GeoSmart Information

FloodSmart

Flood Risk Assessment

Site Address

111A Foxley Ln
Purley
Greater London
CR8 3HQ

Grid Reference

529721, 161974

Report Prepared for

Anna Romanenko

Date

2022-09-08

Report Status

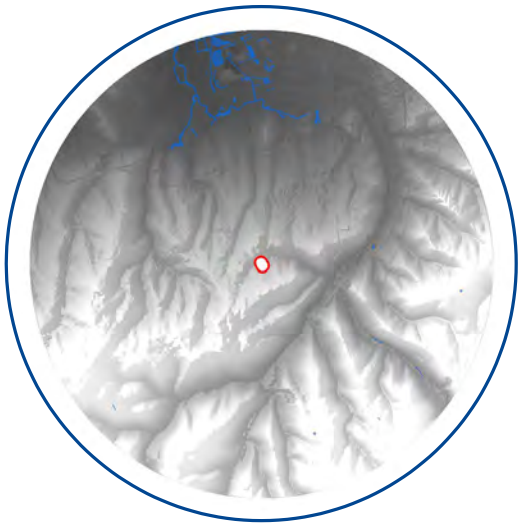
FINAL

Site Area

0.17 ha

Report Reference

77661R1



RISK - Very Low to Low

The Site is located within fluvial and tidal Flood Zone 1 (low probability), and within an area defined as being at Very Low risk. The Site has a Very Low to Low risk of surface water flooding and a Low risk of groundwater flooding.

Report Author

Daniel Howlett
Consultant

Report Checker & Reviewer

Jessica Bayliff
Senior Project Consultant

GeoSmart Information Ltd
Suite 9-11, 1st Floor, Old Bank Buildings,
Bellstone, Shrewsbury, SY1 1HU
+44(0)1743 298 100
info@geosmartinfo.co.uk
www.geosmartinfo.co.uk

1. Executive summary

A review has been undertaken of national environmental data sets to assess the flood risk to the Site from all sources of flooding in accordance with The National Planning Policy Framework (NPPF) (2021) and National Planning Practice Guidance (NPPG) (2014). A site-specific flood risk assessment, to assess the flood risk to and from the development Site, is provided within this concise interpretative report written by an experienced GeoSmart consultant. Baseline flood risk and residual risks that remain after the flood risk management and mitigation measures are implemented are summarised in the table below.

Site analysis

Source of Flood Risk	Baseline	After Mitigation
River (fluvial) and Sea (coastal/tidal) flooding	Very Low	N/A
Surface water (pluvial) flooding	Very Low to Low	Very Low
Groundwater flooding	Low	Negligible
Other flood risk factors present	No	N/A
Is any other further work recommended?	No	No

N/A = mitigation not required

Summary of existing and proposed development

The Site is located in Purley, Greater London in a setting of residential land use. The Site is currently used within a residential capacity as a two-storey detached, five-bedroom dwelling including associated access, car parking and landscaping.

Development proposals comprise the extension of the existing property to the rear and the construction of two, three-bedroom bungalows at the south of the Site, including the formation of new associated access and landscaping.

Summary of flood risks

The flood risks from all sources have been assessed as part of this report and are as follows:

According to the Environment Agency's (EA) Flood Map for Planning Purposes, the Site is located within a fluvial Flood Zone 1 (low probability).

According to the EA's Risk of Flooding from Rivers and Sea (RoFRS) map, which considers the type, condition and crest height of flood defences, the Site has a Very Low risk of flooding from Rivers and the Sea.

According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping, the Site is at a variable risk of pluvial flooding ranging from Very Low to Low.

The proposed development is at Low risk of surface water flooding with depths up to 0.6 m during a 1 in 1000 year event to the rear of the existing property. The remainder of the Site is at Very Low risk of surface water flooding, being unaffected up to and including the 1 in 1000 year event.

Groundwater Flood Risk screening data indicates there is a Low risk of groundwater flooding at the surface in the vicinity of the Site during a 1 in 100 year event.

The risk of flooding from artificial (man-made) sources such as reservoirs, sewers and canals has been assessed:

- The EA's Risk of Flooding from Reservoir map confirms the Site is not at risk of reservoir flooding.
- Ordnance Survey (OS) data confirms there are no canals near to the Site.
- A sewer flooding history search was undertaken with Thames Water and using the Strategic Flood Risk Assessment (AECOM, 2015). This confirms no recorded incidences of sewer flooding at or within the vicinity of the Site

The risk of flooding from artificial sources is considered to be Negligible.

The risk to the development has been assessed over its expected 100 year lifetime, including appropriate allowances for the impacts of climate change. More extreme weather events could increase the risk to the Site from increased potential for surface water flooding. Site specific assessment indicates risk to the Site will not increase significantly and appropriate mitigation measures are proposed.

Recommendations / Next steps

Recommendations for mitigation are provided below, based upon the proposed development and the flood risk identified at the Site:

As there is a risk of flooding from surface water (pluvial) sources, where flood depths could be up to 0.6 m in depth, where possible Finished Floor Levels (FFL) of the proposed development should be set at least 0.3 m above surrounding ground levels and ground levels should aim to slope away from buildings. Ground levels should be designed to channel any overland flows from off-Site (to the east) away from the development and Site drainage systems;

As there is a risk of flooding from groundwater sources at the surface Finished Floor Levels (FFL) of the proposed development should be set at least 0.3 m above surrounding ground levels and ground levels should slope away from buildings. Risk to buried infrastructure should be considered along with water proofing of basement areas, standard flood resilient design and non-return valves on the sewer inlet. French drains and/or pumping systems may also be considered.

A Sustainable Drainage Strategy (SuDS) is currently under development for the Site (ref 77661.01R1); this will include recommendations allowing for the effective management of surface water runoff over the lifetime of the proposed development.

GeoSmart recommend the mitigation measures discussed within this report are considered as part of the proposed development where possible and evidence of this is provided to the Local Planning Authority as part of the planning application.

2. Introduction

Background and purpose

A site-specific flood risk assessment has been undertaken, to assess the flood risk to and from the development Site. This assessment has been undertaken by firstly compiling information concerning the Site and the surrounding area. The information gathered was then used to construct a 'conceptual site model', including an understanding of the appropriateness of the development as defined in the NPPF (2021) and the source(s) of any flood risk present. Finally, a preliminary assessment of the steps that can be taken to manage any flood risk to the development was undertaken.

This report has been prepared with reference to the NPPF (2021) and NPPG (2014).

"*The National Planning Policy Framework set out the Government's planning policies for England and how these are expected to be applied*" (NPPF, 2021).

The NPPF (2021) and NPPG (2014) promote a sequential, risk based approach to the location of development. This also applies to locating a development within a Site which has a variable risk of flooding.

"*This general approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. The aim should be to keep development out of medium and high risk flood areas (Flood Zones 2 and 3) and other areas affected by other sources of flooding where possible*" (NPPG, 2014).

The purpose of this report is to provide clear and pragmatic advice regarding the nature and potential significance of flood hazards which may be present at the Site.

Report scope

In accordance with the requirements set out within NPPG 2014 (Paragraph: 030 Reference ID: 7-030-20140306), a thorough review of a commercially available flood risk report and EA supplied data indicating potential sources of flood risk to the Site from rivers and coastal sources, surface run-off (pluvial), groundwater and reservoirs, including historical flood information and modelled flood extent. Appropriate measures are recommended to manage and mitigate the flood risk to the property.

Information obtained from the EA and a review of the London Boroughs of Croydon, Merton, Sutton and Wandsworth Strategic Flood Risk Assessment (SFRA) (AECOM, 2015) is used to ascertain local flooding issues and, where appropriate, identify information to support a Sequential and/or Exception test required as part of the NPPF (2021).

The existing and future flood risks to and from the Site from all flood sources is assessed in line with current best practice using the best available data. The risk to the development has been assessed over its expected lifetime, including appropriate allowances for the impacts of climate change. Residual risks that remain after the flood risk management and mitigation

measures are implemented, are considered with an explanation of how these risks can be managed to keep the users of the development safe over its lifetime.

An indication of whether the Site will potentially increase flood risk elsewhere is provided, including where the proposed development increases the building footprint at the Site. A drainage strategy to control runoff can be commissioned separately if identified as a requirement within this report.

Report limitations

It is noted that the findings presented in this report are based on a desk study of information supplied by third parties. Whilst we assume that all information is representative of past and present conditions, we can offer no guarantee as to its validity and a proportionate programme of site investigations would be required to fully verify these findings.

The basemap used is the OS Street View 1:10,000 scale, however the Site boundary has been drawn using BlueSky aerial imagery to ensure the correct extent and proportion of the Site is analysed.

This report excludes consideration of potential hazards arising from any activities at the Site other than normal use and occupancy for the intended land uses. Hazards associated with any other activities have not been assessed and must be subject to a specific risk assessment by the parties responsible for those activities.

Datasets

The following table shows the sources of information that have been consulted as part of this report:

Table 1. Datasets consulted to obtain confirmation of sources of flooding and risk

Source of flooding	Datasets consulted				
	Commercial Flood Maps	SFRA*	Environment Agency	Utility Provider	OS Data
Historical	X	X	X		
Fluvial/tidal	X	X	X		
Surface water (pluvial)	X	X	X		

Source of flooding	Datasets consulted				
	Commercial Flood Maps	SFRA*	Environment Agency	Utility Provider	OS Data
Groundwater	X	X			
Sewer		X		X	
Culvert/bridges		X			X
Reservoir		X	X		

*The SFRA and local guidance have been used to inform this report as referenced in Section 6.

3. Site analysis

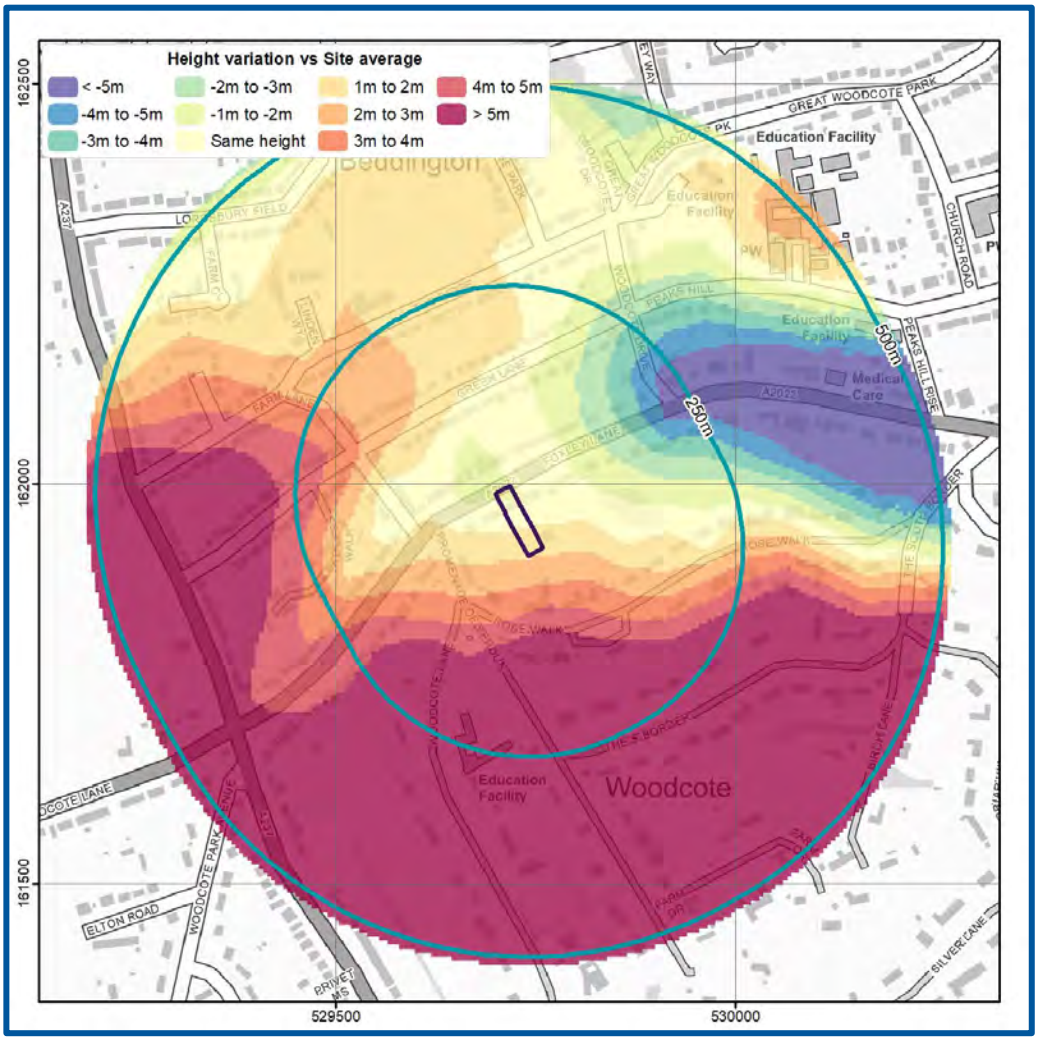
Site information

The Site is located in Purley, Greater London in a setting of residential land use at National Grid Reference TQ 29721 61974. Site plans and drawings are provided in Appendix A.

According to OS data, using a 500 m buffer around the Site, the area is on a gentle slope (Figure 1). It is noted that to the north land falls to c. 100 m above Ordnance Datum (AOD). To the west land rises to c. 105 mAOD, to the east land falls to c. 92 mAOD and to the south rises to c. 119 mAOD.

The general ground levels on the Site are between 98.1 and 101.1 mAOD with the Site falling gradually in an easterly direction. This is based on EA elevation data obtained for the Site to a 1 m resolution with a vertical accuracy of ±0.15 m (Appendix B).

Figure 1. Site Location and Relative Elevations (GeoSmart, 2022).



Development

The Site is currently used within a residential capacity as a two-storey detached, five-bedroom dwelling including associated access, car parking and landscaping.

