge

Q. 2.3: Is a surface water drainage charge payable?

A.: Records confirm that a surface water drainage charge is not applicable at this property. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

Where surface water from a property does not drain to the public sewerage system no surface water drainage charges are applicable.

If on inspection the buyer finds that the property is not connected for surface water drainage, the buyer should contact their retailer.

Public sewers within the boundary of the property

Q. 2.4: Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?

A.: 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 1 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.

Guidance Notes:

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 within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

Please note if the property was constructed after 1 July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.

Public pumping station within the boundary of the property

Q. 2.4.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

A.: The public sewer map included indicates that there is no public pumping station within the boundaries of the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a pumping station within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public sewers near to the property

Q. 2.5: Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

A.: The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of a building within the property.

Guidance Notes:

From 1 October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.

The presence of a public sewer within 30.48 metres (100 feet) of a building within the property can result in the local authority requiring a property to be connected to the public sewer.

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest public sewer.

Public pumping station near to the property

Q. 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?

A.: The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest pumping station.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public adoption of sewers and lateral drains

Q. 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?

A.: Records indicate that the sewers serving the development, of which this property forms part, are not the subject of an application for adoption under Section 104 of the Water Industry Act 1991. Where the property is part of an established development it would not normally be subject to an adoption agreement under Section 104 of the Water Industry Act 1991.

Guidance Notes:

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.

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.

Building over a public sewer, disposal main or drain

Q. 2.7: Has the 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?

A.: There are no records in relation to any approval or consultation 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. 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.

Guidance Notes:

Buildings or extensions erected over a sewer in contravention of Building Control may have to be removed or altered.

From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have approved or been consulted about any plans to erect a building or extension on the property or in the vicinity of these.

Risk of flooding due to overloading public sewers

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

A.: The building is not recorded as being at risk of internal flooding due to overloaded public sewers. From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a building 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.

Guidance Notes:

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 the 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 defined as properties that have suffered or are likely to suffer internal flooding from the 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 sewerage undertaker’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.

Buildings may be at risk of flooding but not identified where flooding incidents have not been reported to the sewerage undertaker.

Public sewers are defined as those for which the sewerage undertaker 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 sewerage undertaker. This report excludes flooding from the private sewers and drains and the sewerage undertaker makes no comment upon this matter.

Sewage treatment works

Q. 2.9: Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

A.: The nearest sewage treatment works is 1.19 kilometres West of the property. The name of the sewage treatment works is SELLINDGE WTW, which is the responsibility of Southern Water Services, Southern House, Yeoman Road, Worthing, West Sussex, BN13 3NX.

Guidance Notes:

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 have not been identified.

Water

Connection to mains water supply

Q. 3.1: Is the property connected to mains watersupply?

A.: Records indicate that the property is not connected to mains water supply and water is therefore likely to be provided by virtue of a private supply.

Guidance Notes:

The situation should be checked with the current owner of the property.

Details of private supplies are not kept by the water undertaker.

Water mains, resource mains or discharge pipes

Q. 3.2: Are there any water mains, resource mains or discharge pipes within the boundaries of the property?

A.: The map of waterworks is provided by Affinity Water whose records do not indicate any water mains, resource mains or discharge pipes within the boundaries of the property.

Guidance Notes:

The boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public water main within the boundary of the property may restrict further development within it.

Water undertakers have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the water undertaker or its contractors needing to enter the property to carry out work.

Adoption of water mains and services pipes

Q. 3.3: Is any water main or service pipe serving, or which is proposed to serve theproperty, the subject of an existing adoption agreement or an application for such an agreement?

A.: 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.

Guidance Notes:

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.

Risk of low water pressure or flow

Q. 3.4: Is the property at risk of receiving low water pressure orflow?

A.: Records confirm that the property is not recorded by the water undertaker as being at risk of receiving low water pressure or flow.

Guidance Notes:

“Low water pressure” means water pressure below the regulatory reference level which is the minimum pressure when demand on the system is not abnormal.

The reference level of service is a flow of 9 litres/minute at a pressure of 10 metres head on the customer’s side of the main stop tap (mst). 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 10 metres head on the customers side of the mst is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or Institute of Plumbing handbook.

Water companies include 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). Refer to list below:

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 exclude properties which are affected by low pressure only on those days with the highest peak demands. During the year companies may exclude, for each property, up to five days of low pressure caused by peak demand.

Planned maintenance: Companies exclude 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 PRVs 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.

Water hardness

Q. 3.5: What is the classification of the water supply for the property?

A.: The water supplied to the property has an average water hardness of 298 mg/l calcium carbonate which is defined as "hard" by Affinity Water.

Guidance Notes:

The hardness of water depends on the amount of calcium in it – the more it contains, the harder the water is.

There is no UK or European standard set for the hardness of drinking water. More information on water hardness can be found on the Drinking Water Inspectorates' website: http://www.dwi.gov.uk/

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 explains how to convert mg/l calcium and mg/l calcium carbonate classifications.

To Convert from:	To Clark degrees	To French degrees	To German degrees
mg/l calcium	multiply by 0.18	multiply by 0.25	multiply by 0.14
mg/l calcium carbonate	multiply by 0.07	multiply by 0.10	multiply by 0.056

Water meters

Q. 3.6: Is there a meter installed at this property?

A.: Records indicate that the property is not served by a water meter.

Guidance Notes:

Where the property is not served by a water meter and the customer wishes to consider this method of charging they should contact their water retailer.

If a property is measured (metered) upon change of occupation this property will retain the meter.

Charging

Sewerage undertaker

Q. 4.1.1: Who is responsible for providing the sewerage services for the property?

A.: Southern Water is responsible for providing the sewerage services for the property.

Guidance Notes:

The ‘wholesale’ part of the water industry did not open for competition in April 2017. This means that Southern Water continues to operate the network of pipes, mains and treatment works.

As a wholesaler, Southern Water sells sewerage services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact Southern Water to report internal sewer flooding.

Water undertakers

Q. 4.1.2: Who is responsible for providing the water services for the property?

A.: Affinity Water is responsible for providing the water services for the property.

Guidance Notes:

The ‘wholesale’ part of the water industry did not open for competition in April 2017. This means that water undertakers continue to operate the network of pipes, mains and treatment works.

As a wholesaler, water undertakers sell water services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact water undertakers to report leaks.

Sewerage bills

Q. 4.2: Who bills the property for sewerage services?

A.: If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Water bills

Q. 4.3: Who bills the property for water services?

A.: If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Trade effluent information

Q. 4.4: Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?

A.: The trader operating at this commercial property does not hold either a Trade Effluent Consent, or an acknowledgement of a trade effluent discharge, as issued by Southern Water.

Guidance Notes:

Please note, any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.

Any change of ownership from the current incumbent of a property will require the negotiation of a new trade effluent consent or a new acknowledgement between the new incumbent and Southern Water.

Where consent or acknowledgement details have been provided, this does not represent a direct copy of the original.

Other Information

Additional meter information

No further information.

Appendix one: Terms and expressions

"the 1991 Act" means the Water Industry Act 1991**(i)**;
"the 2000 Regulations" means the Water Supply (Water Quality) Regulations 2000**(ii)**;
"the 2001 Regulations" means the Water Supply (Water Quality) Regulations 2001**(iii)**;
"adoption agreement" means an agreement made or to be made under Section 51A(1) or 104(1) of the 1991 Act**(iv)**;
"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 31 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 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 31 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**(v)**;
"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**(vi)**;
"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**(vii)** 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**(viii)**, 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**(ix)**;
(b) by virtue of a scheme under Schedule 2 to the 1991 Act**(x)**;
(c) under Section 179 of the 1991 Act**(xi)**; or
(d) otherwise;
"public sewer map" means the map made available under Section 199(5) of the 1991 Act**(xii)**;
"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 zone" 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.

(i) 1991 c.56.
(ii) S.I. 2000/3184. These Regulations apply in relation to England.
(iii) S.I. 2001/3911. These Regulations apply in relation to Wales.
(iv) Section 51A was inserted by Section 92(2) of the Water Act 2003 (c. 37). Section 104(1) was amended by Section 96(4) of that Act.
(v) Various amendments have been made to Sections 102 and 104 by section 96 of the Water Act 2003.
(vi) Inserted by Section 56 of and Schedule 4 to the Water Act 2003.
(vii) Subsection (1A) was inserted by Section 92(5) of the Water Act 2003.
(viii) Section 106(1A) was inserted by Section 99 of the Water Act 2003.
(ix) 1989 c.15.
(x) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
(xi) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
(xii) Section 199 was amended by Section 97(1) and (8) of the Water Act 2003.

Appendix two: A guide to new development

The information contained below is for general guidance only. It is recommended that Southern Water's Developer Services department be contacted for further details concerning new infrastructure development.

Wastewater information

Sewer requisitions

It may be necessary for a developer to request that Southern Water provides a public sewer to connect a development site to the existing public system. The developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development served by the new sewer.

