GeoSmart Information

FloodSmart Plus

Flood Risk Assessment

Site Address

Corner of Fore Street and High Road
Pinner
Harrow
Greater London
HA5 2ET

Grid Reference

510324, 188441

Report Prepared for

Watervale Property Ltd
41 The Broadway
Joel Street
Northwood
Greater London
HA6 1NZ

Date

2023-01-18

Report Status

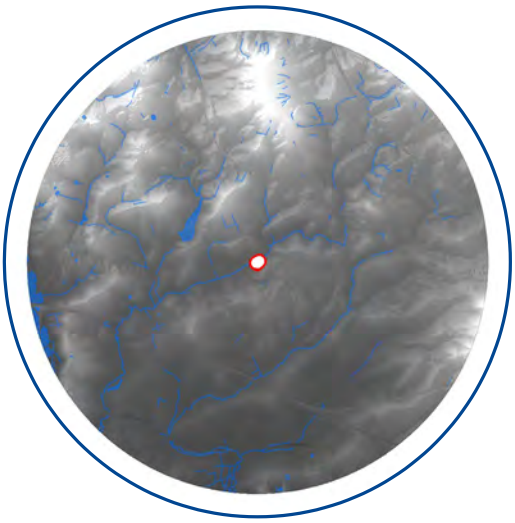
FINAL

Site Area

0.39 ha

Report Reference

77698R3



RISK - Very Low to High

The Site is located within fluvial Flood Zones 1- 3 (low - high probability). According to EA mapping, the risk of flooding from rivers and the sea is classed as Medium. The Site is at a Very Low - High risk of pluvial flooding and a Low risk of groundwater flooding. The Site is also at risk from Reservoir flooding; however, the associated level of risk could not be determined.

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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) flooding	Medium	Low
Sea (coastal/tidal) flooding	Very Low	N/A
Surface water (pluvial) flooding	Very Low – High	Very Low – Low
Groundwater flooding	Low	Negligible
Other flood risk factors present	Yes	Yes
Is any other further work recommended?	Yes	Yes (see below)

N/A = mitigation not required

Summary of existing and proposed development

The Site is located in Pinner, Greater London within a setting of residential land use. The site is a vacant site situated on the corner of Fore Street and High Road, Eastcote. It lies behind a small area of public open space and is bound by the river Pinn to the Northwest and the petrol station at Eastcote to the North East. The site perimeter contains multiple TPO trees and vegetation which screen the site from public view. The site is private land and has never been in public use, Ordnance survey maps show there was once a timber structure on the site which sold fruit and vegetables. The site area is predominantly residential in character, with the exception of a small local shopping parade located approximately 150m North East along the high road, a petrol station and the Black Horse Public House (Grade II listed). Development proposals comprise construction of an early year's nursery with a capacity of

80 children plus staff, including the formation of new access and landscaping within the Site. Within the development plans, the nursery building is due to be constructed on top of a raised development platform, 300 mm in height with finished floor levels an additional 300 mm above this (44.0 mAOD).

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 fluvial Flood Zones 1 - 3 (Low - High Probability).
- The Site is located immediately adjacent to a watercourse. The Site does not benefit from the presence of flood defences, although the capacity of the river channel does offer some protection to the Site.
- According to the EA's Risk of Flooding from Rivers and Sea (RoFRS) map, which considers the type, condition and crest height of any flood defences, the Site has a Very Low - Medium risk of flooding from Rivers and the Sea.
- The Site could potentially be at risk from flooding due to blockage or failure of a culvert/bridge located on the watercourse adjacent to the Site.
- Modelled flood data obtained from the EA have been analysed in line with the most up to date guidance on climate change (EA, 2022), to confirm a maximum "design" flood level at the Site.

  During a 1 in 100 year plus 21% climate change allowance event the flood level in the area proposed for development could be up to 43.22 mAOD.

  During this event, flood depths in the area proposed for development (pre-development) could be up to 0.52 m. Flood mitigation measures are included in the next section.

  Emergency evacuation routes are available to the east. In the event of a flood, safe refuge cannot be taken on-Site.
- 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 High.
- Central areas of the Site are at risk of pluvial flooding of up to 0.6 m, during a high probability (1 in 30 year) event. Larger areas within the central part of the Site and an isolated area on the north-western boundary are at risk of pluvial flooding of up to 0.6 m, during a medium probability (1 in 100 year) event. Excluding the north-eastern part of the Site, the entire Site is at risk of pluvial flooding, during a low probability (1 in 1000 year) event.
- Groundwater Flood Risk screening data indicate that there is a Negligible risk of groundwater flooding at the surface in the vicinity of the Site during a 1 in 100 year event. However, site-specific assessment indicates that the Site is at Low risk of groundwater

flooding due to the possible presence of a shallow water table in proximity to the Site and the possibility for groundwater levels to be in continuity with the river system adjacent to the Site.

- 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 at risk of reservoir flooding.
    - Ordnance Survey (OS) data indicate that there are no canals near to the Site.
    - A sewer flooding history search was undertaken using the Strategic Flood Risk Assessment (Metis Consultants, 2018). This confirms no recorded incidences of sewer flooding at or within the vicinity of the Site

A flood risk has been identified from reservoirs, although the level of risk could not be determined.

- The risk to the development has been assessed over its expected 75 year lifetime, including appropriate allowances for the impacts of climate change. More extreme weather events could increase the risk to the Site from increases in river flooding and or increased potential for surface water / groundwater flooding. Site specific assessment indicates risk to the Site will not increase significantly and appropriate mitigation measures are proposed.

In accordance with paragraphs 161, 168 and footnote 56 of the NPPF (2021), as the development proposals are comprised of a new building within Flood Zone 3 and the Site has not been allocated within the Councils Local Plan, the Sequential Test has been undertaken separately (ref: 77698.03R1).

Recommendations

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 fluvial sources, where flood levels could be up to 43.22 m AOD in the area proposed for development, Finished Floor Levels (FFL) of the proposed development should be set to at least 43.52 mAOD[1]. Development proposals include the raising of ground levels in the area of the proposed nursery building by 300 mm and finished floor levels of the aforementioned building by a further 300 mm, resulting in a finished floor level of 44.0 mAOD which is 0.48 m above the minimum recommended floor level. Standard flood resilient design measures should also be incorporated.
- There is also a risk of flooding from surface water (pluvial) sources, where flood depths in the area proposed for development could be up to 0.6 m in depth during a 1 in 100 year

[1] 0.3 m above the 1 in 100 year plus climate change flood level of 43.22 mAOD.

event. Surface water flood risk will be sufficiently mitigated by the aforementioned raising of the proposed building and implementation of the recommended Sustainable Drainage Scheme to accompany this report (ref: 77698.01R1). Ground levels should be designed to channel any overland flows from off-Site (to the north) away from the development and associated Site drainage systems.