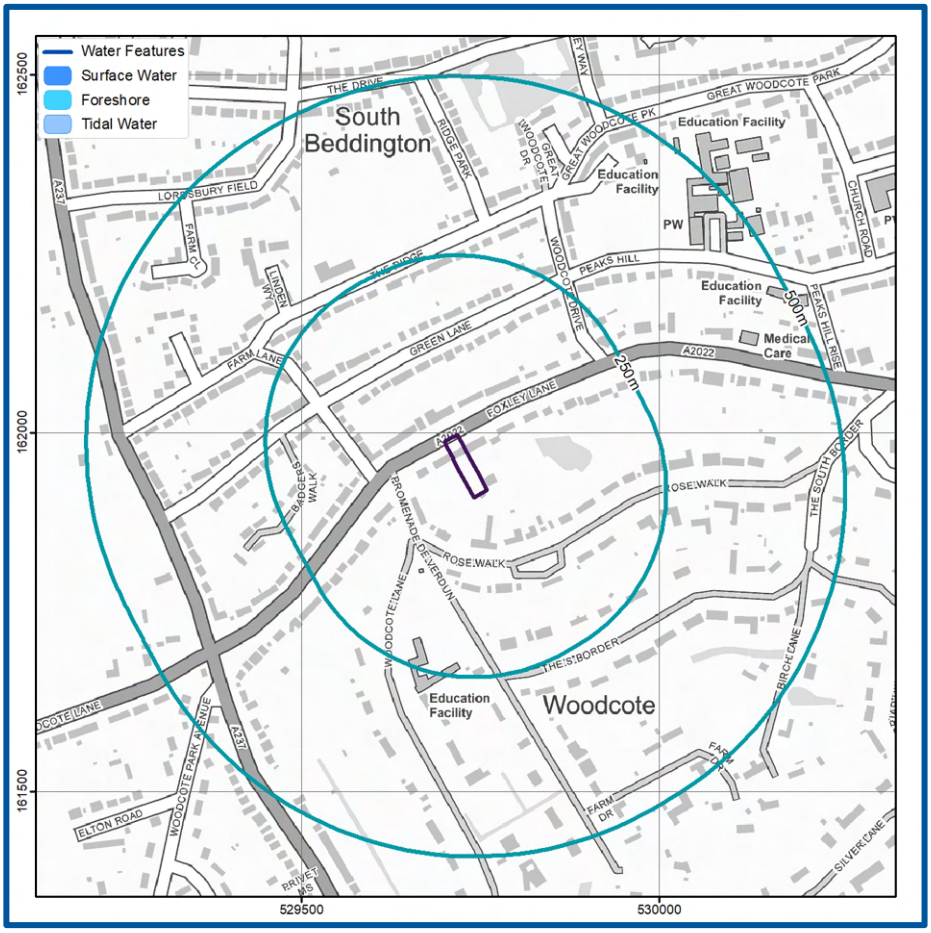
Development proposals comprise the extension of the existing property to the rear and the construction of two, three-bedroom bungalows at the south of the Site, including the formation of new associated access and landscaping. Site plans are included within Appendix A.

The effect of the overall development will result in an increase in number of occupants and/or users of the Site but will not result in the change of use, nature or times of occupation. According to Table 2 of the NPPG (2014), the vulnerability classification of the existing development is More Vulnerable and proposed development is More Vulnerable. The estimated lifespan of the development is 100 years.

Hydrological features

According to Ordnance Survey (OS) mapping included in the following figure, there are no mapped surface water features within 500 m of the Site.

Figure 2. Surface water features (EA, 2022)



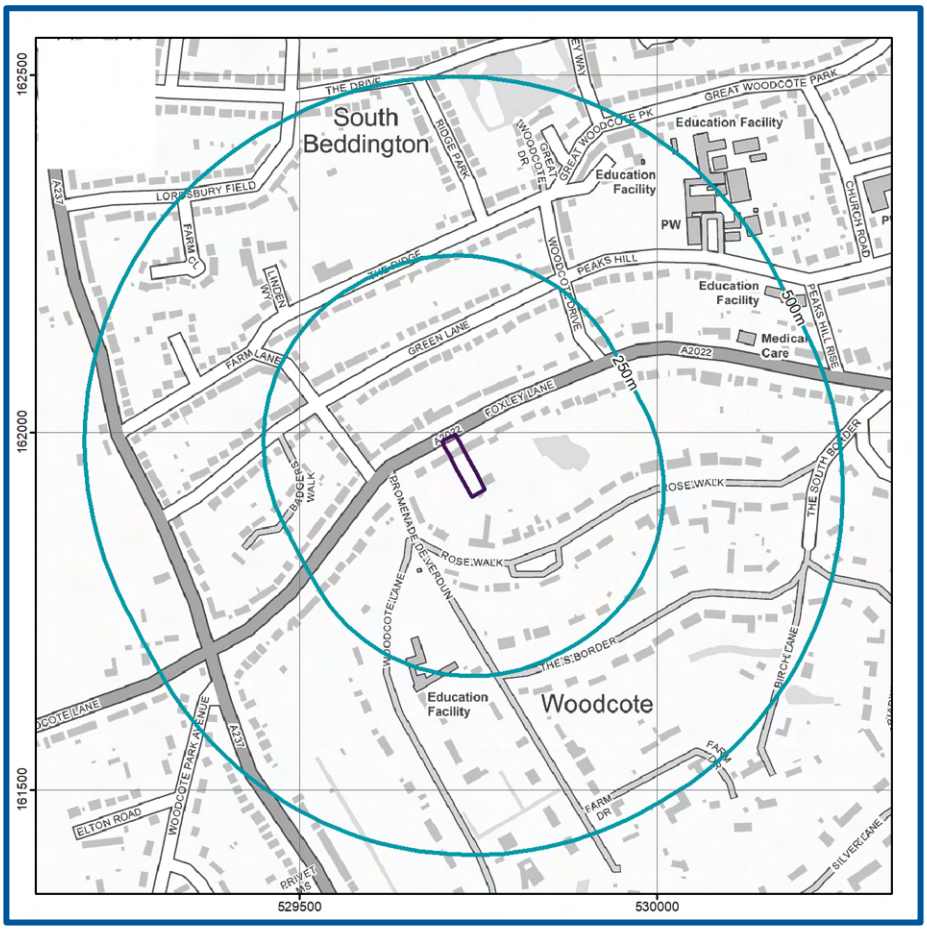
Proximity to relevant infrastructure

There is no relevant infrastructure located within 500 m of the Site.

Hydrogeological features

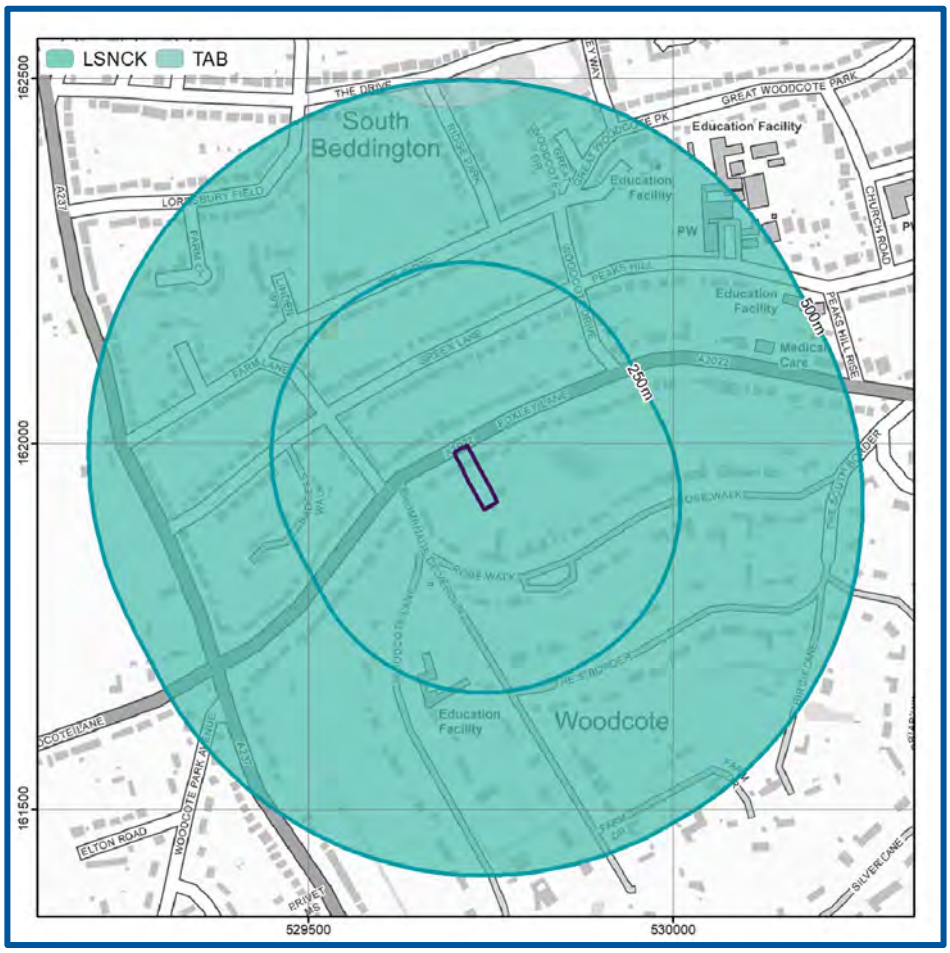
British Geological Survey (BGS) mapping indicates the absence of underlying superficial geology (Figure 3) (EA, 2022).

Figure 3. Superficial Geology (BGS, 2022)



BGS mapping indicates the underlying bedrock geology (Figure 4) consists of the Lewes Nodular Chalk Formation, Seaford Chalk Formation And Newhaven Chalk Formation (LSNCK) (BGS, 2022) and is classified as a Principal Aquifer (EA, 2022).

Figure 4. Bedrock Geology (BGS, 2022)



The Site lies within an outer groundwater Source Protection Zone (SPZ II) (EA, 2022).

A review of the BGS borehole database (BGS, 2022) indicates there are no relevant boreholes within the vicinity of the Site from which the mapped geology can be confirmed.

The hydrogeological characteristics suggest there is potential for a groundwater table beneath the Site.

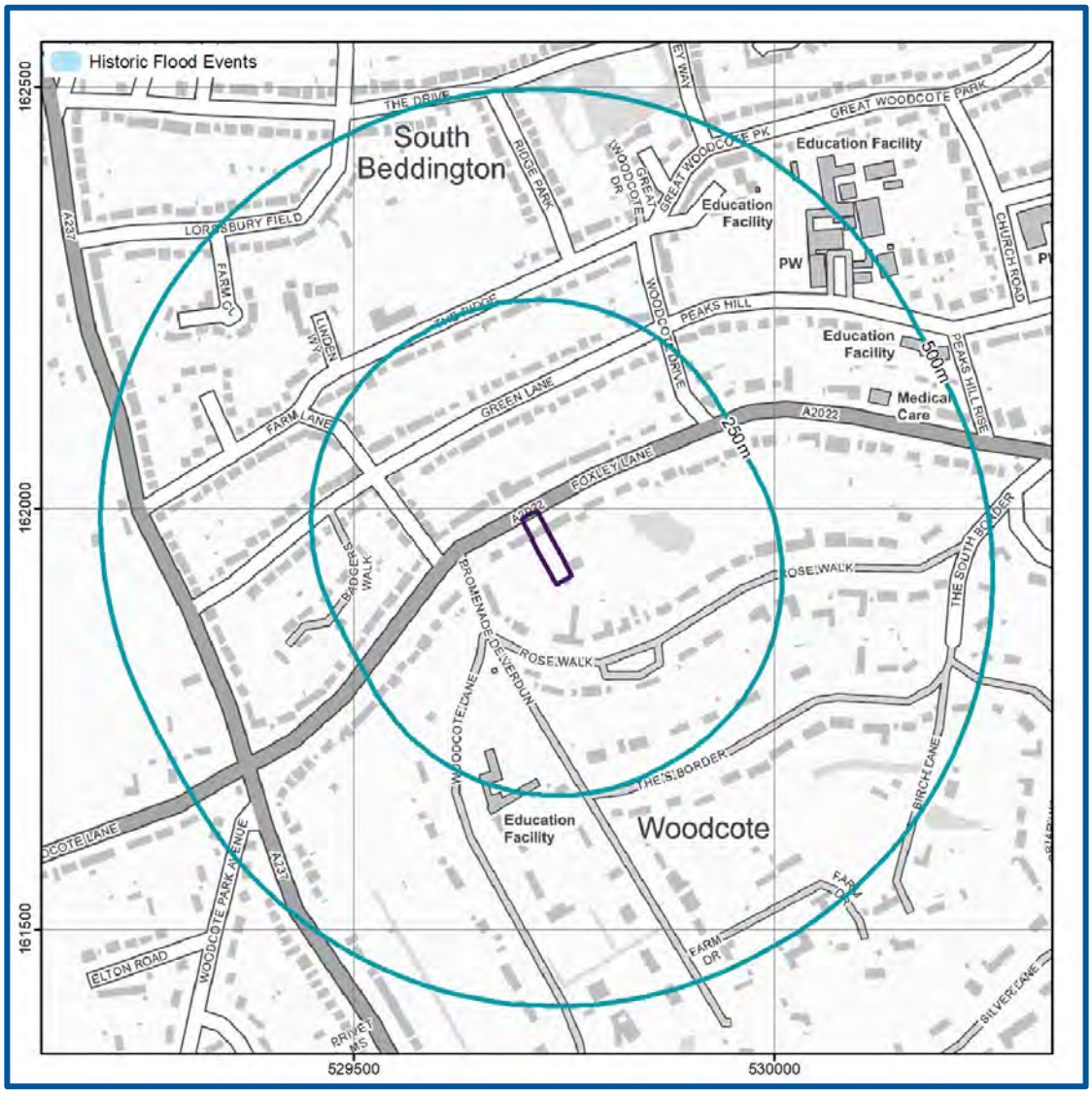
Groundwater levels may rise in the bedrock aquifer in response to prolonged rainfall recharge which may cause an unusually high peak in groundwater levels during some years, subject to hydraulic continuity between the groundwater system and the Site.