Sewer diversions

If a public sewer crosses private land, it may be possible for the landowner/developer to request the sewer be diverted. In the majority of cases Southern Water will allow the developer to undertake this work under close supervision. Whether Southern Water or the developer undertakes the diversionary works the costs are the responsibility of the developer.

Building-over sewers

Public sewers are afforded statutory protection and consequently there is no right to build over or in close proximity to a public sewer. If an existing public sewer either crosses a development site or is located in close proximity to a development site it is essential that a developer contact Southern Water.

Sewer connections

A developer can serve notice on Southern Water that it wishes to make a connection to the public sewerage system. The developer must provide 21 days' notice and the work will be supervised by Southern Water.

Water information

Water requisitions

It may be necessary for a developer to request that Southern Water provides both:

(a) a public water main to connect a development site to the existing public system and,
(b) on-site public water mains to serve the individual properties.

In both cases the developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development.

It is possible for the developer to lay the on-site mains themselves under a Self-Lay Agreement. Further details are available from Southern Water.

Water main diversions

The building over or in close proximity to public water mains is not permitted. A developer must request that Southern Water undertakes a diversion of a water main that is affected by a development.

Water connections

A developer can request a new connection to a public water main. This work will be undertaken by Southern Water.

Contact us

For specific information on Southern Water's Developer Services service, including details on how to contact the right person, please visit our website: www.southernwater.co.uk/developers-and-builders-overview.

Appendix three: Terms and conditions

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

Definitions
"The Company" means the water service company operating within the Southern Water drainage area that provides information to Southern Water for this commercial search Report.
"Order" means any request completed by the Customer requesting the Report.
"Report" means the drainage and/or water report prepared by The Company in respect of the Property.
"Property" means the address or location supplied by the Customer in the Order.
"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.
"Client" means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.
"Purchaser" means the actual or potential purchaser of the Property including their mortgage lender.

1.0 Agreement
1.1 Southern Water agrees to supply the Report subject to these terms. The scope and limitations of the Report are described in paragraph 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 Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

2.0 The Report
Whilst Southern Water will use reasonable care and skill in producing the Report, it is provided to 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 Southern Water cannot be responsible to 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.
2.4 The Report provides information as to the location and connection of existing services, and details of trade effluent consents. It should not be relied upon for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Southern Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liabilitytherefore.
2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes.

3.0 Liability
3.1 Southern Water shall not be liable to the Client for any failure defect or non-performance of its obligations arising from any failure of or defect in any machine, processing system or transmission link or anything beyond Southern Water's reasonable control or the acts or omissions or any party for whom Southern Water is not responsible.
3.2 Where a Report is requested for an address falling within a geographical area where Southern Water and another Company separately provide water and sewerage services, then it shall be deemed that liability for the information given by Southern Water or the Company as the case may be will remain with Southern Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Southern Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement, Southern Water will therefore not be liable in any way for the accuracy of that information.
3.3 Where the Customer sells this Report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever (save to the extent provided by clause 3.4) and the Customer shall indemnify Southern Water in respect of any claim (other than a claim covered by clause 3.4) by the Client.
3.4 Southern Water shall accept liability for death or personal injury arising from its negligence.
3.5 The entire liability of Southern Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs orexpenses.

4.0 Copyright andconfidentiality
4.1 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 Southern Water. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expresslyprovided.
4.2 The Customer or Client is entitled to make copies of the Report (other than any maps contained in the, or attached to the Report, where no copying is permitted).
4.3 The Customer and 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 theReport.
4.4 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.
4.5 The Customer and the Client agree to indemnify Southern Water or the Company as the case may be against any losses, costs, claims and damage suffered by Southern Water or the Company as the case may be, as a result of any breach by either of them of the terms of paragraphs 4.1 to 4.4 inclusive.

5.0 Payment
5.1 Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Southern Water, without any set off, deduction or counterclaim. Unless the Customer or Client has an account with Southern Water for payment for Reports, payments for Reports must be received in full by Southern Water before the Report is produced. For Customers or Clients with accounts, payment terms will be as agreed with Southern Water.

6.0 General
6.1 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 beaffected.
6.2 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.
6.3 Nothing in this notice shall in any way restrict your statutory or any other rights of access to the information contained in the Report.

These Terms and conditions are available in larger print for those with impaired vision.

Appendix four: Complaints procedure

When we get it wrong
You deserve the highest standard of service from us, but sometimes we make mistakes. If we do, please let us know and we will investigate and review your concerns.

Whilst we always try to resolve all complaints straight away, if this is not possible and you are not happy with the course of action taken by us, you can ask us to escalate the issue internally or take your complaint to an independent third party.

How you contact us
Firstly please call us and we will try to sort out your problem straight away.

You can call us between 8am and 5pm, Monday to Friday on 0845 270 0212 or 0330 303 0276 (individual consumers);

Email us at searches@southernwater.co.uk; or

Write to us at LandSearch, Southern Water Services, Southern House, Capstone Road, Chatham, Kent, ME5 7QA.

What you can expect
You will receive a full, fair and courteous response from someone who can effectively deal with your problem.

If we can remedy the problem straight away we will do it but if we cannot immediately resolve your problem we will keep you informed of actions being taken.

The process
We will try to resolve any telephone contact or complaint at the time of the call, however, if that isn't possible, we will take the details of your complaint and we will investigate and get back to you within 10 working days.

We will respond to written complaints within 10 working days of the date received, but we will always aim to respond more quickly. Depending on the scale of investigation required, we will keep you informed of the progress and update you with new timescales if necessary.

If you are still not satisfied with our response or action we will refer the matter to a Senior Manager for resolution. At your request we will liaise with a third party representative acting on your behalf.

Our commitment to you
If we do not respond to your complaint within 10 working days of receipt of your contact, we will compensate you in line with Southern Water's Customer services — Guaranteed standards of service for business customers.

If we find your complaint to be justified, or we have made any errors that substantially change the outcome in your search result, we will refund the search fee. We will also provide you with a revised search and undertake the necessary action to put things right as soon as practically possible. You will be kept informed of the progress of any action required.

If you remain dissatisfied
While we aim to resolve your complaint first time, in the event that we are unable to resolve the issue to your satisfaction, ultimately you can contact a third party. Please make sure that you have followed the process above first, if not, your complaint will be passed back to us.

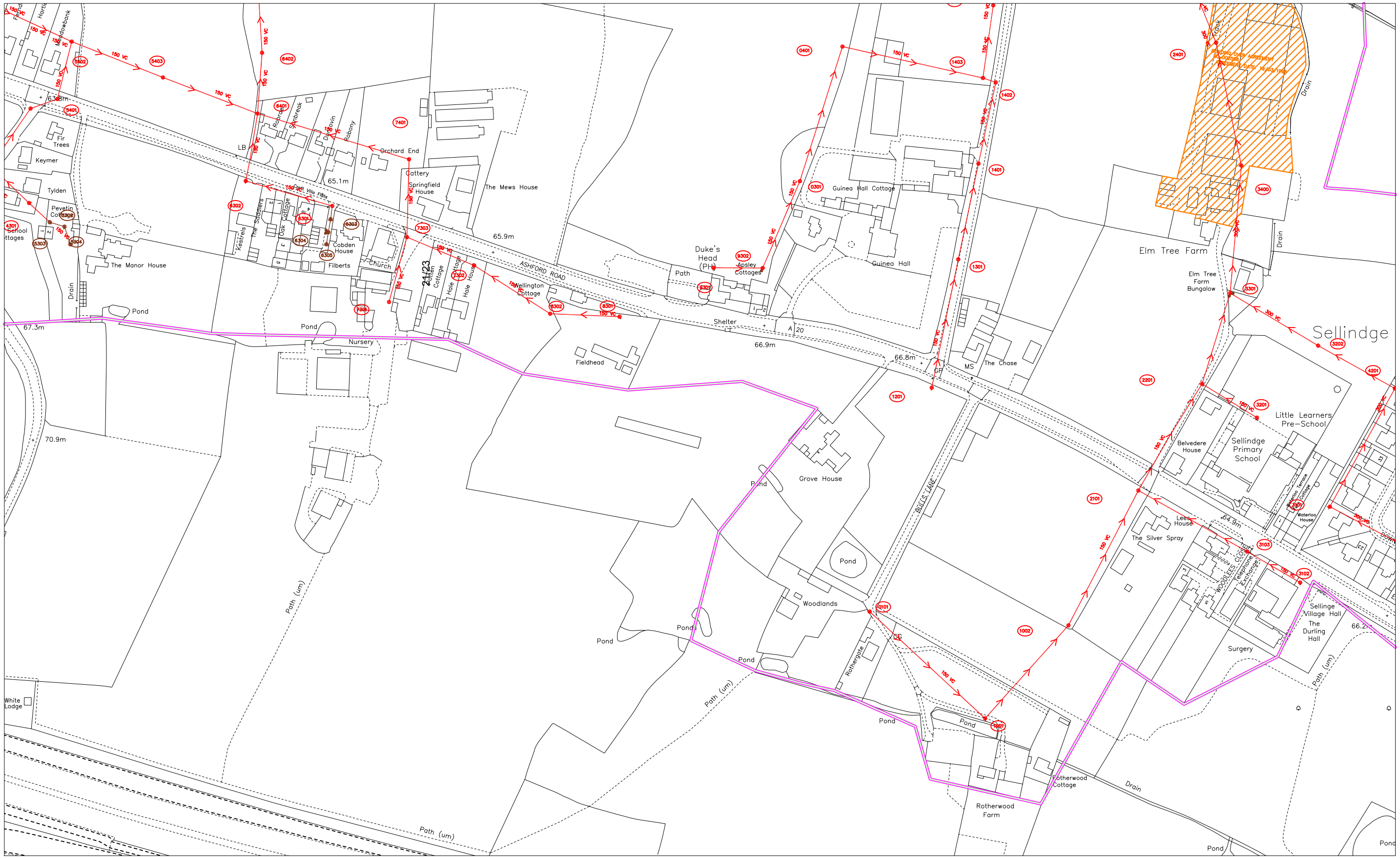
SEWER RECORDS PAGE 1 OF 2

138513

137935

609472

610416



O.S. REF. TR0938SE	Drawn by: panigar	The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determnined on site. WARNING: BAC pipes are constructed of Bonded Asbestos Cement WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement
	Scale: 1:2500	
Title: Land at Ashford Road	Date: 23/07/2019	Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.