- There is a risk of flooding from groundwater sources at the surface, however the aforementioned mitigation measures will be sufficient to negate groundwater flood risk., Standard flood resilient design and non-return valves on the sewer inlet, French drains and/or pumping systems may also be considered.
- Flood waters will be displaced due to the proposed development and as a result the provision of compensatory storage is required. Compensatory storage could be provided by lowering ground levels in areas of the Site which are outside of the 1 in 100 year + 21% fluvial flood extent, adopting a level for level and volume for volume approach. However, due to the limited extent of the Site being suitable for compensatory storage, alternate strategies to mitigate floodwater displacement (e.g., voids and stilts underneath the proposed development) should be discussed with Hillingdon Borough Council.
- A Flood Warning and Evacuation Plan (FWEP) is recommended to ensure persons using the Site can evacuate safely on receipt of a Flood Warning.
    - Occupants of the Site should be signed up to receive EA Flood Alerts and Flood Warnings.

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 West London Strategic Flood Risk Assessment for the boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow (Metis Consultants, 2018) 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 has been undertaken to ensure effective management of surface water runoff generated by the Site.

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	Local Policy & Guidance Documents*	Environment Agency (Appendix B)	Utility provider (Appendix C)	OS Data
Historical	X	X	X		
River (fluvial) / Sea (tidal/coastal)	X	X	X		

Source of flooding	Datasets consulted				
	Commercial Flood Maps	Local Policy & Guidance Documents*	Environment Agency (Appendix B)	Utility provider (Appendix C)	OS Data
Surface water (pluvial)	X	X	X		
Groundwater	X	X			
Sewer		X		X	
Culvert/bridges		X			X
Reservoir		X	X		

*Local guidance and policy, referenced in Section 6, has been consulted to determine local flood conditions and requirements for flood mitigation measures.

3. Site analysis

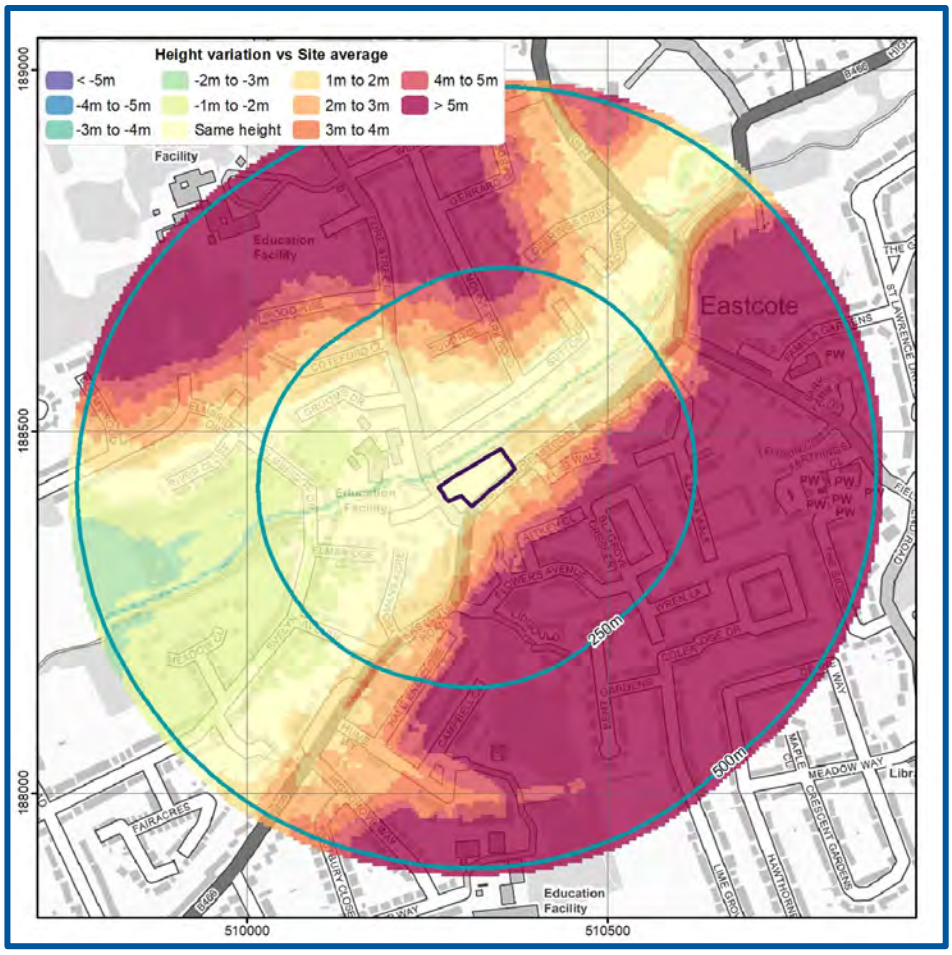
Site information

The Site is located in Pinner, Greater London within a setting of residential land use at National Grid Reference TQ 10324 88441. Site plans and drawings are provided in Appendix A.

According to OS data, using a 500 m buffer around the Site, the area is in the base of a valley (Figure 1). It is noted that to the north land rises to c. 51.4 m above Ordnance Datum (AOD). To the west land falls to c. 41.4 mAOD; to the east land rises to c. 53.7 mAOD and to the south the land rises to c. 51.0 mAOD.

The general ground levels on the Site are between 42.7 and 43.8 mAOD with the Site topography falling gradually in a northwesterly 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 D).

Figure 1. Site Location and Relative Elevations (GeoSmart, 2023).



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Development

The site is a vacant site situated on the corner of Fore Street and High Road, Eastcote. It lies behind a small area of public open space and is bound by the river Pinn to the Northwest and the petrol station at Eastcote to the North East. The site perimeter contains multiple TPO trees and vegetation which screen the site from public view. The site is private land and has never been in public use, Ordnance survey maps show there was once a timber structure on the site which sold fruit and vegetables. The site area is predominantly residential in character, with the exception of a small local shopping parade located approximately 150m North East along the high road, a petrol station and the Black Horse Public House (Grade II listed).

Development proposals comprise the construction of an early year's nursery (with the capacity to accommodate 80 children plus staff), including the formation of new access and landscaping within the Site. The nursery building is proposed to be constructed on top of a raised development platform, 300 mm in height, with finished floor levels an additional 300 mm above this set to 44.0 mAOD. 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 and will result in the change of use, nature or times of occupation. According to Annex 3 of the NPPG (2022), the vulnerability classification of the existing development is Water Compatible whereas proposed development is More Vulnerable. The estimated lifespan of the development is 75 years.