4. Flood risk to the development

Historical flood events

According to the EA's historical flood map (Figure 5) no historical flood events have been recorded at the Site (EA, 2022).

Figure 5. EA historic flood map (EA, 2022)



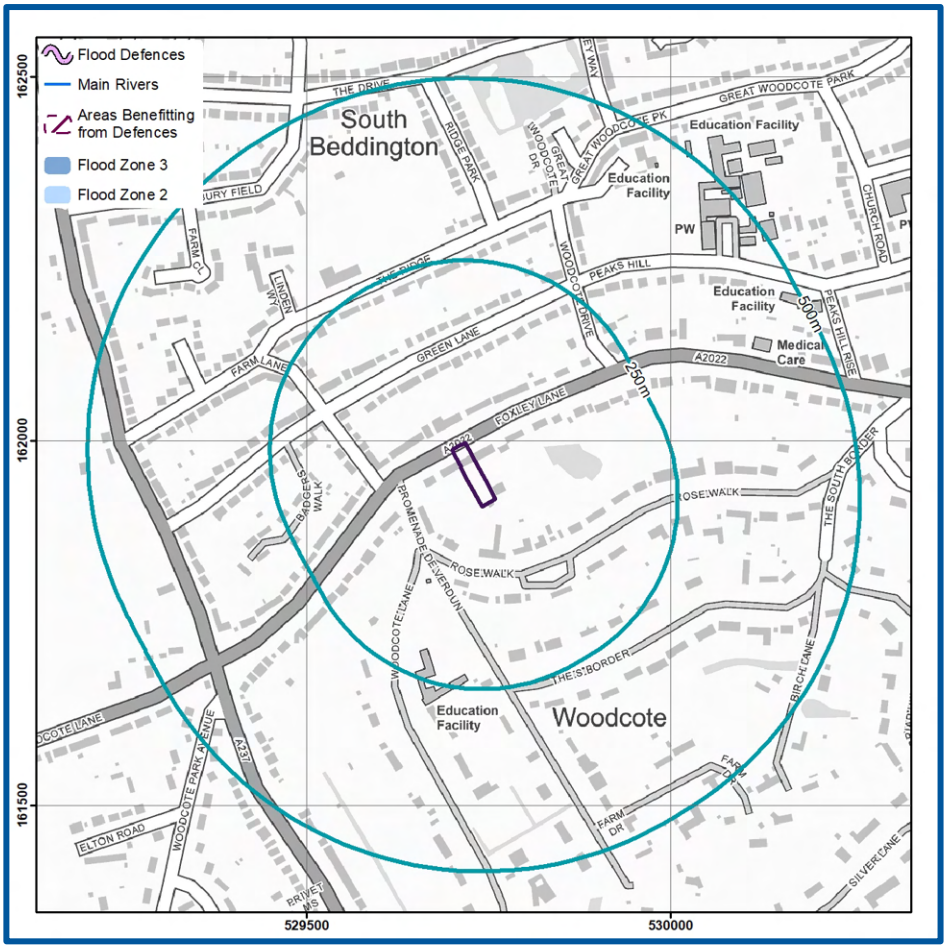
According to Figure 3A of the SFRA, there have been no records of historic flooding at the Site (AECOM, 2015).

The purpose of historical flood data is to provide information on where and why flooding may have occurred in the past. The absence of any recorded events does not mean flooding has never occurred on-Site or that flooding will never occur at the Site.

Rivers (fluvial) / Sea (coastal/tidal) flooding

According to the EA's Flood Map for Planning Purposes (Figure 6), the Site is located within fluvial Flood Zone 1 and is therefore classified as having a Low probability of fluvial flooding. The Site lies approximately 1.65 km to the north west of the nearest land within Flood Zones 2 and 3.

Figure 6. EA Flood Map for Planning Purposes (EA, 2022)



Guidance

As defined in the NPPF (2021):

Ignoring the presence of any defences, land located in a Flood Zone 1 is considered to have a Low probability of flooding, with less than a 1 in 1000 annual probability of fluvial or coastal flooding in any one year.

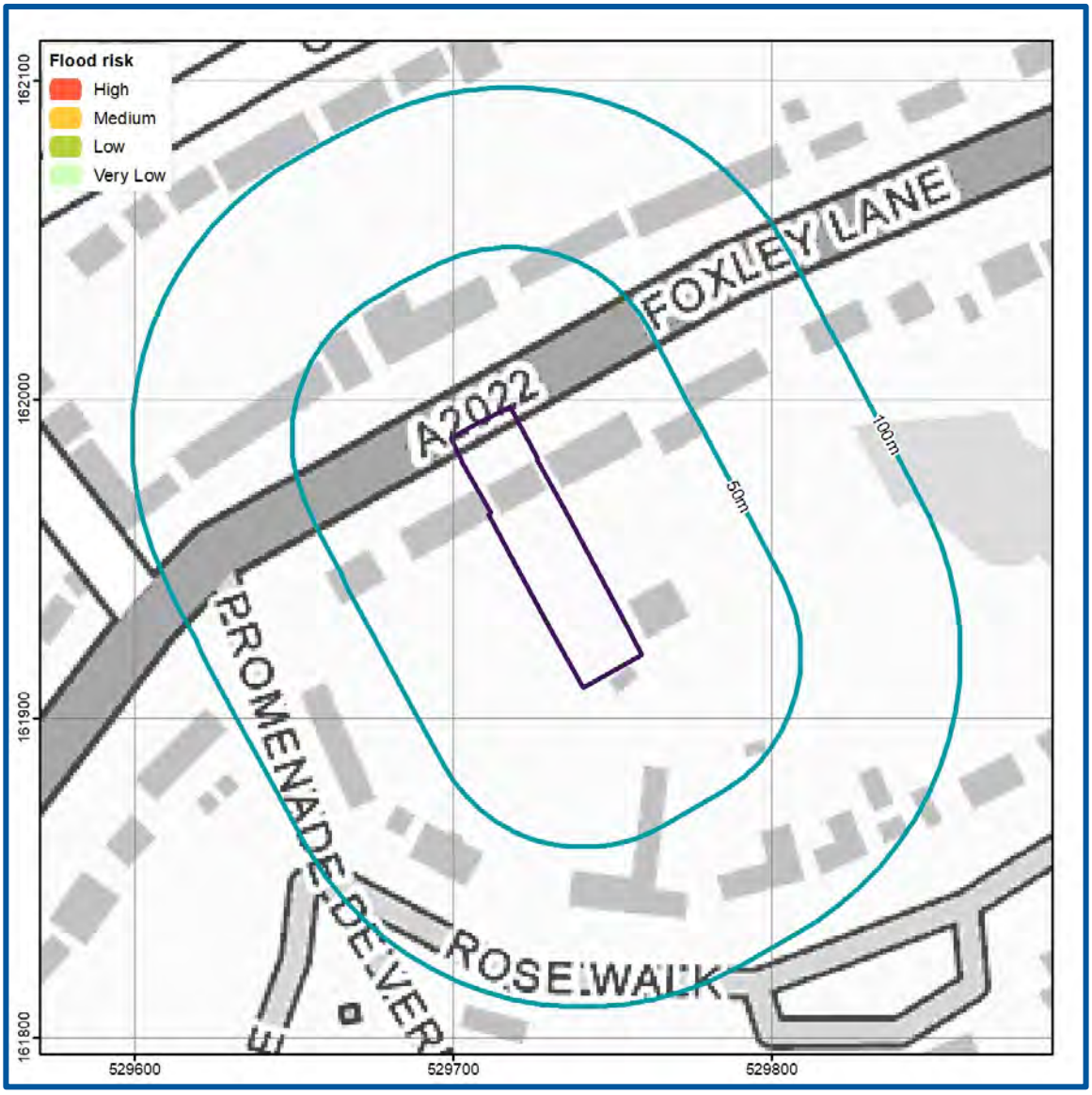
Development of all uses of land is appropriate in this zone (see glossary for terminology).

Flood risk including the benefit of defences

The type and condition of existing flood defences influence the 'actual' risk of fluvial flooding to the Site, albeit the long-term residual risk of flooding (ignoring the defences) should be considered when proposing new development.

According to the EA's Risk of Flooding from Rivers and the Sea (RoFRS) mapping (Figure 7), which considers the crest height, standard of protection and condition of defences, the flood risk from Rivers and the Sea is Very Low.

Figure 7. Risk of Flooding from Rivers and Sea map (EA, 2022)

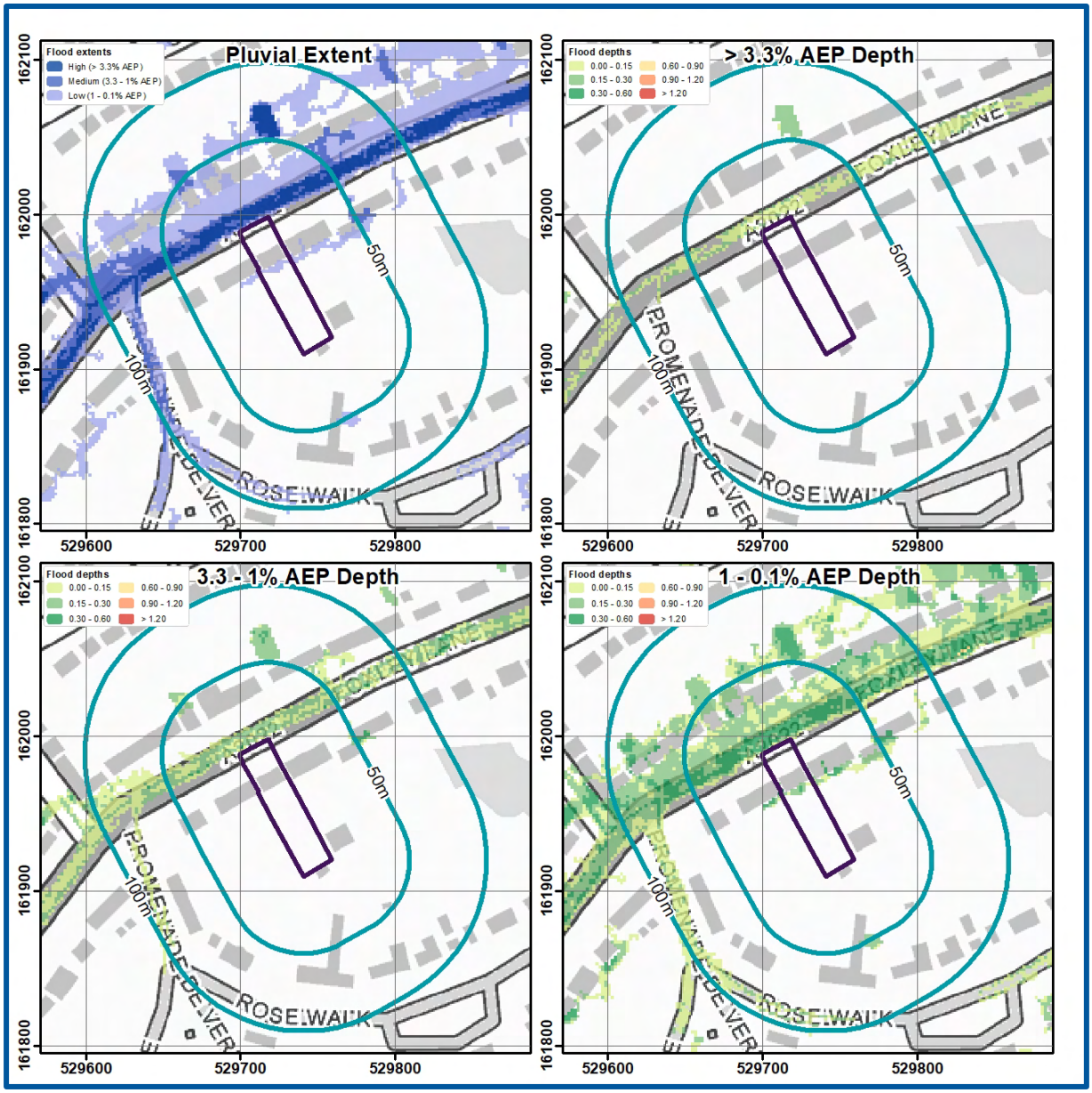


Surface water (pluvial) flooding

Surface water flooding occurs when intense rainfall exceeds the infiltration capacity of the ground and overwhelms the drainage systems. It can occur in most locations even at higher elevations and at significant distances from river and coastal floodplains.

According to the EA's Risk of Flooding from Surface Water (pluvial) flood mapping (Figure 8), the Site is at a variable risk of pluvial flooding, ranging Very Low to Low risk of pluvial flooding.

Figure 8. EA Medium surface water flood risk map (EA, 2022)



Guidance

According to EA's surface water flood risk map the Site is at:

- Very Low risk - chance of flooding of less than 1 in 1000 (0.1%).
- Low risk - chance of flooding of between a 1 in 1000 & 1 in 100 (0.1% and 1%).

Figure 8 confirms the extent and depth of flooding during 3.3% AEP (1 in 30 year – high risk), 1% AEP (1 in 100 year – medium risk) and 0.1% AEP (1 in 1000 year – low risk) events. This confirms that the development area is at Low risk of surface water flooding with depths up to 0.6 m during a 1 in 1000 year event. The remainder of the Site is at Very Low risk of surface water flooding, being unaffected up to and including the 1 in 1000 year event.

Guidance

According to EA's surface water flood risk map the following advisory guidance applies to the Site:

Flood Depth

- 0.15 to 0.3 m - Flooding would: typically exceed kerb height, likely exceed the level of a damp-proof course, cause property flooding in some areas
- 0.3 to 0.9 m - Flooding is likely to exceed average property threshold levels and cause internal flooding. Resilience measures are typically effective up to a water depth of 0.60m above floor level.

Analysis of OS mapping, ground elevation data and the EA's pluvial flow route mapping in the 1 in 1000 year event confirms the Site is located on a potential overland flow route during a Low risk scenario.

During this event the majority of of flow velocities are less than 0.25 m/s. The flows could potentially affect the buildings and/or access routes to the Site.

Water may flow onto the Site from adjacent land to the west and should be managed, in addition to run-off generated on-Site.