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Southern Water

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape
0101X	67.77	66.72	150	VC	CIRC
0301X	65.44	63.59	150	VC	CIRC
0401X	63.55	62.43	150	VC	CIRC
1001X	67.07	65.53	150	VC	CIRC
1002X	65.9	64.46	150	VC	CIRC
1201X	66.5	65.12	150	VC	CIRC
1301X	65.96	64.18	150	VC	CIRC
1401X	64.88	63.32	150	VC	CIRC
1402X	64.15	62.61	150	VC	CIRC
1403X	64.56		150	VC	CIRC
1501X	63.71	61.28	150	VC	CIRC
2101X	64.91	62.89	150	VC	CIRC
2201X	63.77	61.77	150	VC	CIRC
2401X	62.35	59.85	300	VC	CIRC
3101X	64.14	62.15	300	VC	CIRC
3102X	65.36	64.48	150	VC	CIRC
3103X	65.07	63.87	150	VC	CIRC
3201X	63.38	62.2	150	VC	CIRC
3202X	62.45	60.37	300	VC	CIRC
3301X	62.74	60.31	300	VC	CIRC
3400X	62.15	60.11	300	VC	CIRC
4201X	62.79	60.81	300	VC	CIRC
4301X	64.52	62.95	150	VC	CIRC
4402X	63.83	62.29	150	VC	CIRC
5302X	64.82	63.79	150	VC	CIRC
5303X	64.84		150	VC	CIRC
5304X	65.17		150	VC	CIRC
5401X	63.79	62.1	150	VC	CIRC
5402X	63.58	61.91	150	VC	CIRC
5403X	62.37	61.22	150	VC	CIRC
6301X	65.1	63.97	150	VC	CIRC
6302X	64.86	63.02	150	VC	CIRC
6303X	65.32	64.14	150	VC	CIRC
6304X	65.64	64.49	150	VC	CIRC
6305X	65.89	64.69	150	VC	CIRC
6401X	63.23	60.63	150	VC	CIRC
6402X	61.84	60.46	150	VC	CIRC
7301X	66.93	65.38	150	VC	CIRC
7302X	65.43	64.08	150	VC	CIRC
7303X	65.7	63.52	150	VC	CIRC
7401X	64.44	62.83	150	VC	CIRC
8301X	66.97	65.75	150	VC	CIRC
8302X	66.95	64.65	150	VC	CIRC
9301X	65.9	64.46	150	VC	CIRC
9302X	66.42	64.24	150	VC	CIRC

Node	Cover	Invert	Size	Material	Shape

Node	Cover	Invert	Size	Material	Shape

Node	Cover	Invert	Size	Material	Shape

22/23

LINE STYLES / COLOURS

- Brown — Foul
- Foul Syphon Sewer
- Foul Vacuum Main
- Foul Rising Main
- Red — Combined
- Combined Syphon Sewer
- Combined Rising Main
- Lateral Drain
- Orange — Building Over Agreement Area
- Dark Blue — Treated Effluent
- Purple — Sludge
- Sewer Catchment
- Section 104 Area
- Light Blue — Surface Water
- Surface Water Rising Main
- Yellow — Private
- Green — Access Shaft
- Decommissioned

MATERIALS

AK	Alkathene
BAC	Bonded Asbestos Cement
BRC	Brick (Common)
BRE	Brick (Engineering)
CC	Concrete Box Culvert
CI	Cast Iron
CO	Concrete (In-Situ)
CP	Concrete (Pre-Cast)
CSB	Concrete Segments (bolted)
CSU	Concrete Segments (unbolted)
DI	Ductile Iron
GRC	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
MAC	Masonry in regular Courses
MAR	Masonry in random Courses
PE	Polyethylene
PF	Pitch Fibre
PP	Polypropylene
PVC	Polyvinyl Chloride
RPM	Reinforced Plastic Matrix
SI	Spun Iron
ST	Steel
VC	Vitrified Clay
XXX	Other
ZZZ	Unknown

LEGEND - SEWERS

- Manhole (SW)
- Manhole (F&C)
- Lamp hole (SW)
- Lamp hole (F&C)
- Pumping Station (SW)
- Pumping Station (F&C)
- Side entry manhole (SW)
- Side entry Manhole (F&C)
- Blind shaft (SW)
- Blind shaft (F&C)
- Ejector station (SW)
- Ejector station (F&C)
- Watertight door (SW)
- Watertight door (F&C)
- Flushing ch. Mn-e (SW)
- Flushing ch. Mn-e (F&C)
- Flushing ch. No-e (SW)
- Flushing ch. No-e (F&C)
- Demarcation Chamber
- Washout (SW)
- Washout (F&C)
- Rodding Eye (SW)
- Rodding Eye (F&C)
- Gauging point (SW)
- Gauging point (F&C)
- Intercept chamber (SW)
- Intercept chamber (F&C)
- Storm Tank (SW)
- Storm Tank (F&C)
- Vortex chamber (SW)
- Vortex chamber (F&C)
- Label ellipse
- Dummy/S24 manhole
- Outfall
- Penstock chamber
- Damboards
- Storm Overflow
- Backdrop manhole
- Other (s)
- Other
- Change in sewer (s)
- Change in sewer
- Reflux valve
- Flap valve
- Cascade
- Anode
- Valve
- Closed Valve
- Air Valve
- Hatch box (SW)
- Hatch box (F&C)
- Direction arrow
- Emptying valve
- Catchpit
- Soakaway
- Inlet
- Balancing Pond
- Wastewater treatment works
- Marine treatment works
- Outfall headworks
- Vent
- Vent column
- Tidal storage tank
- Blank end
- Head of Public Sewer
- Micro Pumping Station

SHAPES (S)

A	Arched	R	Rectangular
B	Barrel	S	Square
C	Circular	T	Trapezoidal
E	Egg	U	U Shape
H	Horseshoe	X	Other

NODE REFERENCING SYSTEM

- 1st digit: hundred metre easting identifier
- 2nd digit: hundred metre northing identifier
- 3rd digit: sewer type identifier
  - 0-4 = Foul/Combined
  - 5-9 = Surface Water
- 4th digit: next sequential node

Drawn by:	panigar
Title:	Land at Ashford Road
Date:	23/07/2019

Southern Water

Affinity Water

Southern Water

This information is provided as part of a CON29DW by:

LandSearches from Southern Water

Southern House
Capstone Road
Chatham
Kent ME5 7QA
Telephone: 0845 270 0212
Fax: 01634 844514

This information is provided for general guidence only.
The position of water mains on this plan should not be relied upon as being precise.
The actual position and depth must be established by taking trial holes in all cases.

The Company must be given two working days notice of the intention to excavate trial holes.
Service pipes are not necessarily shown on this plan.

Legend

- Water Main
- Hydrants / Washout Hydrants
- Valves / Fittings

Materials

AC	Asbestos Cement	MDPE	Medium Density Polyethylene
CI	Cast Iron	MOPVC	Molecular Orientated Polyvinyl Chloride
DI	Ductile Iron	SI	Spun Iron
GI	Galvanised Iron	ST	Steel
HDP	High Density Polythene	UPVC	Unplasticised Polyvinyl Chloride
HPPE	High Performance Polyethylene	??	Unknown
LD	Lead		

Scale 1:1250 **Date:** 23.07.2019

APPENDIX D
KCC PRE-APPLICATION ENQUIRY

Kathryn Olive

Flood and Water Management
Invicta House
Maidstone
Kent
ME14 1XX
Website: www.kent.gov.uk/flooding
Email: suds@kent.gov.uk
Tel: 03000 41 41 41
Our Ref: NON/2019/074790
Date: 7 August 2019

Application No: pre app

Location: Ashford Road, Sellindge Kent TN25 6EG

Proposal: Residential Development

Thank you for your enquiry in relation to the above site.