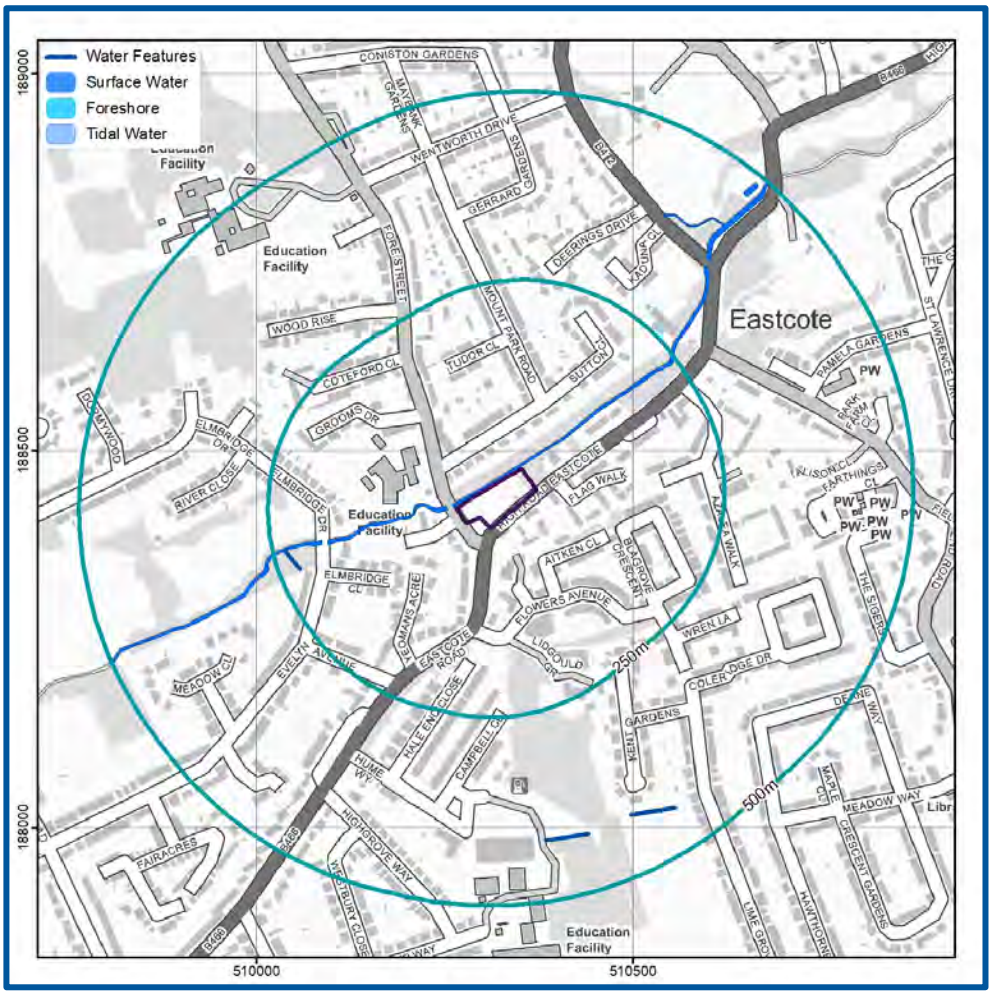
Proximity to relevant infrastructure

Fore Street Bridge is located adjacent to the northwestern Site boundary.

Hydrological features

According to Ordnance Survey (OS) mapping included in the following figure, a single surface water feature is located within 500 m of the Site. The River Pinn is located immediately adjacent to the northern Site boundary, at a lower elevation than the Site.

Figure 2. Surface water features (EA, 2023)



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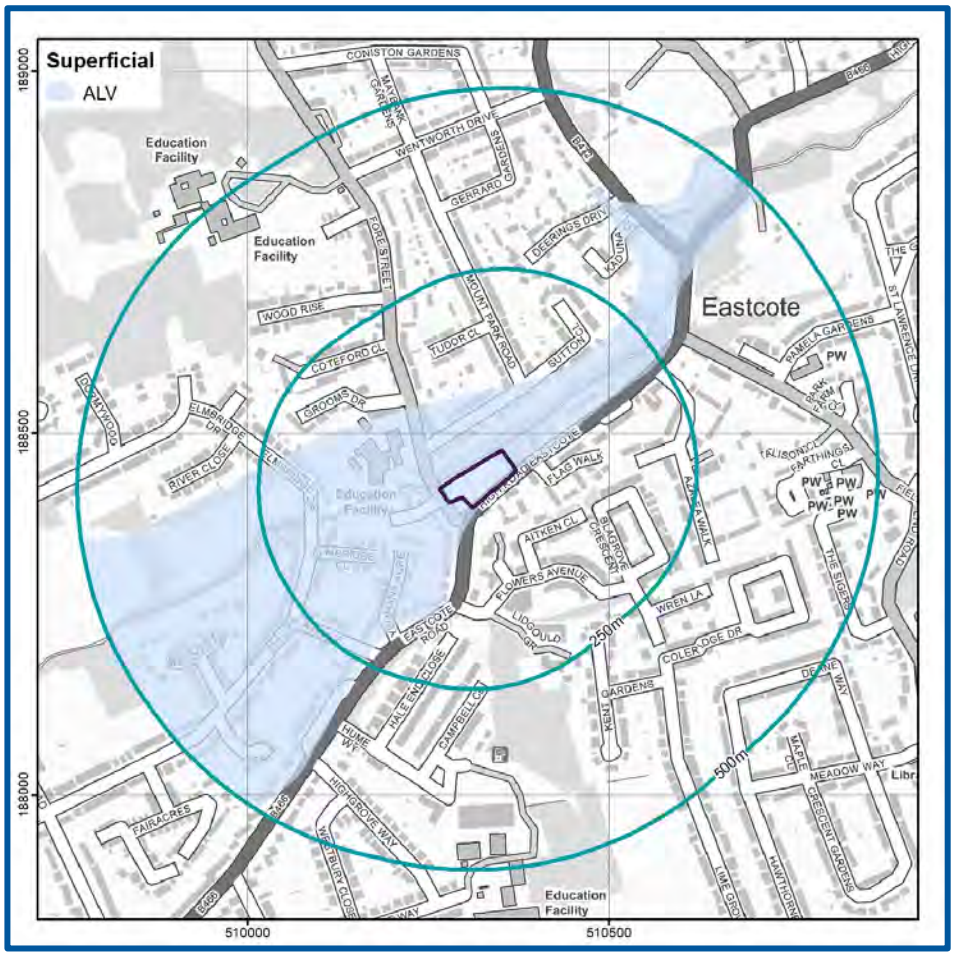
Hydrogeological features

British Geological Survey (BGS) mapping indicates that the underlying superficial geology (Figure 3) consists of Alluvium (ALV) (BGS, 2023) which is classified as a Secondary (A) Aquifer (EA, 2023).