The Site may potentially transmit overland flows off-Site in an easterly direction.

A review of the Site plans, topography and the EA's Risk of Flooding from Surface Water Direction mapping indicates overland flows on the Site would be obstructed by the proposed development.

The SFRA does not indicate reported incidents of historical surface water flooding within 100 m of the Site (AECOM, 2015). The SFRA confirms the Site is not located within a Critical Drainage Area (CDA)[1] (AECOM, 2015).

[1] A Critical Drainage Area (CDA) is an area that has critical drainage problems and which has been notified to the local planning authority as such by the Environment Agency in line with the National Planning Policy Framework (NPPF,

Climate change may lead to an increase in rainfall intensity which affects river levels, land and urban drainage systems. Rainfall intensity for small and urban catchments may increase from 5 to 20% (central estimate) or 10% to 40% (Upper estimate) over the period to 2115 (EA, 2022). The Site is susceptible to overland flow and/or surface water flooding which may be increased as a result of climate change.

On-Site surface water drainage systems should be designed appropriately to manage the run-off.

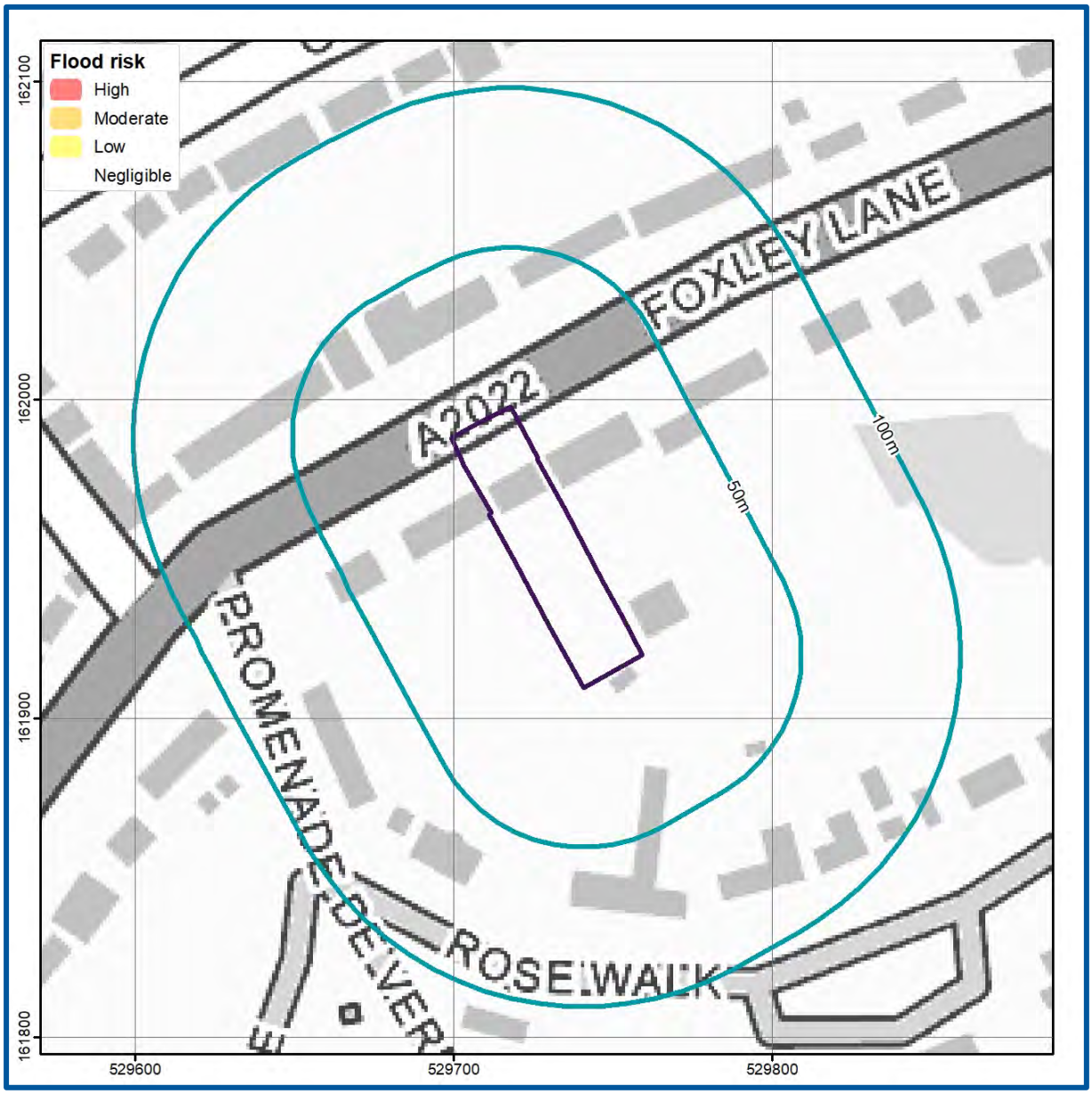
2021). CDA's are specific to Flood Zone 1, defined as areas where runoff can and may have historically contributed to flooding downstream, although they are not necessarily areas where flooding problems may occur. Where a Site is located in Flood Zone 1 and within a CDA, a Flood Risk Assessment (FRA) is required and the Council may also request Sustainable Drainage Scheme (SuDS) features to be included within the proposed development.

Groundwater flooding

Groundwater flooding occurs when sub-surface water emerges from the ground at the surface or into Made Ground and structures. This may be as a result of persistent rainfall that recharges aquifers until they are full; or may be as a result of high river levels, or tides, driving water through near-surface deposits. Flooding may last a long time compared to surface water flooding, from weeks to months. Hence the amount of damage that is caused to property may be substantially higher.

Groundwater Flood Risk screening data (Figure 9) indicates there is a Negligible risk of groundwater flooding at surface in the vicinity from permeable bedrock during a 1 in 100 year event.

Figure 9. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2022)



Mapped classes combine likelihood, possible severity and the uncertainty associated with predicting the subsurface system. The map is a national scale screening tool to prompt site-specific assessment where the impact of groundwater flooding would have significant adverse consequences. Mapping limitations and a number of local factors may reduce groundwater flood risk to land and property even where it lies within mapped groundwater flood risk zones, which do not mean that groundwater floods will occur across the whole of the risk area

The SFRA does not indicate any reported incidents of historical ground water flooding within 20 m of the Site (AECOM, 2015).

A site-specific assessment has been undertaken to refine the groundwater risk screening information on the basis of site-specific datasets (see Section 3) and the EA's fluvial and tidal floodplain data (where available) to develop a conceptual groundwater model. The risk rating is refined further using the vulnerability of receptors including occupants and the existing and proposed Site layout, including the presence of basements and buried infrastructure. The presence of any nearby or on-Site surface water features such as drainage ditches, which could intercept groundwater have also been considered.

Based on a review of site-specific data groundwater levels may rise in the bedrock aquifer in response to prolonged rainfall recharge events.

It is noted that groundwater flooding may occur in response to prolonged high river levels even if overtopping of flood defences does not occur.

The presence of local drainage features is likely to intercept the groundwater.

The local topography is such that the development threshold is likely to be higher than the area where groundwater emerges in adjacent low points.

On the basis of the site-specific assessment the groundwater flood risk is considered to be Negligible.

The risks are higher for basements, buried infrastructure and soak-away systems which may be affected by high groundwater levels. However, the proposed development does not include the construction of any basements/ buried infrastructure.

Guidance
Low Risk - There will be a remote possibility that incidence of groundwater flooding could lead to damage to property or harm to other sensitive receptors at, or near, this location.

Climate change predictions suggest an increase in the frequency and intensity of extremes in groundwater levels. Rainfall recharge patterns will vary regionally resulting in changes to average groundwater levels. A rise in peak river levels will lead to a response of increased groundwater levels in adjacent aquifers subject to the predicted climate change increases in peak river level for the local catchment. Sea level rises of between 0.4m and 1m are predicted by 2100, leading to a rise in average groundwater levels in the adjacent coastal aquifer systems, and potential increases in water levels in the associated drainage systems. The 'backing up' of groundwater levels from both coast and tidal estuary locations may extend a

significant distance inland and affect infrastructure previously constructed above average groundwater levels.

The impact of climate change on groundwater levels beneath the Site is linked to the variation in rainfall recharge which is uncertain.

Based on the available evidence the resulting increase to groundwater flood risk is not considered significant.

Flooding from artificial sources

Artificial sources of flood risk include waterbodies or watercourses that have been amended by means of human intervention rather than natural processes. Examples include reservoirs (and associated water supply infrastructure), docks, sewers and canals. The flooding mechanism associated with flood risk from artificial sources is primarily related to breach or failure of structures (reservoir, lake, sewer, canal, flood storage areas, etc.)

Sewer flooding

Figure 5 of the SFRA has identified 0 incidences or modelled incidences of flooding as a result of surcharging sewers within the CR8 3 postcode (AECOM, 2015).

The SWMP confirms the Site has not been identified as a "Local Flooding Hot Spot".

The SFRA does not state that the area surrounding the Site is at risk from sewer flooding (AECOM, 2015) and the local water company did not respond within the timeframe of this report.

Guidance

Properties classified as "at risk" are those that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system either once or twice in the ten year reference period. Records held by the sewage utility company provide information relating to reported incidents, the absence of any records does not mean that the Site is not at risk of flooding.

Canal failure

According to Ordnance Survey (OS) mapping, there are no canals within 500 m of the Site.

Water supply infrastructure

Water supply infrastructure is comprised of a piped network to distribute water to private houses or industrial, commercial or institution establishments and other usage points. In urban areas, this represents a particular risk of flooding due to the large amount of water supply infrastructure, its condition and the density of buildings. The risks of flooding to properties from burst water mains cannot be readily assessed.

If more information regarding the condition and history of the water supply infrastructure within the vicinity of the Site is required, then it is advisable to contact the local water supplier (Thames Water).

Culverts and bridges

The blockage of watercourses or structures by debris (that is, any material moved by a flowing stream including vegetation, sediment and man-made materials or refuse) reduces flow capacity and raises water levels, potentially increasing the risk of flooding. High water levels can cause saturation, seepage and percolation leading to failure of earth embankments or other structures. Debris accumulations can change flow patterns, leading to scour, sedimentation or structural failure.

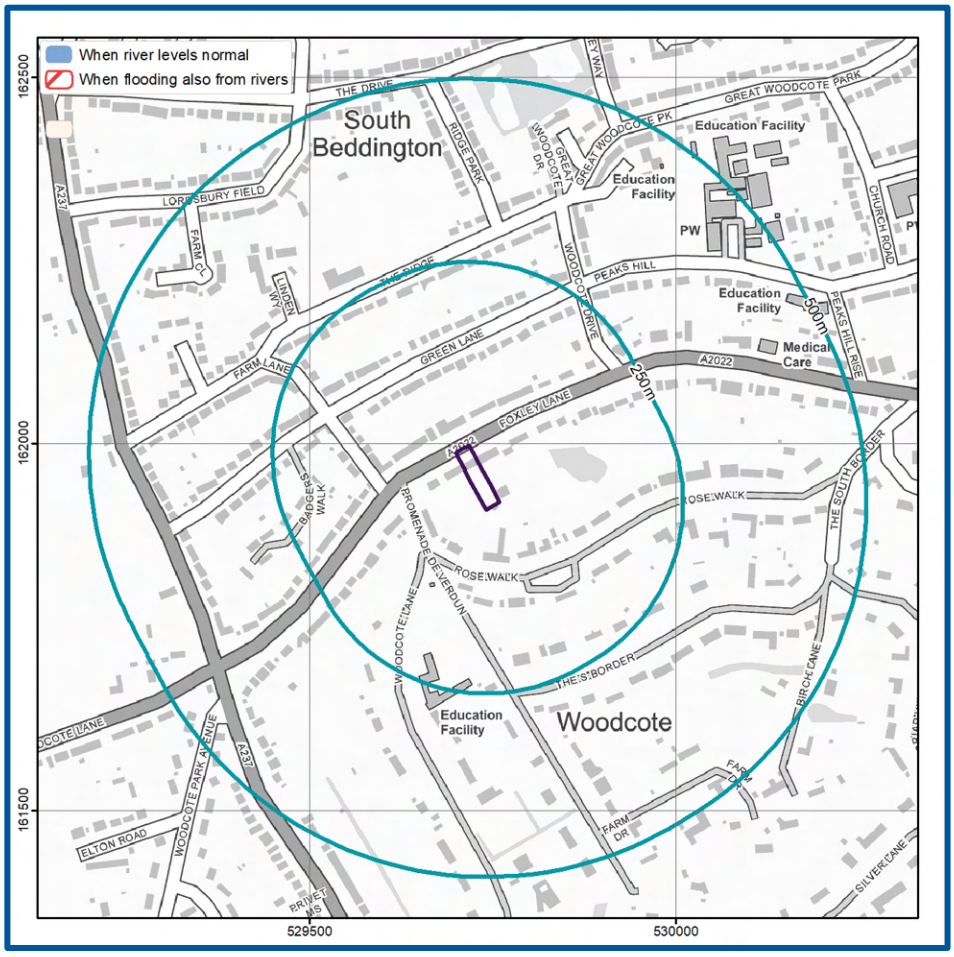
Culverts and bridges have not been identified within 500 m of the Site.

The SFRA has not identified any historic drainage issues within the Site area (AECOM, 2015).

Reservoir flooding

According to the EA's Risk of Flooding from Reservoir mapping the Site is not at risk of flooding from reservoirs (Figure 10) (EA, 2022).

Figure 10. EA Risk of Reservoir Flooding (EA, 2022)



Guidance

The risk of reservoir flooding is related to the failure of a large reservoir (holding over 25,000 m^3 of water) and is based on the worst-case scenario. Reservoir flooding is extremely unlikely to occur (EA, 2022).

5. Flood risk from the development

Floodplain storage

As the development is located within Flood Zone 1, there would be no losses in floodplain storage as a result of the development.