We have reviewed our records that we hold for your site and we can provide you with the following information:

Site Conditions
The area of interest lies to the south side of A20 Ashford Road, Sellindge and appears to be a greenfield site, except for the area of 'Grove House'.

The site is underlain by Head Deposits and the Sandgate Formation. The bedrock is likely to comprise sandstone, siltstone or mudstone. The British Geological Survey viewer highlights that the underlying bedrock offers a highly variable permeability that may be suitable for infiltration depending on site conditions.

Historic flood events
We hold one report of flooding in the last 5 years. This is reported as affecting A20 Main Road on 27/02/2014. The report states that the road was completely flooded between the railway bridge and end of the village.

Local surface water features and drainage assets
There does not appear to be any surface water drainage features within the site boundary based upon mapped data.

Our experience from other planning applications in the area suggests that a culvert exists crossing the A20 Main Road, running northwards to the ordinary watercourses at Elm Tree Farm. We do not hold any dedicated records of this culvert within our asset data. There are a number of ordinary watercourses located outside of the site boundary according to the Environment Agency Detailed River Network GIS layers.

A public combined sewer exists at the site. There are highway gullies present near the site, suggesting there may be separate positive drainage for the public highway.

Other identified flood issues or ground conditions
BGS mapping also indicates that the site is likely located within an area of shallow groundwater whereby groundwater is likely to be within 3m of the surface for at least part of the year.

We would refer you to the long term flood risk information available at gov.uk for details of mapped flood risk from all sources.

Recommendation on surface water management within the development
It appears that no dedicated surface water or land drainage features exist on the current site. It is likely that rainfall will infiltrate into the ground or run-off to surrounding areas when soils are saturated.

We recommend that ground investigations are undertaken at the site to determine conditions for infiltration alongside groundwater monitoring. Infiltration may be possible at shallow depths, providing a minimum 1m unsaturated zone can be achieved above the highest recorded groundwater level.

Should infiltration not be viable for all or parts of the proposal, drainage may be possible to ordinary watercourses at greenfield run-off rates and volumes, however it would appear that no such features exist within the site boundary itself.

We would recommend a site walkover is made to identify the presence of any unmapped surface water drainage that may exist on or local to the proposed site.

Discharge to the public combined sewer should only be considered when all other options have been explored. We are aware incidents of sewer flooding in this area have occurred and so offsite works may be required to provide capacity for the development. We would recommend consultation with Southern Water where required.

Ordinary Watercourse/Drainage Consents
If land drainage consent is required in relation to the proposed development, we recommend that the submission of any application for consent is delayed until planning permission is granted, (excepting instances when consents are required to construct or upgrade site access).

Please note that any feature capable of conveying water can be considered to fall under the definition of an ‘ordinary watercourse’ and we would urge the applicant to contact us prior to undertaking any works that may affect any watercourse/ditch/stream or any other feature which has a drainage or water conveyance function. Any works that have the potential to affect the watercourse or ditch’s ability to convey water will require our formal flood defence consent (including culvert removal, access culverts and outfall structures). Please contact flood@kent.gov.uk for further information.

Climate Change Allowances
Given the latest guidance from the EA, the design must accommodate the 1 in 100 year storm with a 20% allowance for climate change, and additional analysis should outline the flooding implications for a greater climate change allowance of 40%. We would refer you to the Environment Agency guidance pages on climate change at Gov.uk.

Further Information
We support the provision of information to delineate drainage strategies and endeavour to respond to all enquiries. If this information raises further questions please do not hesitate to contact us. Depending upon the size and nature of your development other authorities may need to be consulted. Information and advice may also be needed from the Environment Agency, Internal Drainage Board or sewerage undertaker.

I trust this information assists with your enquiries.

Yours faithfully,

Alex Brauninger
Senior Flood Risk Project Officer
Flood and Water Management

APPENDIX E
PHOTOGRAPH LOCATION PLAN

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No.	**Date:**
1	22.09.19

Direction Photo Taken:

N

Description:

There are several gullies along Ashford Road. To the north of the site there is a higher concentration of highway gullies outside of the public house and neighbouring properties. It could not be determined if these gullies discharged into the ditch west of the public house.

Photo No.	**Date:**
2	22.09.19

Direction Photo Taken:

W

Description:

The northern boundary of the western parcel. The site is terraced upwards south from the northern boundary. There is a low lying area of land at the boundary. The low lying area extended across the boundary but was not part of a larger drainage network.

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No.	**Date:**
3	22.09.19

Direction Photo Taken:

N

Description:

The western boundary of the site slopes northwards. Outside of the boundary fence there is a shallow ditch. There were no formal overland outfalls from the site to the ditch. It was not clear if the ditch was a drainage feature or a land boundary marker.

Photo No.	**Date:**
4	22.09.19

Direction Photo Taken:

SE

Description:

There is a ditch along the south-western boundary but this ditch appears to act as a field boundary as there are no upstream or downstream linkages to the ditch nor does any land fall towards the ditch as it is at the highest point of the site.

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No. 5	**Date:** 22.09.19

Direction Photo Taken:

E

Description:

The ditch along the south-western boundary line continues across the open field. The ditch is the boundary line of the extent of the site.

Photo No. 6	**Date:** 22.09.19

Direction Photo Taken:

N

Description:

The ditches ultimately become more shallow until they are not distinguishable from the surrounding ground.

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No.	**Date:**
7	22.09.19

Direction Photo Taken:

E

Description:

There is a pond centrally on the site which crosses the boundary from the private property. The pond was dry on inspection. There did not appear to be any outfall from the pond.

Photo No.	**Date:**
8	22.09.19

Direction Photo Taken:

E

Description:

The south boundary ditch continues towards a private property where the ditch becomes more shallow and undisguisable from the surrounding land.

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No.	**Date:**
9	22.09.19

Direction Photo Taken:

NE

Description:

There is a ditch offsite which conveys flows towards a pond between field boundaries off site. The pond was dry on inspection.

Photo No.	**Date:**
10	22.09.19

Direction Photo Taken:

E

Description:

A narrow parcel of land within the site boundary. The parcel of land was overgrown and fenced off but did not look to contain any hydrological features.

RSK	Report No: 881873	PHOTOGRAPHIC LOG

Client name: Gladman Developments Ltd.	**Site Location:** Ashford Road, Sellindge

Photo No. 11	**Date:** 22.09.19

Direction Photo Taken:

N

Description:

The northern boundary of the eastern parcel. The photograph is taken where the combined sewer was located.

Photo No. 12	**Date:** 22.09.19

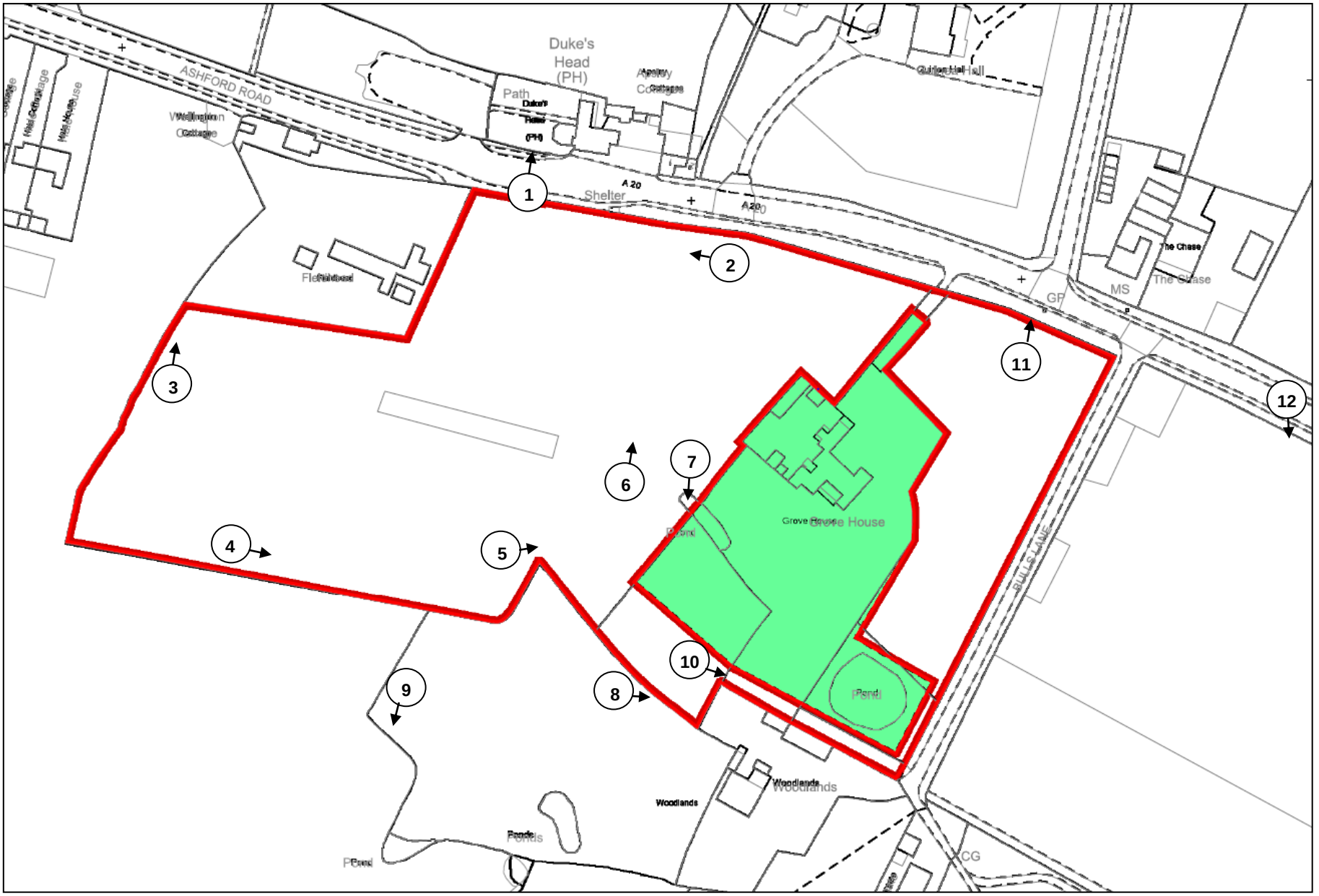
Direction Photo Taken:

S

Description:

The neighbouring site to the east had 4 monitoring wells in across the lowest area of the site.

PHOTOGRAPH LOCATION PLAN



APPENDIX F
EA PRE-APPLICATION ENQUIRY

Ryan Whitfield

From: KSL Enquiries <KSLE@environment-agency.gov.uk>
Sent: 05 August 2019 14:47
To: Kathryn Olive
Cc: KSLPlanning
Subject: KSL 137359 CM - Flood Information Request - Ashford Road, Sellindge
Attachments: KSL climate change guidance.doc.Sept.2016.pdf

Dear Kathryn

KSL 137359 CM - Flood Information Request - Ashford Road, Sellindge 881873

Thank you for your request for information that was received on 30 July 2019

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

This site is located in an area of Flood Zone 1 where we do not have modelled flood levels.

We can confirm that we have no record of flooding (from rivers and/or the sea) for this location. You may wish to check with the Lead Local Flood Authority for this area, Kent County Council, who may hold detailed records for surface water flooding.

Please find responses to your supplementary questions below, **in purple**.

Please be aware that you can access our flood map(s) for free http://apps.environment-agency.gov.uk/wiyby/cy/37837.aspx and here.

If you have requested this information to help inform a development proposal, then you should refer to the flood risk standing advice pages on our website

http://www.environment-agency.gov.uk/research/planning/82584.aspx

You can find further information about flooding and our flood maps on our website:

http://www.environment-agency.gov.uk/homeandleisure/floods/default.aspx

http://www.environment-agency.gov.uk/homeandleisure/floods/31650.aspx

Please refer to the Open Government Licence which explains the permitted use of this information.

I trust this information is of use. If you have any further questions, please contact us and we will be happy to help.

If you have any further queries or if you'd like us to review the information we have provided under the Freedom of Information Act 2000 and Environmental Information Regulations 2004 please contact us within two months and we will happily do this for you.

We would be really grateful if you could spare five minutes to help us improve our service. Please click on the link below and fill in our survey – we use every piece of feedback we receive:http://www.smartsurvey.co.uk/s/EnvironmentAgencyCustomerSurvey/?a=KSL

Kind regards
Claire

Claire McConchie
Customers & Engagement Officer
Kent South London & East Sussex

Environment Agency | 0208 4746848 | Orchard House | Endeavour Park | London Road | West Malling | Kent | ME19 5SH

From: Kathryn Olive [mailto:KOlive@rsk.co.uk]
Sent: 05 August 2019 11:46
To: KSL Enquiries <KSLE@environment-agency.gov.uk>
Subject: RE: KSL 137359 CM - Flood Information Request - Ashford Road, Sellindge 881873

Hi,

The site of interest is within the outer red line boundary, not including the green shaded shape.

I hope this clarifies this for you, if not please come back to me.

Kind regards

Kathryn

Kathryn Olive
Administrator
Land & Development Engineering

RSK
14 Beecham Court, Pemberton Business Park, Wigan, WN3 6PR, UK
Switchboard: +44 (0) 1942 493255
http://www.rsk.co.uk

Please note my working hours are Monday – Friday 9.30am to 2.30pm

From: KSL Enquiries <KSLE@environment-agency.gov.uk>
Sent: 05 August 2019 11:36
To: Kathryn Olive <KOlive@rsk.co.uk>
Subject: KSL 137359 CM - Flood Information Request - Ashford Road, Sellindge 881873

Dear Kathryn

Re: KSL 137359 CM - Flood Information Request - Ashford Road, Sellindge 881873

Thank you for your enquiry.

Could you please clarify is the site of interest the outer or inner red line boundary on the plan?

(The inner line boundary being the green shaded shape)

This will enable our teams to produce the products for you.

Until we receive this your request will be placed on hold.

Many thanks
Claire

Claire McConchie
Customers & Engagement Officer
Kent South London & East Sussex

Environment Agency | 0208 4746848 | Orchard House | Endeavour Park | London Road | West Malling | Kent | ME19 5SH

From: Kathryn Olive [mailto:KOlive@rsk.co.uk]
Sent: 30 July 2019 14:06
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Subject: 190801/MS10 KSL Flood Information Request - Ashford Road, Sellindge 881873

Dear Sir/Madam,

Please could I order information on flooding and drainage for the following site in order to inform a Flood Risk Assessment:

Ashford Road,
Sellindge
Kent
TN25 6EG

Grid reference – 609932 E, 138227 N

I would like all the flooding information you have including the following, if available:

- Confirmation of the site's Flood Zone designation, alternatively could you provide the flood flows and levels for a range of return periods including the 1 in 2, 10, 30, 100, 100+CC, 200, 1000, **- Flood zone 1**
- Information on the recently published climate change guidance for this area and how this may impact on the data available for the area, **- see attached document**
- Information on surface water flood risk including flow pathways and depths, **- Please contact lead local flood authority, Kent County Council and local planning authority**
- Information on historic flooding, - **We can confirm that we have no record of flooding (from rivers and/or the sea) for this location. You may wish to check with the Lead Local Flood Authority for this area, Kent County Council, who may hold detailed records for surface water flooding.**
- Information on flood defences in the area, if any, **N/A**
- Any data on existing surface water discharges to the surrounding watercourses, **Please contact the local planning authority and River Stour Internal Drainage Board**
- Any data on groundwater flooding, **Please contact the lead local flood authority, Kent County Council and local planning authority**
- Any information on reservoir flooding; **We hold no records** and,
- Any information on culverted watercourses **we hold no records** or privates sewers **we hold no records** which you know of which do not show up on the public sewer records.

Finally, please could you provide any recommendation on how the surface water is to be managed; for example, restrictions in discharge rates the requirements for SuDS, possible discharge locations and attenuation requirements? **Your request for advice has been referred to the Environment Agency Planning Department cc'd above who will contact you by separate email.**

The Environment Agency are able to supply a preliminary opinion outlining the key environmental issues and opportunities which is free. For more detailed advice, guidance, review of draft report, meetings etc we can organise a cost recovery agreement which is chargeable. We encourage early discussions to ensure environmental issues and opportunities are considered early in the planning process. If you would like a free preliminary opinion or our cost recovery service please complete the form in the link below and email back to kslplanning@environment-agency.gov.uk

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/297018/LIT_9015_c2822b.pdf

We have a relatively quick turn around on this project and would therefore appreciate a quick response.

If you have any queries please don't hesitate to contact me.

Kind regards,

Kathryn

Kathryn Olive
Administrator
Land & Development Engineering

RSK
14 Beecham Court, Pemberton Business Park, Wigan, WN3 6PR, UK

Switchboard: +44 (0) 1942 493255
http://www.rsk.co.uk

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Flood risk assessments: Climate change allowances

Its essential landuse planning decisions are based on the latest evidence and quality site specific Flood Risk Assessments. A key part of this is using the latest climate change allowances and using local evidence and data.

We encourage early pre applications discussions and you should complete this form and email back to kslplanning@environment-agency.gov.uk for sites in high risk flood zones. You should also discuss proposed developments with the local planning authority and refer to their local plan flood risk policies and Strategic Flood Risk Assessment. Guidance on producing a Flood Risk Assessment.

To obtain the latest flood map and data please email our customers and engagement team kslenquiries@environment-agency.gov.uk

1) The climate change allowances

The National Planning Practice Guidance refers planners, developers and advisors to the Environment Agency guidance on considering climate change in Flood Risk Assessments (FRAs). This guidance was updated in February 2016 and is available on Gov.uk and should be read in conjunction with this document. The guidance can be used for planning applications, local plans, neighbourhood plans and other projects. It provides climate change allowances for peak river flow, peak rainfall, sea level rise, wind speed and wave height. The guidance provides a range of allowances to assess fluvial flooding, rather than a single national allowance. It advises on what allowances to use for assessment based on vulnerability classification, flood zone and development lifetime. For proposed development in the tidal Thames flood zone you should continue to use the Thames Estuary 2100 (TE2100) plan and latest flood models.