Figure 3. Superficial Geology (BGS, 2023)



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BGS mapping indicates that the underlying bedrock geology (Figure 4) consists of the Lambeth Group (LMBE) (BGS, 2023) which is classified as a Secondary (A) Aquifer (EA, 2023).

Figure 4. Bedrock Geology (BGS, 2023)

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The Site lies within a total catchment groundwater Source Protection Zone (SPZ III) (EA, 2023).

A review of the BGS borehole database (BGS, 2023) indicates that the nearest and most relevant borehole (ref: TQ18NW94) was drilled c. 140 m to the north of the Site boundary at an elevation of 42 mAOD. The corresponding borehole log indicates a 1.6 m thickness of silty gravel overlying 4.9 m of Lambeth Member Clay. Groundwater levels were recorded at 1.6 m below ground level on 07/01/1988 (it is acknowledged that water levels will be subject to seasonal variations).

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

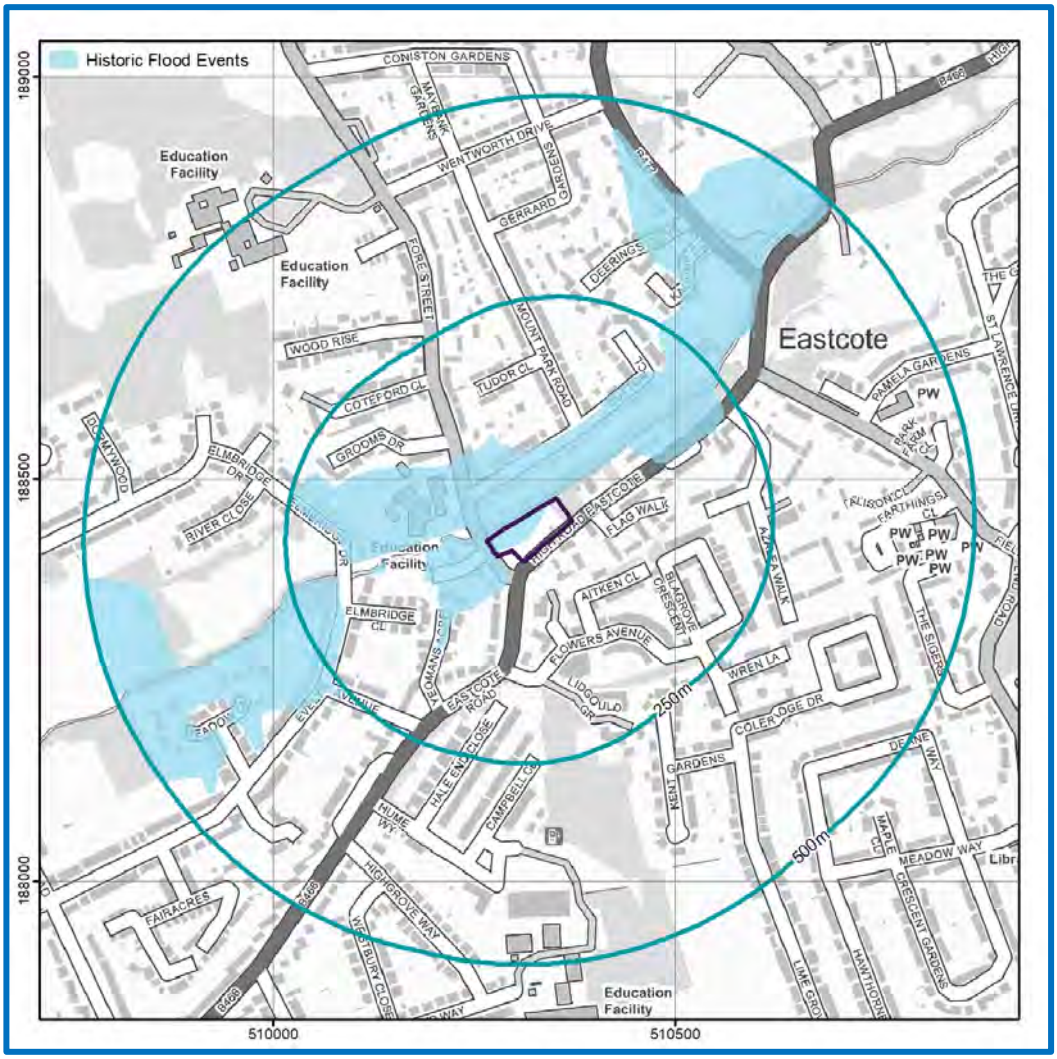
Groundwater levels may rise in the bedrock and superficial aquifers in response to high river events, subject to hydraulic continuity between the driving water level, the groundwater system and the Site. Groundwater levels may also rise in the bedrock and superficial aquifers in response to prolonged 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) and the SFRA (Metis, 2018), two recorded historical river flood events have affected the Site due to the capacity of the channel being exceeded and the absence of flood defences. The flood events occurred on 06/09/1977 and 06/05/1988 (EA, 2023). An additional flooding event to affect the Site is also documented within a Flood Investigation Report, where a flood event occurred in 2014 (Hillingdon Borough Council, 2014).

Figure 5. EA historical flood map (EA, 2023)



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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.