Drainage and run-off

The proposed development involves an increase in the coverage of impermeable surfaces at the Site. As a result, the rate and volume of runoff from the development is likely to increase over its lifetime. Therefore, an estimation of run-off is required to permit effective Site water management and prevent any increase in flood risk to off-Site receptors from the Site, over the lifetime of the proposed development.

The potential surface water run-off generated from the Site during a 1 in 100 year return period should be calculated, using FEH 2013 rainfall data from the online Flood Estimation Handbook (FEH), developed by NERC (2009) and CEH (2016).

The NPPF (2021) recommends the effects of climate change are incorporated into FRA's and the recently updated climate change guidance (published in 2016 and updated in 2021) confirms the requirements for inclusion within FRA's.

As the proposed development is classed as residential, the lifespan of the development and requirements for climate change should allow up to the 2115 scenario.

Table 2. Climate change rainfall allowances

London Management Catchment	2050's		2070's	
	Central	Upper	Central	Upper
1% AEP	20%	35%	25%	35%
3.3% AEP	20%	40%	20%	40%

Sustainable Drainage System (SuDS)

It is recommended attenuation of run-off is undertaken on-Site to compensate for proposed increases in impermeable surface areas. Attenuation may comprise the provision of storage within a Sustainable Drainage System (SuDS). SuDS can deliver benefits from improving the management of water quantity, water quality, biodiversity and amenity For further guidance regarding the management of surface water flows and Site drainage systems, please refer to the forthcoming SuDS report (ref: 77661.01R1) being prepared for the Site.

6. Suitability of the proposed development

The information below outlines the suitability of proposed development in relation to national and local planning policy.

National policy and guidance

The aims of the national planning policies are achieved through application of the Sequential Test and in some cases the Exception Test.

Guidance
Sequential test: The aim of this test is to steer new development towards areas with the lowest risk of flooding (NPPF, 2021). Reasonably available sites located in Flood Zone 1 should be considered before those in Flood Zone 2 and only when there are no reasonably available sites in Flood Zones 1 and 2 should development in Flood Zone 3 be considered.
Exception test: In some cases, this may need to be applied once the Sequential Test has been considered. For the exception test to be passed it must be demonstrated that the development would provide wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

Suitability of the proposed development, and whether the Sequential and Exception Tests are required, is based on the Flood Zone the Site is located within and the flood risk vulnerability classification of the existing and proposed development. Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

This report has been produced to assess all development types, prior to any development. The vulnerability classification and Flood Zones are compared within Table 3 overleaf (Table 3 of the NPPG (2014)).

As the Site is located within Flood Zone 1, all types of development listed within the Table overleaf are acceptable according to National Policy.

Table 3. Flood risk vulnerability and flood zone 'compatibility (taken from NPPG, 2014)

Flood risk vulnerability classification		Essential infrastructure	Water compatible	Highly vulnerable	More vulnerable	Less vulnerable
Flood Zone	Zone 1 – low probability	✓	✓	✓	✓	✓
	Zone 2 – medium probability	✓	✓	Exception test required	✓	✓
	Zone 3a - high probability	Exception test required	✓	X	Exception test required	✓
	Zone 3b – functional flood plain	Exception test required	✓	X	X	X

Local policy and guidance

For this report, documents have been consulted for local policy and guidance and relevant information is outlined below:

London Boroughs of Croydon, Merton, Sutton and Wandsworth Strategic Flood Risk Assessment (AECOM, 2015):

- Policy 5.11 of the London Plan states "Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible"
- "All More Vulnerable and Highly Vulnerable development within Flood Zones 2 and 3 should set Finished Floor Levels a minimum of 300mm above the known or modelled 1 in 100 annual probability (1% AEP) flood level including an allowance for climate change."

Guidance

Strategic Flood Risk Assessments are carried out by local authorities, in consultation with the Environment Agency, to assess the flood risk to the area from all sources both now and in the future due to climate change. They are used to inform planning decisions to ensure inappropriate development is avoided (NPPF, 2021).

7. Resilience and mitigation

Based on the flood risk identified at the Site, the national and local policies and guidance and proposed development, the mitigation measures outlined within this section of the report are likely to help protect the development from flooding.

Sea (coastal/tidal) flood mitigation measures

As the Site is not identified as being at risk of flooding from the sea, mitigation measures are not required.

Rivers (fluvial) flood mitigation measures

As the Site is not identified as being at risk of flooding from fluvial sources, mitigation measures are not required.

Surface water (pluvial) flood mitigation measures

A Low surface water (pluvial) flooding risk has been identified at the Site. In order to ensure the development includes sufficient flood mitigation measures to reduce the risk of pluvial flooding over its lifetime, the flood depths, levels and appropriate mitigation measures are summarised below:

Flood event	Flood depth (m)	Flood level (mAOD)
1 in 30	No flooding	N/A
1 in 100	No flooding	N/A
1 in 1000	0 – 0.6 m	100.3

The implementation of the recommended drainage features and runoff storage detailed within the accompanying SuDS Report (ref: 77661.01R1) is considered sufficient to mitigate the risk of surface water flooding to the Site. As part of the development proposals include the extension of an existing property, the raising of Finished Floor Levels may not be possible in these areas.

Additional Mitigation

Where Finished Floor Levels cannot be raised, it may be appropriate to adopt a water exclusion strategy for flood depths up to 0.3 m in line with the EA's Standing Advice. A water exclusion strategy, using avoidance and resistance measures, is appropriate where floods are expected to last for short durations. Potential water exclusion strategies include:

- Passive flood door systems;

- Temporary flood barriers;
- Air brick covers (manual or automatic closing);
- Non-return flap valves on sewer outfalls.
- Construction of local bunds;
- Landscaping to divert water away from the property;
- Sustainable Drainage Systems (SuDS) to store/intercept flood water;
- Boundary walls/fencing;

Avoidance and resistance measures are unlikely to completely prevent floodwater entering a property, particularly during longer duration flood events. Therefore, it is recommended that the following flood resilience measures are also considered.

- Flood resilient materials and designs:
    - Use of low permeability building materials up to 0.3 m such as engineering bricks (Classes A and B) or facing bricks;
    - Hard flooring and flood resilient metal staircases;
    - The use of internal lime plaster/render or where plasterboards are used these should be fitted horizontally instead of vertically and/or using moisture resistant plasterboard at lower levels;
    - Water, electricity and gas meters and electrical sockets should be located above the predicted flood level;
    - Communications wiring: wiring for telephone, TV, Internet and other services should be protected by suitable insulation in the distribution ducts to prevent damage.

In addition, the regular maintenance of any drains and culverts surrounding/on the Site should be undertaken to reduce the flood risk.

A surface water drainage strategy (SuDS) is being prepared separately (ref: 77661.01R1) to ensure surface water runoff can be managed effectively over the lifetime of the proposed development.

If these mitigation measures are implemented this could reduce the flood risk to the development from Low to Very Low.

Groundwater flood mitigation measures

It is likely the flood mitigation measures recommended for river/sea or surface water (pluvial) risk will be sufficient to reduce the groundwater flood risk at the development. However specific groundwater measures that may also be considered for the Low risk identified include:

- Waterproof tanking of the ground floor and basement;
- Interceptor drains;

- Automatic sump to extract flood water; and
- Non-return flap valves on the proposed foul and surface water sewer lines.

Reservoir flood mitigation measures

The Site is not a risk of flooding from reservoirs; therefore, mitigation measures are not required.

Other flood risk mitigation measures

As the Site is not identified as at risk from other sources, mitigation measures are not required.

Residual flood risk mitigation measures

The risk to the Site has been assessed from all sources of flooding and appropriate mitigation and management measures proposed to keep the users of the development safe over its lifetime. There is however a residual risk of flooding associated with the potential for failure of mitigation measures if regular maintenance and upkeep isn't undertaken. If mitigation measures are not implemented or maintained, the risk to the development will remain as the baseline risk.

Further flood mitigation information

More information on flood resistance, resilience and water entry can be found here: http://www.planningportal.gov.uk/uploads/br/flood_performance.pdf

www.knowyourfloodrisk.co.uk

8. Conclusions and recommendations

Table 4. Risk ratings following implementation and subsequent maintenance of mitigation measures

Source of Flood Risk	Baseline	After Mitigation
River (fluvial) and Sea (coastal/tidal) flooding	Very Low	N/A
Surface water (pluvial) flooding	Very Low to Low	Very Low
Groundwater flooding	Low	Negligible
Other flood risk factors present	No	N/A

The table below provides a summary of where the responses to key questions are discussed in this report. Providing the recommended mitigation measures are put in place it is likely that flood risk to this Site will be reduced to an acceptable level.

Table 5. Summary of responses to key questions in the report

Key sources of flood risks identified	Surface Water (see Section 4).
Are standard mitigation measures likely to provide protection from flooding to/from the Site?	Yes (see Section 7).
Is any further work recommended?	Yes (See Section 7 and executive summary for full details)

9. Further information

The following table includes a list of additional products by GeoSmart:

Additional GeoSmart Products			
✓	Additional assessment: EnviroSmart Report		Provides a robust desk-based assessment of potential contaminated land issues, taking into account the regulatory perspective. Our EnviroSmart reports are designed to be the most cost effective solution for planning conditions. Each report is individually prepared by a highly experienced consultant conversant with Local Authority requirements. Ideal for pre-planning or for addressing planning conditions for small developments. Can also be used for land transactions. Please contact info@geosmartinfo.co.uk for further information.

10. References and glossary

References

British Geological Survey (BGS) (2022). Geology of Britain Viewer. Accessed from: http://mapapps.bgs.ac.uk/geologyofbritain/home.html on 31/08/22.

Defra/Environment Agency (2005). Flood Risk Assessment Guidance for New Development. *Phase 2 Framework and Guidance for Assessing and Managing Flood Risk for New Development – Fill Documentation and Tools*. R & D Technical Report FD232-/TR2.

Environment Agency [EA] (2021). Flood risk assessments: climate change allowances. Accessed from: https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances on 31/08/22.

Environment Agency [EA] (2022). MagicMap. Accessed from: http://magic.defra.gov.uk/MagicMap.aspx on 31/08/22.

Environment Agency [EA] (2022). Flood map for planning. Accessed from https://flood-map-for-planning.service.gov.uk/ on 31/08/22.

Environment Agency [EA] (2022). Long term flood risk assessment for locations in England. Accessed from https://flood-warning-information.service.gov.uk/long-term-flood-risk on 31/08/22.

GeoSmart (2022). GeoSmart groundwater flood risk (GW5) map (version 2.4).

AECOM (2015). London Boroughs of Croydon, Merton, Sutton and Wandsworth Strategic Flood Risk Assessment. Accessed from: https://www.croydon.gov.uk/sites/default/files/2022-01/strategic-flood-risk-assessment-2021.pdf on 31/08/22.

Ministry of Housing, Communities & Local Government (2014). Planning Practice Guidance (NPPG). Flood Risk and Coastal Change. Accessed from http://planningguidance.planningportal.gov.uk/blog/guidance/flood-risk-and-coastal-change/ on 31/08/22.

Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework (NPPF). Accessed from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf on 31/08/22.

Ordnance Survey Mapping (2022). © Crown copyright. All rights reserved. Licence number AL 100054687. For full terms and conditions visit: www.ordnancesurveyleisure.co.uk

Survey Open Data (2022). Accessed from: http://www.geostore.com/environment-agency/survey.html#/survey/tandc on 21/08/22.

Thames Water (2022). Thames Water Property Searches – Sewer Flooding History Enquiry. SFH/SFH Standard/2022_4710606.

GeoSmart Information

Glossary

General terms

BGS	British Geological Survey
EA	Environment Agency
GeoSmart groundwater flood risk model	GeoSmart's national groundwater flood risk model takes advantage of all the available data and provides a preliminary indication of groundwater flood risk on a 50m grid covering England and Wales. The model indicates the risk of the water table coming within 1 m of the ground surface for an indicative 1 in 200 year return period scenario.
Dry-Island	An area considered at low risk of flooding (e.g. In a Flood Zone 1) that is entirely surrounded by areas at higher risk of flooding (e.g. Flood Zone 2 and 3)
Flood resilience	Flood resilience or wet-proofing accepts that water will enter the building, but through careful design will minimise damage and allow the re-occupancy of the building quickly. Mitigation measures that reduce the damage to a property caused by flooding can include water entry strategies, raising electrical sockets off the floor, hard flooring.
Flood resistance	Flood resistance, or dry-proofing, stops water entering a building. Mitigation measures that prevent or reduce the likelihood of water entering a property can include raising flood levels or installation of sandbags.
Flood Zone 1	This zone has less than a 0.1% annual probability of river flooding
Flood Zone 2	This zone has between 0.1 and 1% annual probability of river flooding and between 0.1% and 0.5 % annual probability sea flooding
Flood Zone 3	This zone has more than a 1% annual probability of river flooding and 0.5% annual probability of sea flooding
Functional Flood Plain	An area of land where water has to flow or be stored in times of flood.
Hydrologic model	A computer model that simulates surface run-off or fluvial flow. The typical accuracy of hydrologic models such as this is ±0.25m for estimating flood levels at particular locations.
OS	Ordnance Survey
Residual Flood Risk	The flood risk remaining after taking mitigating actions.
SFRA	Strategic Flood Risk Assessment. This is a brief flood risk assessment provided by the local council

SuDS	A Sustainable drainage system (SuDS) is designed to replicate, as closely as possible, the natural drainage from the Site (before development) to ensure that the flood risk downstream of the Site does not increase as a result of the land being developed. SuDS also significantly improve the quality of water leaving the Site and can also improve the amenity and biodiversity that a Site has to offer. There are a range of SuDS options available to provide effective surface water management that intercept and store excess run-off. Sites over 1 Ha will usually require a sustainable drainage assessment if planning permission is required. The current proposal is that from April 2014 for more than a single dwelling the drainage system will require approval from the SuDS Approval Board (SABs).

Aquifer Types

Principal aquifer	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.
Secondary A aquifer	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.
Secondary B aquifer	Predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering.
Secondary undifferentiated	Has been assigned in cases where it has not been possible to attribute either category A or B to a rock type due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that has negligible significance for water supply or river base flow.