2) Assessment of climate change impacts on fluvial flooding

Table A below indicates the level of technical assessment of climate change impacts on fluvial flooding appropriate for new developments depending on their scale and location. This should be used as **a guide only**. Ultimately, the agreed approach should be based on expert local knowledge of flood risk conditions, local sensitivities and other influences. **For these reasons we recommend that applicants and / or their consultants should contact the Environment Agency at the pre-planning application stage to confirm the assessment approach, on a case by case basis**. **Table A** defines three possible approaches to account for flood risk impacts due to climate change, in new development proposals:

- **Basic:** Developer can add an allowance to the 'design flood' (i.e. 1% annual probability) peak levels to account for potential climate change impacts.
- **Intermediate:** Developer can use existing modelled flood and flow data to construct a stage-discharge rating curve, which can be used to interpolate a flood level based on the required peak flow allowance to apply to the ‘design flood’ flow. See Appendix 1.
- **Detailed:** Perform detailed hydraulic modelling, through either re-running Environment Agency hydraulic models (if available) or construction of a new model by the developer.

Table A – Indicative guide to assessment approach

vulnerability classification	flood zone	development type		
		minor	small-major	large-major
essential infrastructure	Zone 2	Detailed		
	Zone 3a	Detailed		
	Zone 3b	Detailed		
highly vulnerable	Zone 2	Intermediate/ Basic	Intermediate/ Basic	Detailed
	Zone 3a	Not appropriate development		
	Zone 3b	Not appropriate development		
more vulnerable	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Detailed	Detailed
	Zone 3b	Not appropriate development		
less vulnerable	Zone 2	Basic	Basic	Intermediate/ Basic
	Zone 3a	Basic	Basic	Detailed
	Zone 3b	Not appropriate development		
water compatible	Zone 2	None		
	Zone 3a	Intermediate/ Basic		
	Zone 3b	Detailed		

Notes:

- Minor: 1-9 dwellings/ less than 0.5 ha | Office / light industrial under 1ha | General industrial under 1 ha | Retail under 1 ha | Gypsy/traveller site between 0 and 9 pitches
- Small-Major: 10 to 30 dwellings | Office / light industrial 1ha to 5ha | General industrial 1ha to 5ha | Retail over 1ha to 5ha | Gypsy/traveller site over 10 to 30 pitches
- Large-Major: 30+ dwellings | Office / light industrial 5ha+ | General industrial 5ha+ | Retail 5ha+ | Gypsy/traveller site over 30+ pitches | any other development that creates a non residential building or development over 1000 sq m.

The assessment approach should be agreed with the Environment Agency as part of pre-planning application discussions to avoid any wasted work.

3) Specific local considerations in Kent and South London

Where the Environment Agency and the applicant and / or their consultant has agreed that a '**basic**´ level of assessment is appropriate the figures in Table B below can be used as a precautionary allowance for potential climate change impacts on peak 'design' (i.e. 1% annual probability) fluvial flood level rather than undertaking detailed modelling.

Table B – Local precautionary allowances for potential climate change impacts

River basin	Central	Higher Central	Upper
Thames	500mm	700mm	1000mm
South East	700mm	850mm	1400mm

For proposed developments in the tidal Thames flood zone you should continue to use the Thames Estuary 2100 (TE2100) plan and latest flood models.

4) Fluvial food risk mitigation

Read the guidance on Gov.uk to find out which allowances to use to **assess** the impact of climate change on flood risk.

For planning consultations where we are a statutory consultee and our Flood risk standing advice **does not** apply we use the following benchmarks to inform flood risk **mitigation** for different vulnerability classifications. **These are a guide only**.

We recommend you contact us at the pre-planning application stage to confirm this on a case by case basis. We can provide you with a free basic opinion and more detailed advice is subject to cost recovery.

For planning consultations where we are not a statutory consultee or our Flood risk Standing advice applies we recommend local planning authorities and developers use these benchmarks but we do not expect to be consulted.

- For development classed as '**Essential Infrastructure**' our benchmark for flood risk mitigation is for it to be designed to the '**upper end**' climate change allowance for the epoch that most closely represents the lifetime of the development, including decommissioning.

- For **highly vulnerable** in flood zone 2, the '**higher central'** climate change allowance is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **upper end** allowance.

- For **more vulnerable developments** in flood zone 2, the '**central**' climate change allowance is our minimum benchmark for flood risk mitigation, and in flood zone 3 the '**higher central**' climate change allowance is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **higher central** (in flood zone 2) and the **upper end** allowance (in flood zone 3).

- For **water compatible** or **less vulnerable** development (e.g. commercial), the '**central**' climate change allowance for the epoch that most closely represents the lifetime of the development is our minimum benchmark for flood risk mitigation. In sensitive locations it may be necessary to use the **higher central** (particularly in flood zone 3) to inform built in resilience.

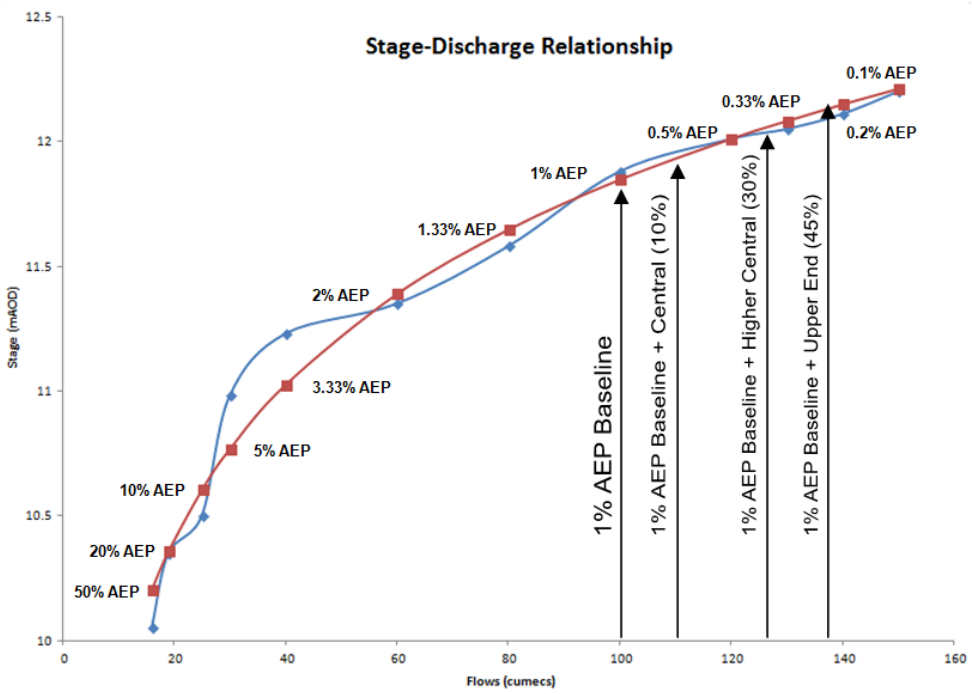
There may be circumstances where local evidence supports the use of other data or allowances. Where you think this is the case we may want to check this data and how you propose to use it.

Appendix 1 – Further information on the Intermediate approach

1) The methodology the chart is based on does not produce an accurate stage-discharge rating and is a simplified methodology for producing flood levels that can be applied in low risk small-scale development situations;

2) The method should not be applied where there is existing detailed modelled climate change outputs that use the new allowances. In such circumstances, the 'with climate change' modelled scenarios should be applied.

An example stage-discharge relationship is shown below:



APPENDIX G
GREENFIELD RUNOFF RATES

Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:	Ryan Whitfield
Site name:	Grove House
Site location:	Sellindge

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

Site Details

Latitude:	51.10506° N
Longitude:	0.99748° E
Reference:	885550016
Date:	Jun 12 2024 12:03

Runoff estimation approach

IH124

Site characteristics

Total site area (ha):	0.65

Methodology

Q_{BAR} estimation method:	Calculate from SPR and SAAR
SPR estimation method:	Calculate from SOIL type

Soil characteristics

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

Hydrological characteristics

	Default	Edited
SAAR (mm):	755	755
Hydrological region:	7	7
Growth curve factor 1 year:	0.85	0.85
Growth curve factor 30 years:	2.3	2.3
Growth curve factor 100 years:	3.19	3.19
Growth curve factor 200 years:	3.74	3.74

Notes

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

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

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

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

(3) Is SPR/SPRHOST ≤ 0.3?