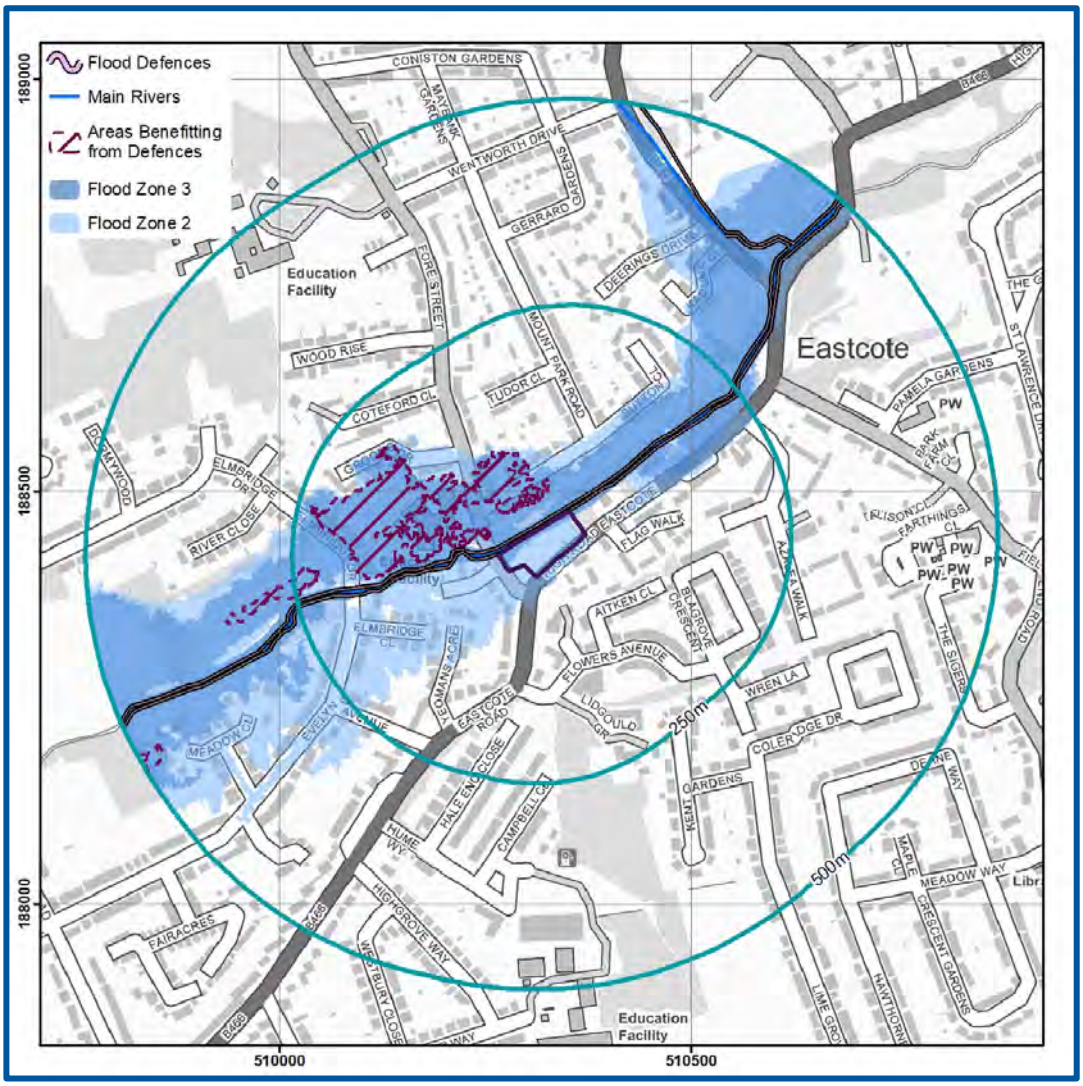
Rivers (fluvial) / Sea (coastal/tidal) flooding

The predominant risk at the Site is from flooding from rivers, termed as fluvial flooding. The Site is located in an inland location and the risk of flooding from coastal and tidal processes are therefore considered to be Negligible.

River (fluvial) flooding occurs during times of heavy rainfall or snow melt when watercourses' capacity can be exceeded, over topping the banks and flood defences.

According to the EA's Flood Map for Planning Purposes (Figure 6), the Site is located predominantly within fluvial Flood Zone 2, with the north-western edge of the Site located in Flood Zone 3. As such, the Site is classified as having a High probability of fluvial flooding from the River Pinn. The nearest land outside Flood Zones 2 and 3 is located directly to the south-east of the Site.

Figure 6. EA Flood Map for Planning Purposes (EA, 2023)



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Guidance

As defined in the NPPF (2021):

Ignoring the presence of any defences, land located in a Flood Zone 2 is considered to have a Medium probability of flooding, with between a 1 in 100 and 1 in 1000 annual probability of fluvial flooding or between a 1 in 200 and 1 in 1000 annual probability of coastal flooding in any one year.

Land located in a Flood Zone 3 is considered to have High probability of flooding with a 1 in 100 year or greater annual probability of fluvial flooding or a 1 in 200 or greater annual probability of coastal flooding in any one year.

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

Flood defences

Guidance
Sites that are located close to flood defences are likely to be zones where rapid inundation will occur in the event of the flood defences being overtopped or breached. A Site located close to flood defences (within 250 m) may require a more detailed FRA subject to local topography.

- The Site is in an area which does not benefit from flood defences.
- There are no formal flood defences within 250 m of the Site.
- There are no proposed flood defences within 250 m of the Site.

Model data

As the Site is located within the EA's fluvial floodplain, modelled flood elevation data have been obtained from the EA. These data are more up to date than that which is included in the London Borough of Hillingdon SFRA (Metis Consultants, 2018) and have been used to assess flood risk and to provide recommendations for flood mitigation for the proposed development. Defended modelled flood data from the Ruislip - Park Wood and Pinn Meadows FAS Modelling Report (Jacobs, 2021) has been taken from the nearest 2D node point within the River Pinn to the Site and has been used to assess flood risk[2]. The data are provided in the table below and also within Appendix B.

Table 2. EA modelled flood level data

Ground levels in area proposed for development (mAOD)	Modelled Flood Levels (mAOD)			
	1 in 20 year	1 in 100 year	1 in 100 year plus 25% CC	1 in 1000 year
42.7 – 43.8	42.81	43.12	43.24	43.49
Flood depths (m)	0 - 0.11	0 – 0.42	0 – 0.54	0 – 0.79

[2] The accuracy of the modelled flood levels are not known. These are dependent on the accuracy of input datasets such as LiDAR data, used to model the impacts of flooding within the 2D domain. Confirmation of the accuracy of the modelled flood data can be obtained separately from the Environment Agency.

Climate change factors

The EA's *Flood risk assessments: climate change allowances* guidance (Published 19 February 2016 and updated May 2022) has been used to inform a suitable increase in peak river flows for the proposed development.

The updated guidance confirms 'More Vulnerable' developments are required to undertake a Basic assessment approach. As the Site is located within the Thames River Basin and the proposed development is classed as More Vulnerable, where the proposed lifespan is approximately 75 years, the Central (21%) allowance has been used to determine a suitable climate change factor to apply to river data.

In the Thames Region, the 1 in 1000 year event flow is approximately 60% greater than the 1 in 100 year flow, according to the Flood Studies Report (FSR, 1975), therefore the following flood levels apply:

Table 3. Flood levels in Area of Proposed Development plus climate change allowances

Ground levels in area proposed for development (mAOD)	Modelled Flood Levels (mAOD)		
	1 in 100 year	1 in 100 year plus 21% CC	1 in 1000 year
42.7 – 43.8	43.12	43.22	43.49
Flood depths (m)	0 – 0.42	0 – 0.52	0 – 0.79

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 - Medium. The majority of the Site has a medium flooding risk from the adjacent River Pin.