NPPF (2021) terms

Exception test	Applied once the sequential test has been passed. For the exception test to be passed it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk and a site-specific FRA must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.
Sequential test	Aims to steer new development to areas with the lowest probability of flooding.
Essential infrastructure	Essential infrastructure includes essential transport infrastructure, essential utility infrastructure and wind turbines.

Water compatible	Water compatible land uses include flood control infrastructure, water-based recreation and lifeguard/coastal stations.
Less vulnerable	Less vulnerable land uses include police/ambulance/fire stations which are not required to be operational during flooding and buildings used for shops/financial/professional/other services.
More vulnerable	More vulnerable land uses include hospitals, residential institutions, buildings used for dwelling houses/student halls/drinking establishments/hotels and sites used for holiday or short-let caravans and camping.
Highly vulnerable	Highly vulnerable land uses include police/ambulance/fire stations which are required to be operational during flooding, basement dwellings and caravans/mobile homes/park homes intended for permanent residential use.

Data Sources

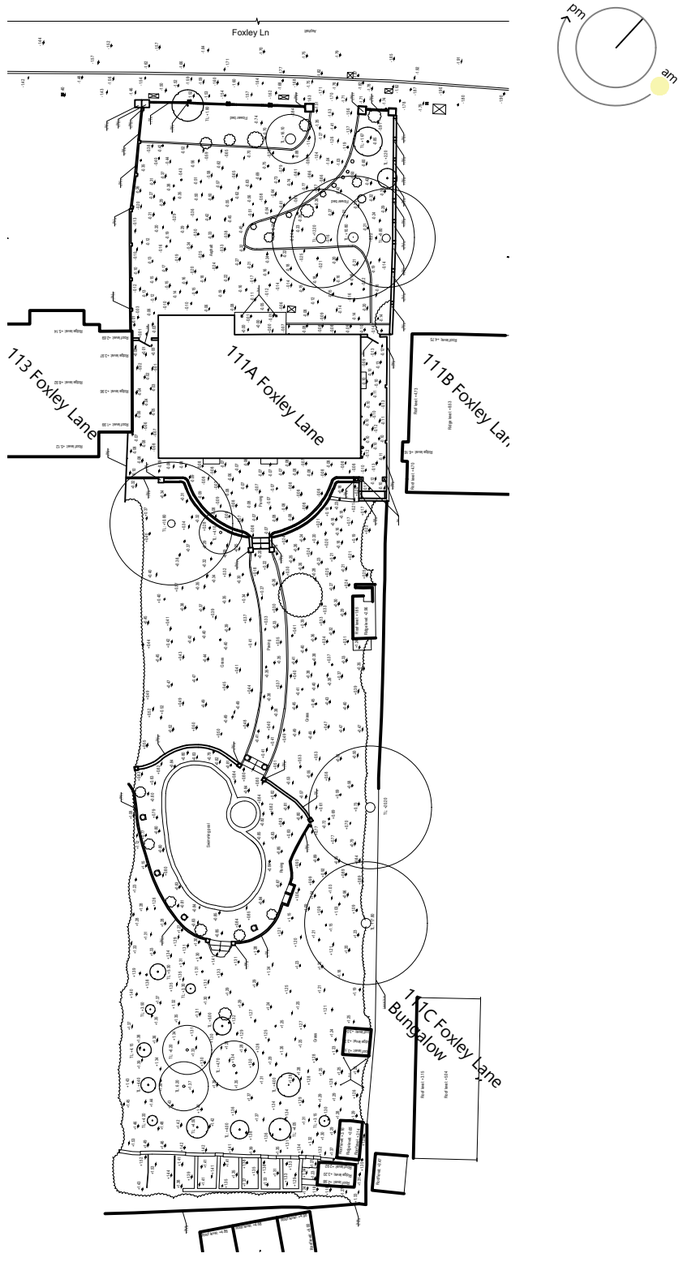
Aerial Photography	Contains Ordnance Survey data © Crown copyright and database right 2022 BlueSky copyright and database rights 2022
Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2022 Ordnance Survey data © Crown copyright and database right 2022
Flood Risk (Flood Zone/RoFRS/Historic Flooding/Pluvial/Surface Water Features/Reservoir/ Flood Alert & Warning)	Environment Agency copyright and database rights 2022 Ordnance Survey data © Crown copyright and database right 2022
Flood Risk (Groundwater)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2022) Contains British Geological Survey materials © NERC 2022 Ordnance Survey data © Crown copyright and database right 2022
Location Plan	Contains Ordnance Survey data © Crown copyright and database right 2022
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2022 Environment Agency copyright and database rights 2022

11. Appendices

GeoSmart Information

Appendix A

Site Plans

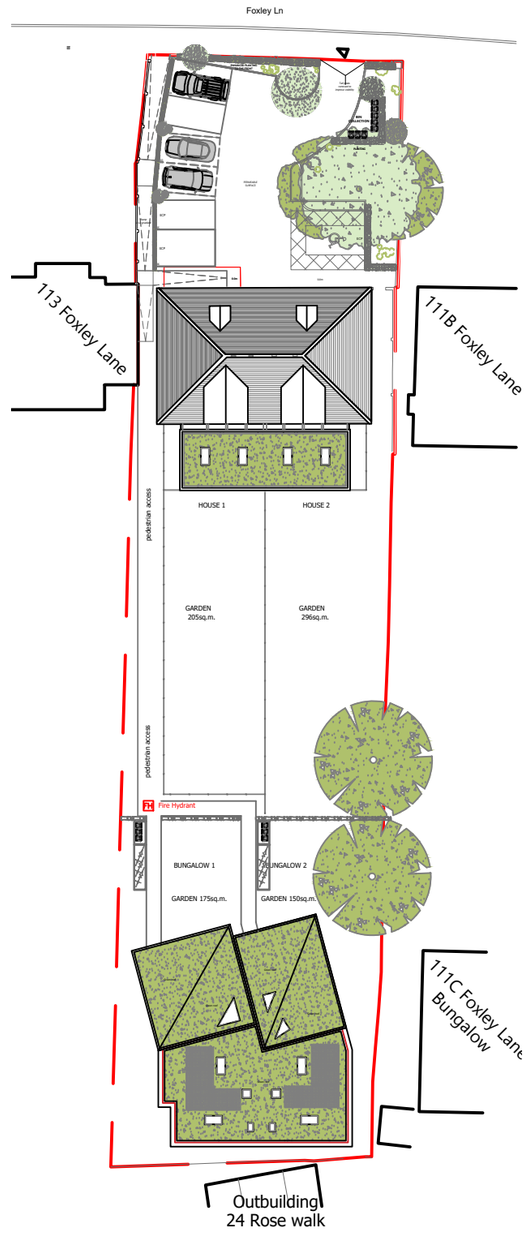


EXISTING **Site Plan**

1:500@A1

0m 2.5m 5m 12.5m 25m

Scale 1:500



PROPOSED **Site Plan**

1:500@A1

barbarella
architecture + design
www.barbarellastudio.com

NOTES:

DO NOT SCALE - VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK. REPORT SUSPECTED DISCREPANCIES OR OMISSIONS.

CLIENT:

SITE ADDRESS:
IIIA FOXLEY LANE
CR8 3HQ

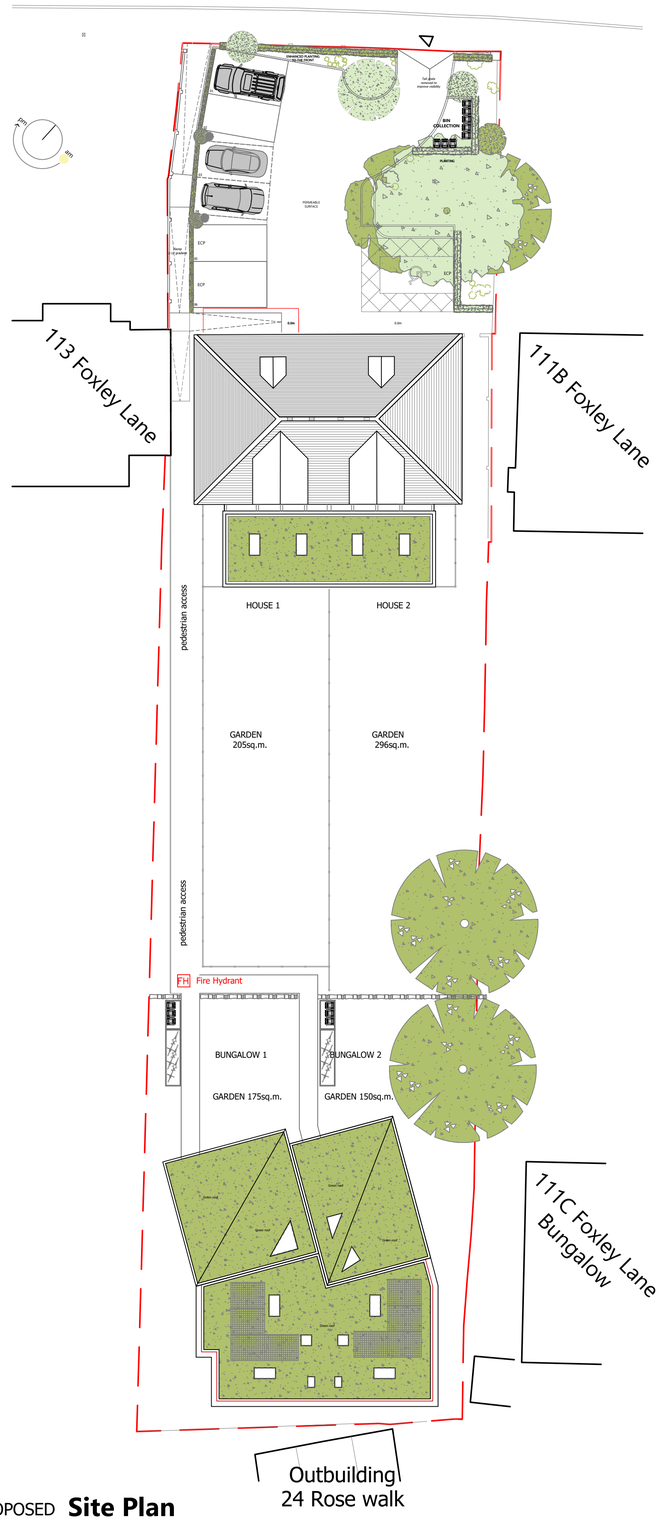
DRAWN BY:

DRAWN DATE:
10/10/2022

SCALE:
1:500 @ A1

NAME:
SITE PLAN_ EXISTING AND PROPOSED

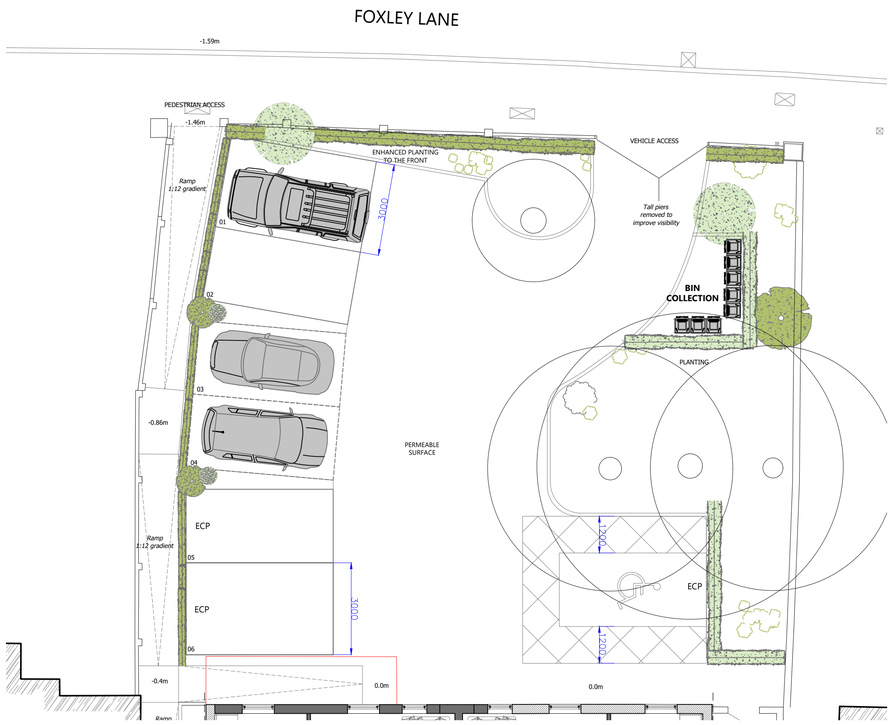
DRAWING NUMBER:
01



PROPOSED **Site Plan**

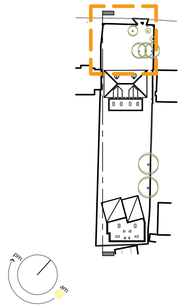
1:200@A1 1:400 @A3

Scale 1:200

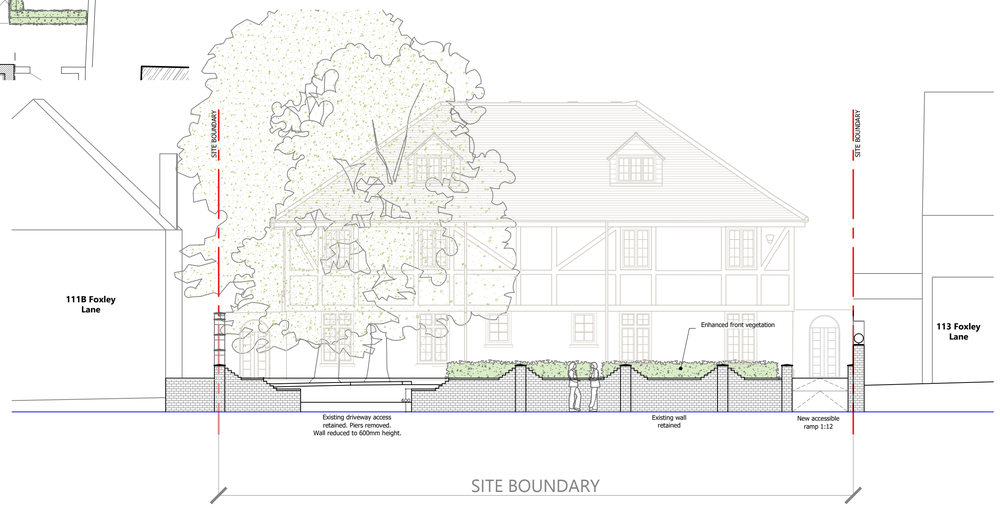


PROPOSED **Front Garden Plan**

1:100@A1 1:200@A3



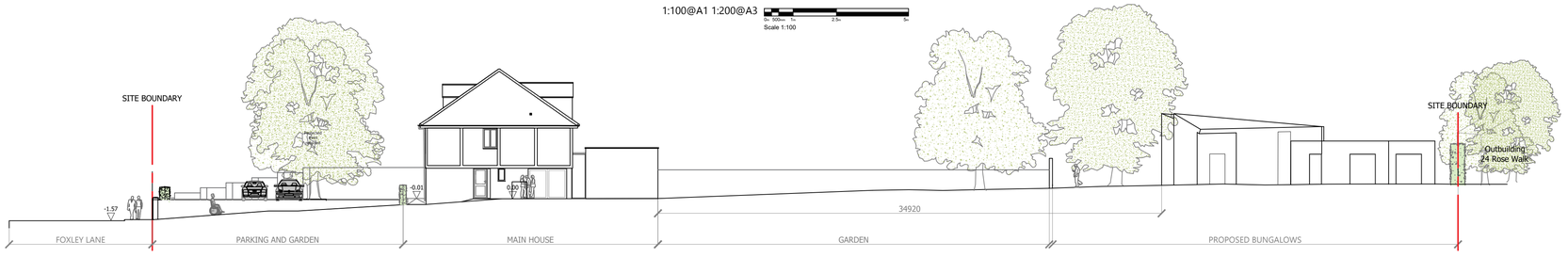
Key Plan



PROPOSED **Front Street Elevation**

1:100@A1 1:200@A3

Scale 1:100



PROPOSED **Site Section**

1:200@A1 1:400@A3

barbarella

architecture + design

www.barbarellastudio.com

NOTES:

DO NOT SCALE - VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK. REPORT SUSPECTED DISCREPANCIES OR OMISSIONS.

CLIENT:

SITE ADDRESS:

IIIA FOXLEY LANE
CR8 3HQ

DRAWN BY:

DRAWN DATE:
10 / 10 / 2022

SCALE:
AS SHOWN

NAME:

PROPOSED SITE PLAN, SECTION & STREET ELEVATIONS

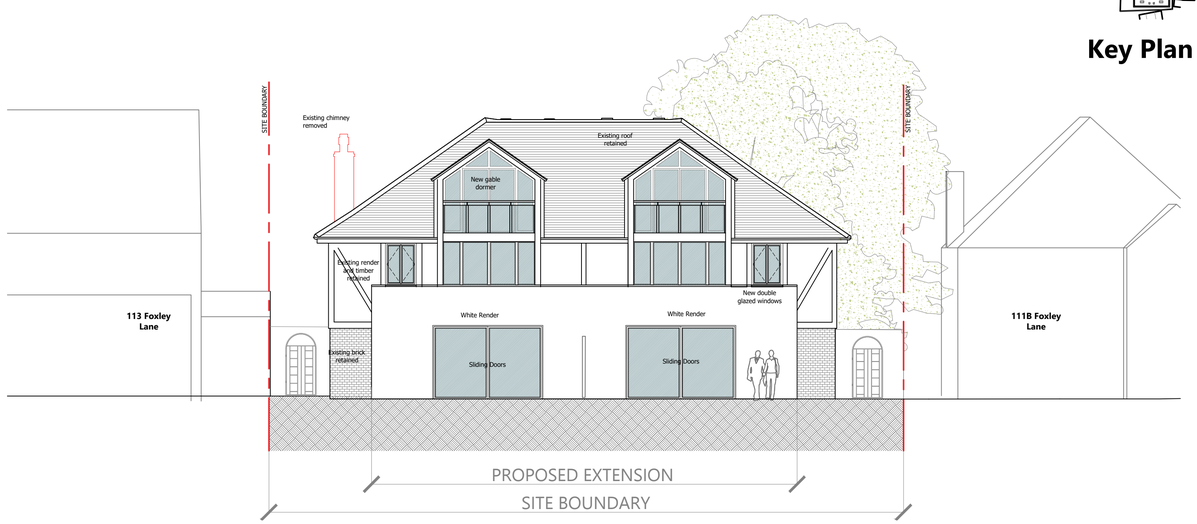
DRAWING NUMBER:

02

PROPOSED **North West Elevation** (Front)

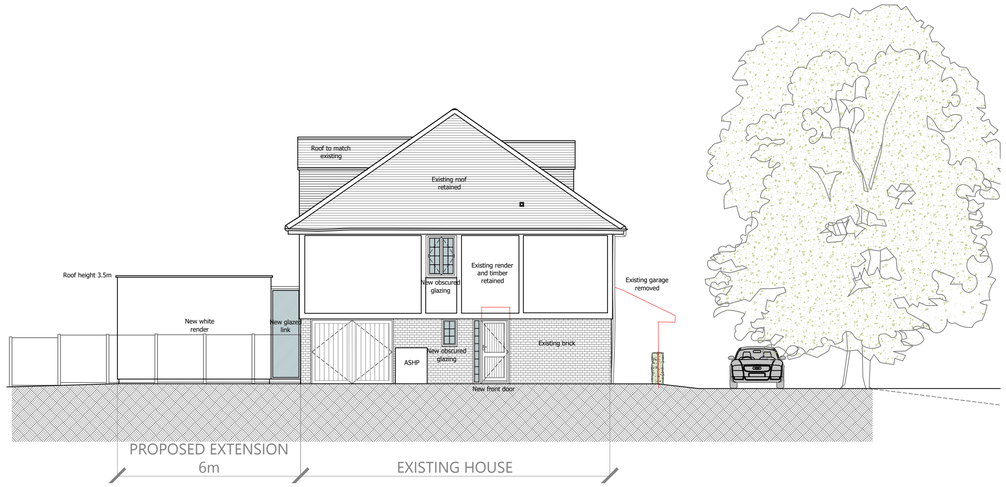
1:100@A1 1:200@A3

Scale 1:100



PROPOSED **South East Elevation** (Rear)

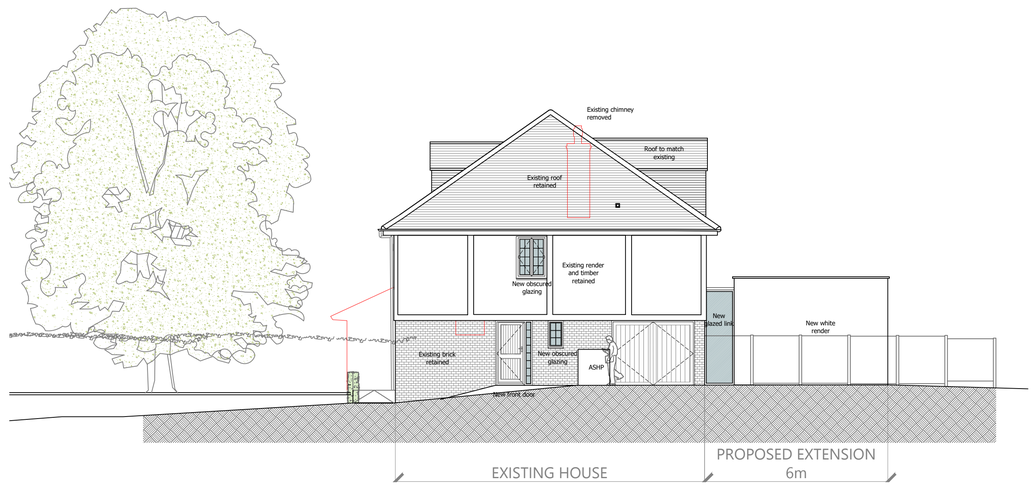
1:100@A1 1:200@A3



PROPOSED **North East Elevation** (Side)

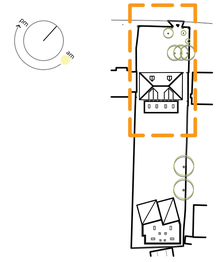
1:100@A1 1:200@A3

Scale 1:100



PROPOSED **South West Elevation** (Side)

1:100@A1 1:200@A3



Key Plan

barbarella
architecture + design
www.barbarellastudio.com

NOTES:
DO NOT SCALE - VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK. REPORT SUSPECTED DISCREPANCIES OR OMISSIONS.

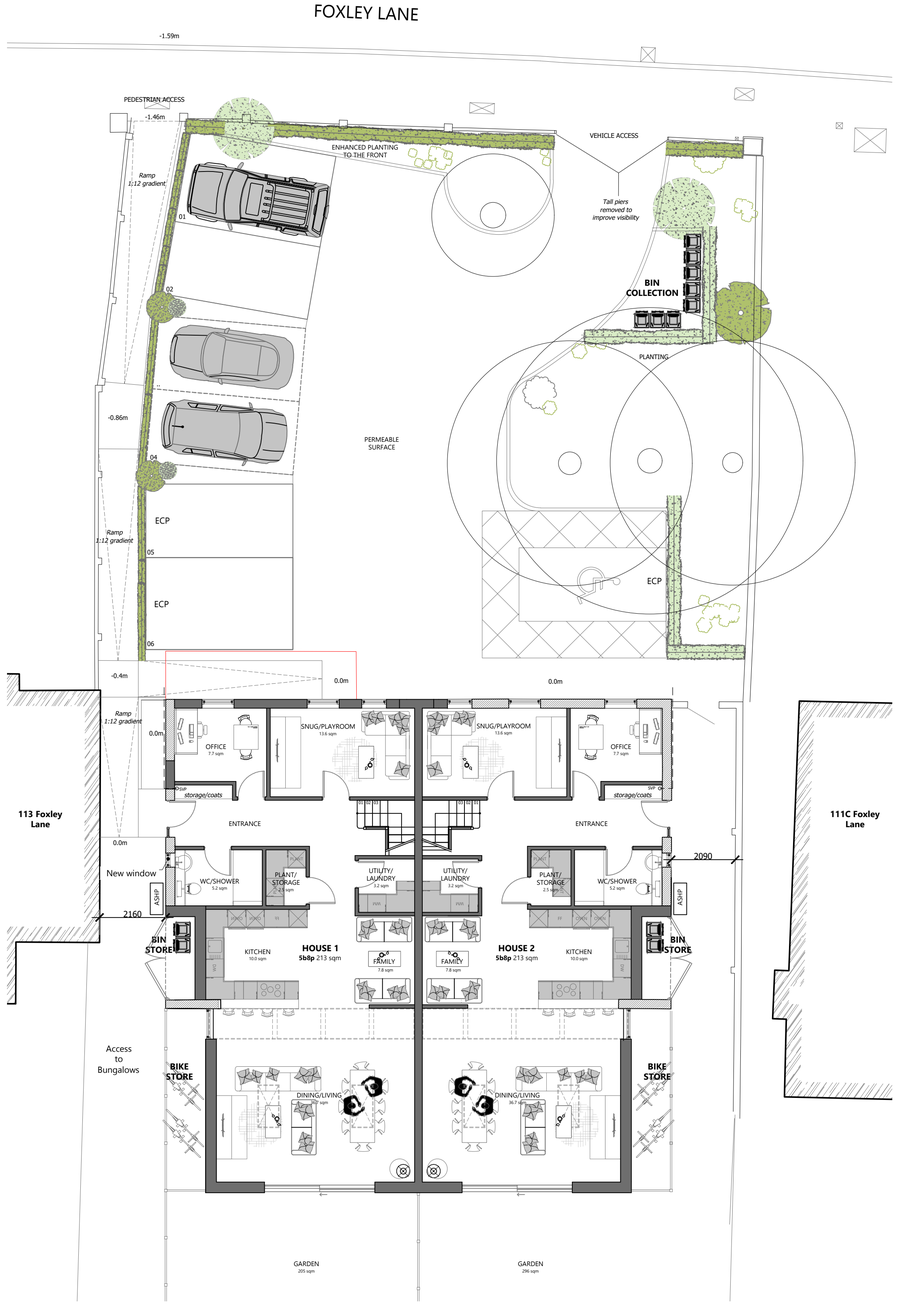
CLIENT:

SITE ADDRESS:
IIIA FOXLEY LANE
CR8 3HQ

DRAWN BY:
DRAWN DATE:
10/10/2022
SCALE:
1:100 @ A1

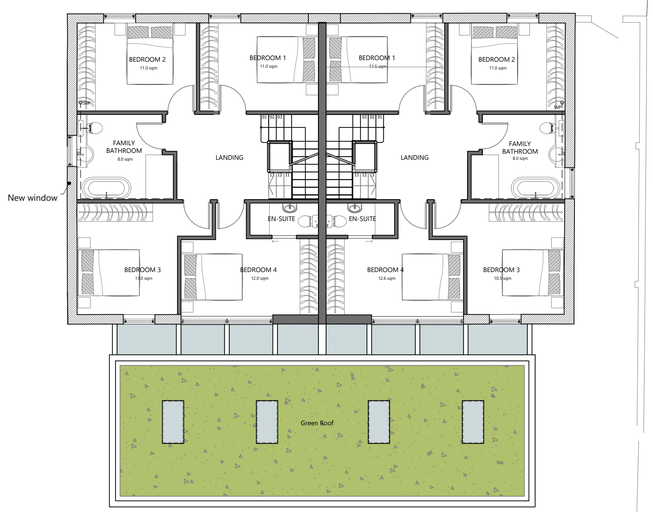
NAME:
MAIN HOUSE _ PROPOSED ELEVATIONS

DRAWING NUMBER:
03



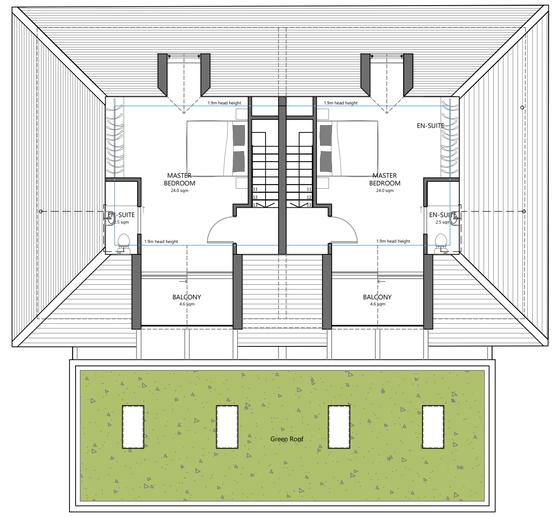
PROPOSED **Ground Floor Plan**

1:100@A1 1:200@A3



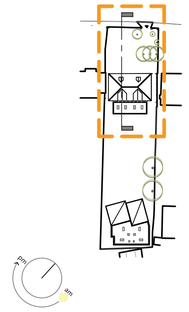
PROPOSED **First Floor Plan**

1:100@A1 1:200@A3



PROPOSED **Second Floor Plan**

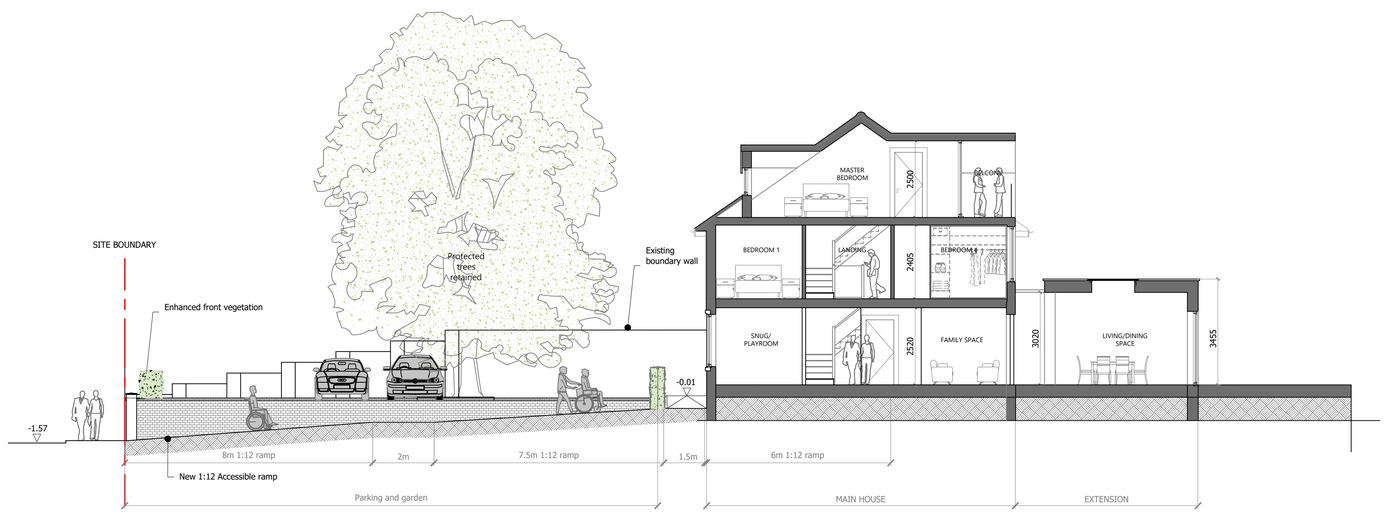
1:100@A1 1:200@A3



Key Plan

Key

- PROPOSED WALLS
- EXISTING WALLS
- REMOVED
- DRAINAGE
- VEGITATION
- PROPOSED GLASS



PROPOSED **Site Section**

1:100@A1 1:200@A3

barbarella

architecture + design

www.barbarellastudio.com

NOTES:

DO NOT SCALE - VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK. REPORT SUSPECTED DISCREPANCIES OR OMISSIONS.

CLIENT:

SITE ADDRESS:

111A FOXLEY LANE
CR8 3HQ

DRAWN BY:

DRAWN DATE:
10/10/2022

SCALE:
1:100 @ A1

NAME:

MAIN HOUSE _ PROPOSED PLANS

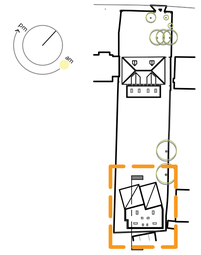
DRAWING NUMBER:

04

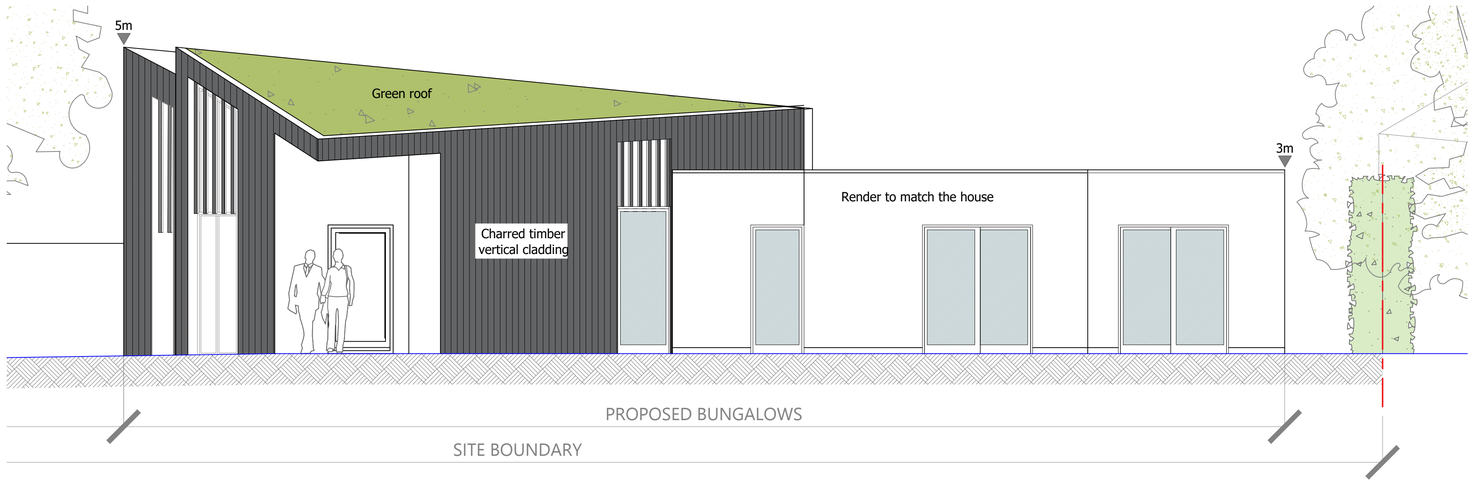
PROPOSED **Ground Floor Plan**

1:100@A1 1:200@A3

Scale 1:100



Key Plan



PROPOSED **South East Elevation** (Side)

1:100@A1 1:200@A3

PROPOSED **Section AA**

1:50@A1 1:100@A3

barbarella
architecture + design
www.barbarellastudio.com

NOTES:
DO NOT SCALE - VERIFY ALL DIMENSIONS BEFORE COMMENCING WORK. REPORT SUSPECTED DISCREPANCIES OR OMISSIONS.

CLIENT:

SITE ADDRESS:
111A FOXLEY LANE
CR8 3HQ

DRAWN BY:

DRAWN DATE:
10/10/2022
SCALE:
AS SHOWN

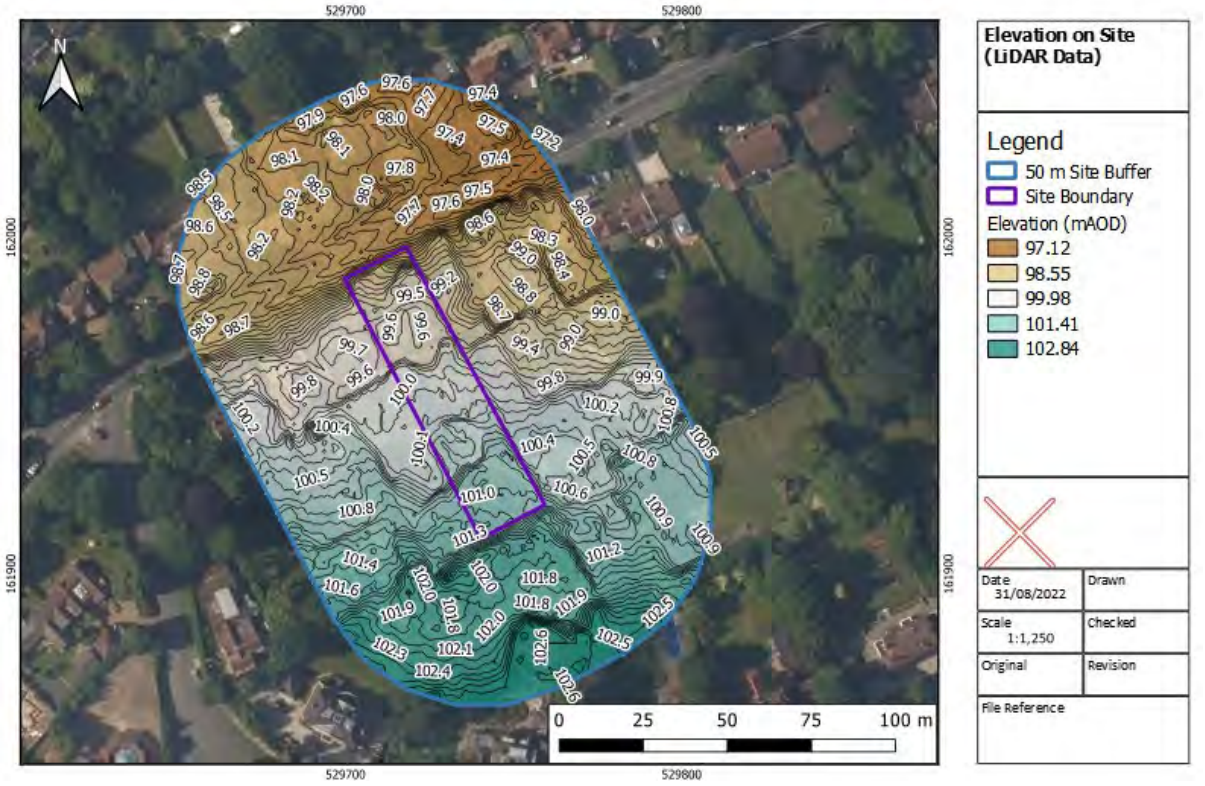
NAME:
PROPOSED BUNGALOWS PLAN, ELEVATIONS AND SECTION

DRAWING NUMBER:
05

GeoSmart Information

Appendix B

Environment Agency LiDAR ground elevation data



Disclaimer

This report has been prepared by GeoSmart in its professional capacity as soil, groundwater, flood risk and drainage specialists, with reasonable skill, care and diligence within the agreed scope and terms of contract and taking account of the manpower and resources devoted to it by agreement with its client and is provided by GeoSmart solely for the internal use of its client.

The advice and opinions in this report should be read and relied on only in the context of the report as a whole, taking account of the terms of reference agreed with the client. The findings are based on the information made available to GeoSmart at the date of the report (and will have been assumed to be correct) and on current UK standards, codes, technology and practices as at that time. They do not purport to include any manner of legal advice or opinion. New information or changes in conditions and regulatory requirements may occur in future, which will change the conclusions presented here.

This report is confidential to the client. The client may submit the report to regulatory bodies, where appropriate. Should the client wish to release this report to any other third party for that party's reliance, GeoSmart may, by prior written agreement, agree to such release, provided that it is acknowledged that GeoSmart accepts no responsibility of any nature to any third party to whom this report or any part thereof is made known. GeoSmart accepts no responsibility for any loss or damage incurred as a result, and the third party does not acquire any rights whatsoever, contractual or otherwise, against GeoSmart except as expressly agreed with GeoSmart in writing.

For full T&Cs see http://geosmartinfo.co.uk/terms-conditions

Important consumer protection information

This search has been produced by GeoSmart Information Limited, Suite 9-11, 1st Floor, Old Bank Buildings, Bellstone, Shrewsbury, SY1 1HU.

Tel: 01743 298 100

Email: info@geosmartinfo.co.uk

GeoSmart Information Limited is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom.
- sets out minimum standards which firms compiling and selling search reports have to meet.
- promotes the best practice and quality standards within the industry for the benefit of consumers and property professionals.
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.
- By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

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

GeoSmart Information

Complaints

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

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

TPOs contact details:

The Property Ombudsman scheme

Milford House

43-55 Milford Street

Salisbury

Wiltshire SP1 2BP

Tel: 01722 333306

Fax: 01722 332296

Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk.

Please ask your search provider if you would like a copy of the search code

Complaints procedure

GeoSmart Information Limited is registered with the Property Codes Compliance Board as a subscriber to the Search Code. A key commitment under the Code is that firms will handle any complaints both speedily and fairly. If you want to make a complaint, we will:

- Acknowledge it within 5 working days of receipt.
- Normally deal with it fully and provide a final response, in writing, within 20 working days of receipt.
- Keep you informed by letter, telephone or e-mail, as you prefer, if we need more time.
- Provide a final response, in writing, at the latest within 40 working days of receipt.
- Liaise, at your request, with anyone acting formally on your behalf.

If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk.

We will co-operate fully with the Ombudsman during an investigation and comply with his final decision. Complaints should be sent to:

Martin Lucass

Commercial Director

GeoSmart Information Limited

Suite 9-11, 1st Floor,

Old Bank Buildings,

Bellstone, Shrewsbury, SY1 1HU

Tel: 01743 298 100

martinlucass@geosmartinfo.co.uk

12. Terms and conditions, CDM regulations and data limitations

Terms and conditions can be found on our website:

http://geosmartinfo.co.uk/terms-conditions/

CDM regulations can be found on our website:

http://geosmartinfo.co.uk/knowledge-hub/cdm-2015/

Data use and limitations can be found on our website:

http://geosmartinfo.co.uk/data-limitations/