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

Greenfield runoff rates

	Default	Edited

Q_{BAR} (l/s):	1.29	1.29
1 in 1 year (l/s):	1.1	1.1
1 in 30 years (l/s):	2.98	2.98
1 in 100 year (l/s):	4.13	4.13
1 in 200 years (l/s):	4.84	4.84

APPENDIX H
SURFACE WATER DRAINAGE CALCULATIONS

Cascade Summary of Results for crates1_junes.SRCX

Upstream Structures	Outflow To	Overflow To
(None)	basin1.SRCX	(None)

Half Drain Time : 1393 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	69.710	0.710	0.0	1.6	1.6	148.3	O K
30 min Summer	69.830	0.830	0.0	1.7	1.7	173.5	O K
60 min Summer	69.966	0.966	0.0	1.9	1.9	201.9	O K
120 min Summer	70.114	1.114	0.0	2.0	2.0	232.9	O K
180 min Summer	70.203	1.203	0.0	2.1	2.1	251.5	O K
240 min Summer	70.265	1.265	0.0	2.2	2.2	264.3	O K
360 min Summer	70.345	1.345	0.0	2.2	2.2	281.1	O K
480 min Summer	70.393	1.393	0.0	2.3	2.3	291.0	O K
600 min Summer	70.421	1.421	0.0	2.3	2.3	297.1	O K
720 min Summer	70.438	1.438	0.0	2.3	2.3	300.5	O K
960 min Summer	70.468	1.468	0.0	2.3	2.3	306.7	O K
1440 min Summer	70.492	1.492	0.0	2.3	2.3	311.9	O K
2160 min Summer	70.496	1.496	0.0	2.3	2.3	312.7	O K
2880 min Summer	70.479	1.479	0.0	2.3	2.3	309.0	O K
4320 min Summer	70.353	1.353	0.0	2.2	2.2	282.8	O K
5760 min Summer	70.246	1.246	0.0	2.1	2.1	260.5	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	211.077	27
30 min Summer	124.054	41
60 min Summer	72.909	70
120 min Summer	42.850	130
180 min Summer	31.399	188
240 min Summer	25.184	248
360 min Summer	18.454	366
480 min Summer	14.801	484
600 min Summer	12.473	604
720 min Summer	10.846	722
960 min Summer	8.810	938
1440 min Summer	6.572	1162
2160 min Summer	4.902	1556
2880 min Summer	3.982	1964
4320 min Summer	2.858	2808
5760 min Summer	2.259	3632

Cascade Summary of Results for crates1_junes.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
7200 min Summer	70.153	1.153	0.0	2.1	2.1	240.9	O K
8640 min Summer	70.069	1.069	0.0	2.0	2.0	223.5	O K
10080 min Summer	69.993	0.993	0.0	1.9	1.9	207.6	O K
15 min Winter	69.795	0.795	0.0	1.7	1.7	166.2	O K
30 min Winter	69.931	0.931	0.0	1.9	1.9	194.5	O K
60 min Winter	70.084	1.084	0.0	2.0	2.0	226.6	O K
120 min Winter	70.253	1.253	0.0	2.1	2.1	261.9	O K
180 min Winter	70.355	1.355	0.0	2.2	2.2	283.2	O K
240 min Winter	70.427	1.427	0.0	2.3	2.3	298.2	O K
360 min Winter	70.522	1.522	0.0	2.4	2.4	318.1	O K
480 min Winter	70.581	1.581	0.0	2.4	2.4	330.4	O K
600 min Winter	70.619	1.619	0.0	2.4	2.4	338.3	O K
720 min Winter	70.643	1.643	0.0	2.5	2.5	343.3	O K
960 min Winter	70.689	1.689	0.0	2.5	2.5	352.9	O K
1440 min Winter	70.713	1.713	0.0	2.5	2.5	358.1	O K
2160 min Winter	70.715	1.715	0.0	2.5	2.5	358.4	O K
2880 min Winter	70.686	1.686	0.0	2.5	2.5	352.4	O K
4320 min Winter	70.512	1.512	0.0	2.4	2.4	316.1	O K
5760 min Winter	70.359	1.359	0.0	2.2	2.2	284.0	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
7200 min Summer	1.882	4400
8640 min Summer	1.621	5192
10080 min Summer	1.429	6048
15 min Winter	211.077	27
30 min Winter	124.054	41
60 min Winter	72.909	70
120 min Winter	42.850	128
180 min Winter	31.399	186
240 min Winter	25.184	244
360 min Winter	18.454	360
480 min Winter	14.801	476
600 min Winter	12.473	590
720 min Winter	10.846	702
960 min Winter	8.810	922
1440 min Winter	6.572	1318
2160 min Winter	4.902	1648
2880 min Winter	3.982	2112
4320 min Winter	2.858	3028
5760 min Winter	2.259	3872

Cascade Summary of Results for crates1_junes.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
7200 min Winter	70.225	1.225	0.0	2.1	2.1	256.0	O K
8640 min Winter	70.107	1.107	0.0	2.0	2.0	231.4	O K
10080 min Winter	70.003	1.003	0.0	1.9	1.9	209.7	O K

Storm Event	Rain (mm/hr)	Time-Peak (mins)
7200 min Winter	1.882	4752
8640 min Winter	1.621	5544
10080 min Winter	1.429	6360

Cascade Rainfall Details for crates1_junes.SRCX

Rainfall Model	FEH
Return Period (years)	100
Site Location	GB 609650 138700 TR 09650 38700
C (1km)	-0.023
D1 (1km)	0.339
D2 (1km)	0.383
D3 (1km)	0.288
E (1km)	0.311
F (1km)	2.487
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time / Area Diagram

Total Area (ha) 0.379

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.127	4-8	0.126	8-12	0.126

Cascade Model Details for crates1_junes.SRCX

Storage is Online Cover Level (m) 72.000

Cellular Storage Structure

Invert Level (m) 69.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	220.0	0.0	1.801	0.0	0.0
1.800	220.0	0.0	3.000	0.0	0.0

Hydro-Brake® Outflow Control

Design Head (m) 1.800 Diameter (mm) 58
Design Flow (l/s) 2.5 Invert Level (m) 69.000
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.200	2.1	3.000	3.3	7.000	5.1
0.200	1.2	1.400	2.3	3.500	3.6	7.500	5.3
0.300	1.1	1.600	2.4	4.000	3.8	8.000	5.4
0.400	1.2	1.800	2.6	4.500	4.1	8.500	5.6
0.500	1.4	2.000	2.7	5.000	4.3	9.000	5.8
0.600	1.5	2.200	2.8	5.500	4.5	9.500	5.9
0.800	1.7	2.400	3.0	6.000	4.7		
1.000	1.9	2.600	3.1	6.500	4.9		

Cascade Summary of Results for basin1.SRCX

Upstream Structures	Outflow To	Overflow To
crates1_junes.SRCX	(None)	(None)

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
15 min Summer	66.727	0.227	1.4	139.0	O K
30 min Summer	66.773	0.273	1.4	169.6	O K
60 min Summer	66.824	0.324	1.4	205.2	O K
120 min Summer	66.882	0.382	1.4	245.6	O K
180 min Summer	66.918	0.418	1.4	271.8	O K
240 min Summer	66.945	0.445	1.4	291.6	O K
360 min Summer	66.985	0.485	1.5	321.5	O K
480 min Summer	67.015	0.515	1.5	344.1	O K
600 min Summer	67.038	0.538	1.6	362.4	O K
720 min Summer	67.058	0.558	1.6	377.9	O K
960 min Summer	67.097	0.597	1.6	408.5	O K
1440 min Summer	67.153	0.653	1.7	454.3	Flood Risk
2160 min Summer	67.211	0.711	1.8	502.4	Flood Risk
2880 min Summer	67.251	0.751	1.8	536.5	Flood Risk
4320 min Summer	67.274	0.774	1.9	556.1	Flood Risk
5760 min Summer	67.272	0.772	1.9	554.7	Flood Risk
7200 min Summer	67.253	0.753	1.8	538.3	Flood Risk

Storm Event	Rain (mm/hr)	Time-Peak (mins)
15 min Summer	211.077	668
30 min Summer	124.054	969
60 min Summer	72.909	1208
120 min Summer	42.850	1412
180 min Summer	31.399	1532
240 min Summer	25.184	1622
360 min Summer	18.454	1764
480 min Summer	14.801	1878
600 min Summer	12.473	1980
720 min Summer	10.846	2072
960 min Summer	8.810	2256
1440 min Summer	6.572	2586
2160 min Summer	4.902	3036
2880 min Summer	3.982	3468
4320 min Summer	2.858	4336
5760 min Summer	2.259	5768
7200 min Summer	1.882	6848

Cascade Summary of Results for basin1.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m³)	Status
8640 min Summer	67.234	0.734	1.8	521.8	Flood Risk
10080 min Summer	67.217	0.717	1.8	507.1	Flood Risk
15 min Winter	66.758	0.258	1.4	159.9	O K
30 min Winter	66.808	0.308	1.4	194.0	O K
60 min Winter	66.864	0.364	1.4	233.0	O K
120 min Winter	66.926	0.426	1.4	277.4	O K
180 min Winter	66.965	0.465	1.5	306.3	O K
240 min Winter	66.994	0.494	1.5	328.4	O K
360 min Winter	67.037	0.537	1.6	361.7	O K
480 min Winter	67.070	0.570	1.6	387.0	O K
600 min Winter	67.096	0.596	1.6	407.7	O K
720 min Winter	67.118	0.618	1.7	425.2	Flood Risk
960 min Winter	67.160	0.660	1.7	459.9	Flood Risk
1440 min Winter	67.223	0.723	1.8	512.3	Flood Risk
2160 min Winter	67.288	0.788	1.9	568.0	Flood Risk
2880 min Winter	67.333	0.833	1.9	608.3	Flood Risk
4320 min Winter	67.363	0.863	2.0	634.4	Flood Risk
5760 min Winter	67.369	0.869	2.0	640.2	Flood Risk
7200 min Winter	67.356	0.856	2.0	628.9	Flood Risk