Figure 7. Risk of Flooding from Rivers and Sea map (EA, 2023)

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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, the Site is at a variable risk of pluvial flooding ranging from Very Low to High.

Central areas of the Site are at risk of pluvial flooding, with flood depths between 0 m – 0.6 m during a high probability / risk (1 in 30 year) event. Larger areas of the central part of the Site and an isolated area on the north-western boundary are at risk of pluvial flooding, with flood depths between 0 m and 0.9 m during a medium probability / risk (1 in 100 year) event. Excluding the northeast of the Site, the entire Site is at risk of pluvial flooding, with flood

depths of up to 0.6 m across most of the Site and depths of >1.2 m at the north-western boundary during a low probability / risk (1 in 1000 year) event.

Guidance

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

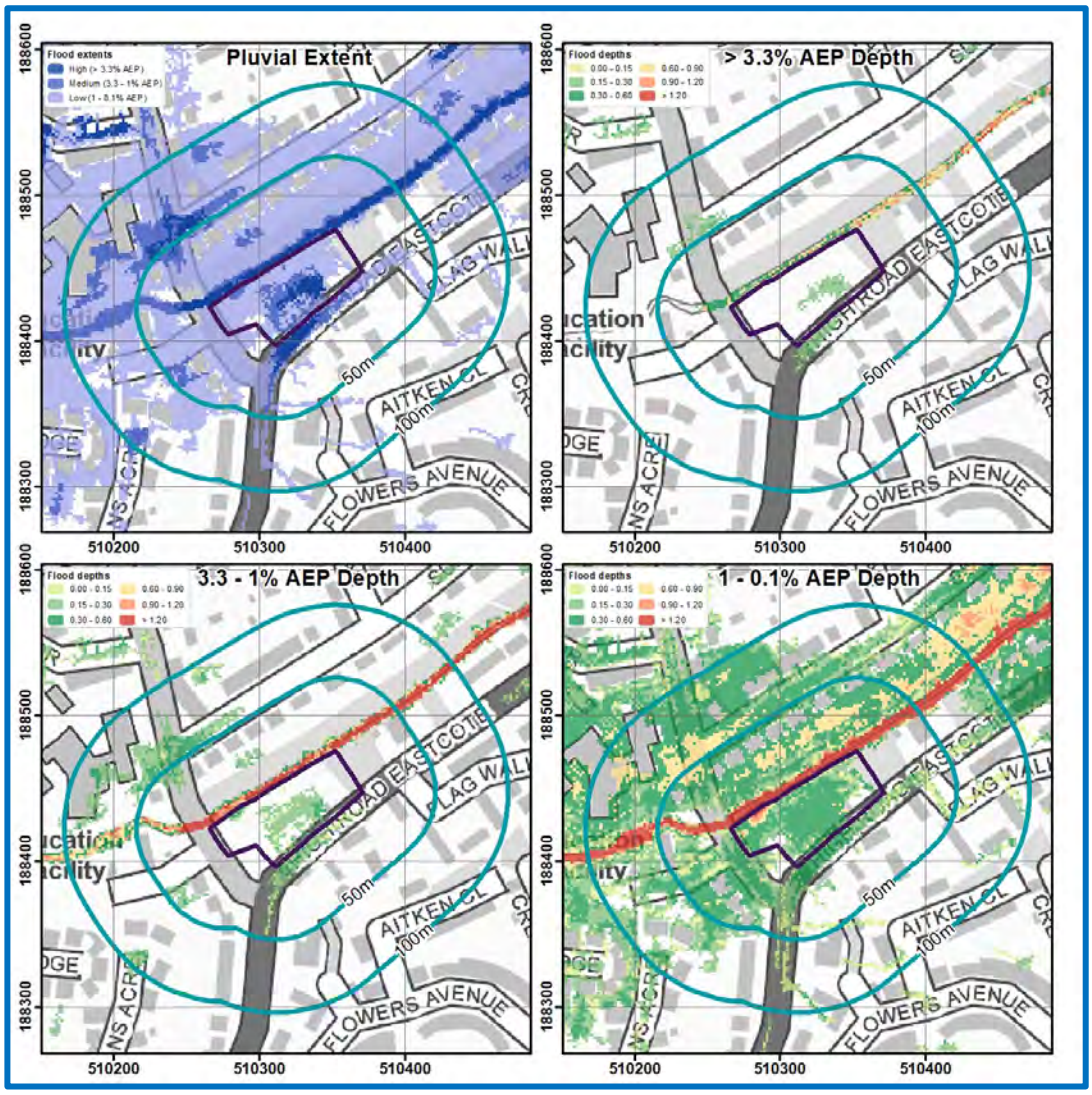
- Very Low risk (probability) - chance of flooding of less than 1 in 1000 (0.1%).
- Low risk (probability) - chance of flooding of between a 1 in 1000 & 1 in 100 (0.1% and 1%).
- Medium risk (probability) - chance of flooding of between a 1 in 100 and 1 in 30 (1% and 3.3%).
- High risk (probability) - chance of flooding of greater than 1 in 30 (3.3%).

Figure 8 confirms the extent and depth of flooding during 3.3% AEP (1 in 30 year – high probability / risk), 1% AEP (1 in 100 year - medium probability / risk) and 0.1% AEP (1 in 1000 year – low probability / risk) events. This confirms central areas of the Site, containing the proposed development are at High – Medium risk of pluvial flooding, whilst almost the entire Site – excluding the extreme north-eastern boundary – is at Low risk.

The SFRA does not indicate reported incidents of any historical surface water flooding within 100 m of the Site (Metis Consultants, 2018). The SWMP confirms the Site is not located within a Critical Drainage Area (CDA)[3] (Capita, 2012).

[3] 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, 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.

Figure 8. EA surface water flood risk map (EA, 2023)



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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 0.6 m above floor level.

- >0.9 m Very likely to exceed the maximum flood depth where property-level flood resilience measures are still effective.

Analysis of OS mapping, ground elevation data and the EA's pluvial flow route mapping in the 1 in 100 year event confirms the Site is located on a potential overland flow route during a Medium risk scenario.

During this event all of flow velocities are less than 0.25 m/s. The flows are unlikely to affect the buildings and/or access routes to the Site. Water may flow onto the Site from adjacent land to the south east and should be managed, in addition to run-off generated on-Site. The Site may also potentially transmit overland flows off-Site in a northwesterly direction.

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

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, 2023).

The Site is susceptible to overland flow and/or surface water flooding which may be increased as a result of climate change.

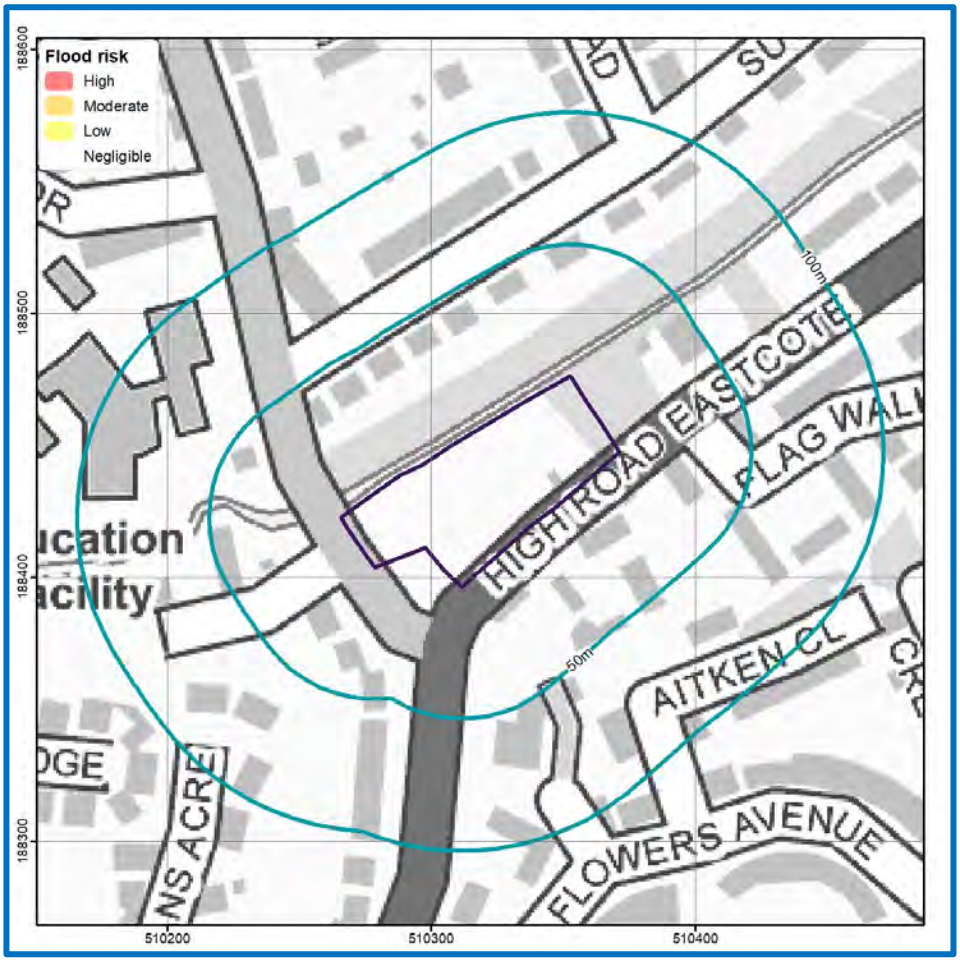
On-Site surface water drainage systems should be designed and maintained appropriately to manage the run-off.

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) indicate that there is a Negligible risk of groundwater flooding at surface in the vicinity from permeable bedrock and superficial geology during a 1 in 100 year event.

Figure 9. GeoSmart GW5 Groundwater Flood Risk Map (GeoSmart, 2023)



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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

A site-specific assessment has been undertaken to refine the groundwater risk screening information on the basis of site-specific datasets (see Section 3) including BGS borehole data, 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 any 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 and superficial aquifers in response to high river events.

The SFRA does not indicate any reported incidents of historical groundwater flooding within 20 m of the Site (Metis Consultants, 2018).

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

Spring lines could give rise to groundwater seepage and overland flow through the Site; it is noted that a spring line has not been identified in the vicinity of the Site.

Based on available BGS borehole records, a shallow water table has been identified potentially within 5 m of the ground surface.

Topographic low points have been identified on-Site where any groundwater discharge may accumulate.

Areas of surface water flooding identified on the Site may be exacerbated by groundwater flooding.

Site specific assessment suggests that groundwater levels could reach the surface and appropriate mitigation may be required.

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

The risks are higher for basements, buried infrastructure and soak-away systems which may be affected by high groundwater levels. It is noted that the development proposals do not include the construction of any basement areas.

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.

The impact of climate change on groundwater levels beneath the Site is linked to the predicted risk in both peak river levels and the variation in rainfall recharge which is uncertain.

Based on the available evidence the resulting increase to groundwater flood risk will be mitigated by the proposed measures.

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

The SFRA has identified 1 - 20 incidences or modelled incidences of flooding as a result of surcharging sewers within the HA5 2 postcode. However, it is recognised that this four digit postcode covers a large area and instances of flooding are not specific to the Site (Metis Consultants, 2018).

The SFRA confirms the Site has not been identified as a "Local Flooding Hot Spot" (Metis Consultants, 2018).

Records held by Thames Water indicate that there have been no incidences of flooding related to the surcharging of public sewers at the Site (Thames Water, 2022; Appendix C).