Storm Event	Rain (mm/hr)	Time-Peak (mins)
8640 min Summer	1.621	7480
10080 min Summer	1.429	8176
15 min Winter	211.077	882
30 min Winter	124.054	1135
60 min Winter	72.909	1340
120 min Winter	42.850	1532
180 min Winter	31.399	1652
240 min Winter	25.184	1744
360 min Winter	18.454	1888
480 min Winter	14.801	2008
600 min Winter	12.473	2112
720 min Winter	10.846	2208
960 min Winter	8.810	2398
1440 min Winter	6.572	2738
2160 min Winter	4.902	3196
2880 min Winter	3.982	3636
4320 min Winter	2.858	4440
5760 min Winter	2.259	5704
7200 min Winter	1.882	6928

Cascade Summary of Results for basin1.SRCX

Storm Event	Max Level (m)	Max Depth (m)	Max Control (l/s)	Max Volume (m^3)	Status
8640 min Winter	67.333	0.833	1.9	608.3	Flood Risk
10080 min Winter	67.309	0.809	1.9	586.8	Flood Risk

Storm Event	Rain (mm/hr)	Time-Peak (mins)
8640 min Winter	1.621	7984
10080 min Winter	1.429	8560

Cascade Rainfall Details for basin1.SRCX

Rainfall Model	FEH
Return Period (years)	100
Site Location	GB 609650 138700 TR 09650 38700
C (1km)	-0.023
D1 (1km)	0.339
D2 (1km)	0.383
D3 (1km)	0.288
E (1km)	0.311
F (1km)	2.487
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Shortest Storm (mins)	15
Longest Storm (mins)	10080
Climate Change %	+45

Time / Area Diagram

Total Area (ha) 0.335

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.083	4-8	0.083	8-12	0.084	12-16	0.085

Cascade Model Details for basin1.SRCX

Storage is Online Cover Level (m) 67.400

Tank or Pond Structure

Invert Level (m) 66.500

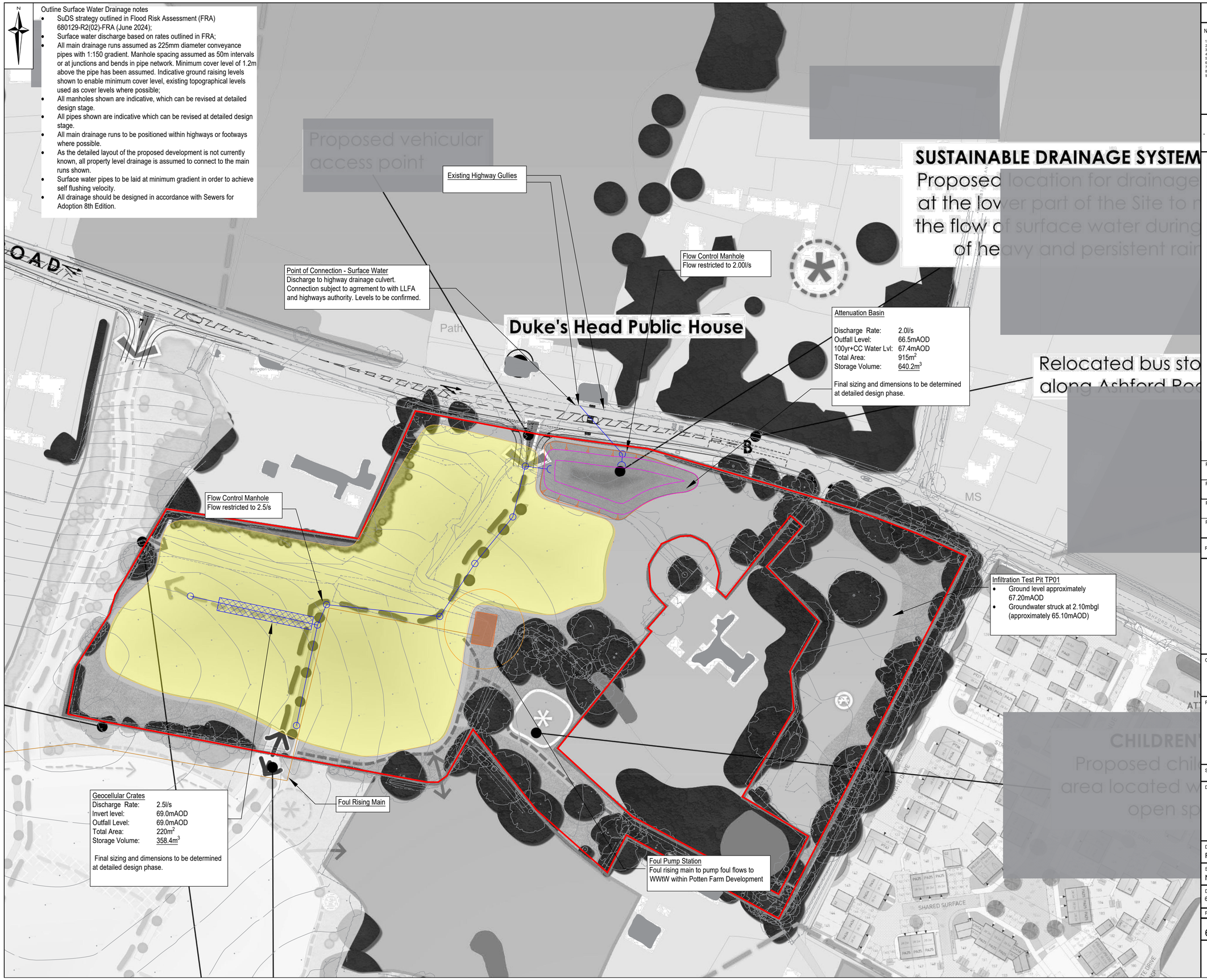
Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	570.0	0.900	915.4

Hydro-Brake® Outflow Control

Design Head (m) 0.900 Diameter (mm) 61
Design Flow (l/s) 2.0 Invert Level (m) 66.500
Hydro-Brake® Type Md6 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.3	1.200	2.3	3.000	3.7	7.000	5.6
0.200	1.3	1.400	2.5	3.500	4.0	7.500	5.8
0.300	1.3	1.600	2.7	4.000	4.2	8.000	6.0
0.400	1.4	1.800	2.8	4.500	4.5	8.500	6.2
0.500	1.5	2.000	3.0	5.000	4.7	9.000	6.4
0.600	1.6	2.200	3.1	5.500	5.0	9.500	6.5
0.800	1.9	2.400	3.3	6.000	5.2		
1.000	2.1	2.600	3.4	6.500	5.4		

APPENDIX I
OUTLINE SURFACE WATER DRAINAGE STRATEGY



RSK LDE LTD - Hydrology Drawing

Notes:

1. This drawing has been produced to planning/viability purposes only.
2. This drawing is indicative and subject to change following layout revisions
3. This drawing is to be read in conjunction with all other relevant drawings and reports.
4. Development Plan provided by the client
5. Topographic Survey provided by the client
6. All dimensions are in metres U.N.O
7. All levels in metres.
8. Do Not Scale from this drawing
9. The details provided on this drawing are subject to comments by all the relevant approving authorities. Until such time as all comments have been received and incorporated onto the drawings, all the information provided and costings, are used at Client's risk and no liability will be accepted by RSK. Scheme based on Client's site plan.

-

KEY

- Site Red Line Boundary
- Development Extent
- Attenuation Basin
- Surface Water Drainage Piped Network
- Foul Pump Station Compound + 15m Cordon Sanitaire
- Geocellular Attenuation

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P04	03.06.24	Draft Issue - updated master plan	RW	CW	CW
P03	22.04.24	Draft Issue - updated master plan	RW	CW	CW
P02	18.03.24	Draft Issue - updated drainage	RW	CW	CW
P01	28.09.23	Draft Issue	RW	CW	CW

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Client

Gladman Developments Ltd

Project Title

LAND SOUTH OF ASHFORD RD
SELLINDGE

Status

Final

Drawing Title

PROPOSED OUTLINE SURFACE WATER DRAINAGE STRATEGY

Drawn	Date	Checked	Date	Approved	Date
RW	JUN.24	CW	JUN.24	CW	JUN.24

Scale	Orig Size	Dimensions	Revision
NTS	A1	M	P04

Drawing File
680129-R2-RSK-A-ALL-P04-03-06-24.DWG

Project No.	Originator	Unit	Site Area	Series	Number	Sheet
680129	LDE		ALL	01	01	01