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

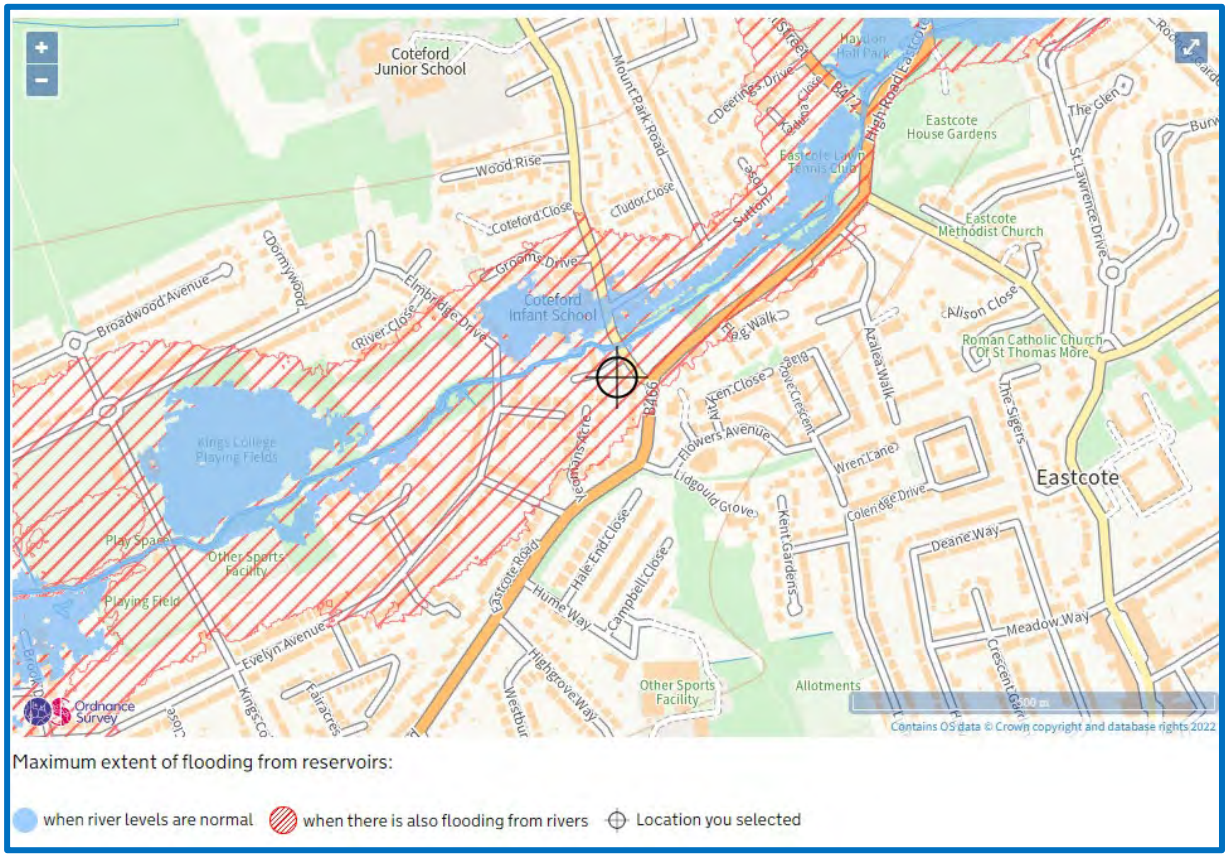
supply infrastructure, its condition and the density of buildings. The risks of flooding to properties from burst water mains cannot be readily assessed.

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).

Reservoir flooding

According to the EA's Risk of Flooding from Reservoir mapping the Site is at risk of flooding from reservoirs (Figure 10) (EA, 2023).

Figure 10. EA Risk of Reservoir Flooding (EA, 2023)



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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, 2023).

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 been identified within 500 m of the Site. A culvert has been identified adjacent to the Site comprising a covered channel or pipe that is used to continue a watercourse or drainage path under an artificial obstruction. Culverts range in size and capacity and require appropriate maintenance to function. Screens may be installed across openings to prevent entry and reduce the risk of blockage inside the culvert. However, they can cause of flooding when they are poorly maintained or trap large amounts of debris in times of high flow

The Site lies upstream of the infrastructure and could potentially be affected by flooding as a result of blockage. Further assessment of local elevation data indicates the Site lies below adjacent land and is therefore potentially at risk. An additional assessment is therefore recommended.

The Local authority is responsible for maintenance of the infrastructure. It is recommended that an appropriate maintenance regime is put in place to maintain effective operation of the culvert/bridge.

The SFRA has not identified any historical drainage issues within the Site area (Metis Consultants, 2018).

5. Flood risk from the development

Floodplain storage

The development is located within a fluvial Flood Zone, it would be impacted by the 1 in 100 year plus 21% climate change event and involves an increase in building footprint, compensatory flood storage is therefore required for any loss in flood plain storage. Any losses in floodplain storage are likely to displace flooding and could potentially alter flood flow routes, increasing flood risk elsewhere.

Compensation for any reduction in floodplain storage and displacement of flood water (up to the 1 in 100 year event with allowance made for climate change) should be provided. Compensatory flood storage must be provided through a level for level, volume for volume approach and may require an area at the edge of the floodplain to provide storage.

Where this is not possible, the EA and Lead Local Flood Authority (LLFA) may accept voids, stilts or undercroft parking as options for flood plain storage compensation. These solutions should be discussed at an early stage and may require a management and maintenance plan, as they can become blocked over time leading to a gradual reduction in storage. More information is provided in the EA's "*Framework and Guidance for Assessing and Managing Flood Risk for New Development*" FD2320/TR2 publication (EA, 2005).

Scoping estimates of the storage requirements can be made by multiplying the increase in building footprint by the average flood depth at the development, during the 1 in 100 year flood event with a 21% allowance for climate change.

Drainage and run-off

The proposed development involves an increase of impermeable surfaces at the Site. An estimation of run-off is therefore required to permit effective Site water management and prevent any increase in flood risk to off-Site receptors from the Site.

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 2022) confirms the requirements for inclusion within FRA's.

As the proposed development is commercial, the lifespan of the development and requirements for climate change should allow up to the 2100 scenario.

Table 4. London Management Catchment Peak Rainfall Allowances

London Management Catchment	3.3% Annual exceedance rainfall event		1% Annual exceedance rainfall event	
	2050s	2070s	2050s	2070s
Central	20%	20%	20%	25%
Upper end	35%	35%	40%	40%

Sustainable Drainage System (SuDS)

It is recommended that 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. Potential SuDS options are presented within the accompanying Sustainable Drainage Scheme report (ref: 77698.01R1).

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 6 overleaf (Table 3 of the NPPG (2014)).

As the Site is located within Flood Zone 3a and the proposed development is defined as More Vulnerable; the proposals are acceptable, but may be subject to the Sequential and Exceptions Test.

Where the Sequential Test is required, it must be demonstrated that there are no alternative reasonably available Sites at lower risk of flooding within the Borough of Hillingdon. For a site to be considered to be reasonably available it must be 'deliverable' and 'developable' as defined by the NPPF (2021).

Table 5. 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

EA Flood Risk Standing Advice for vulnerable developments located in Flood Zones 2 or 3

The proposed development is considered to be a minor extension, this is defined as a household or non-domestic extension with a floor space of no more than 250 m^2.

In line with the 'Minor extensions standing advice'

- A plan is required showing the finished floor levels and the estimated flood levels.
- Floor levels are either no lower than existing floor levels or 0.3 m above the estimated flood level. If your floor levels aren't going to be 0.3 m above existing flood levels, you need to check with your local planning authority if you also need to take flood resistance and resilience measures.

For all relevant vulnerable developments (i.e. more vulnerable, less vulnerable and water compatible), advice on the points should be followed:

- Surface water management;
- Access and evacuation; and

- Floor levels.

Surface water management

Plans for the management of surface water need to meet the requirements set out in either the local authority's:

- Surface water management plan where available; OR
- Strategic flood risk assessment.

They also need to meet the requirements of the approved building regulations Part H: drainage and water disposal. Read section H3 rainwater drainage.

Planning permission is required to use a material that can't absorb water (e.g. impermeable concrete) in a front garden larger than $5m^2$.

Access and evacuation

Details of emergency escape plans should be provided for any parts of a building that are below the estimated flood level:

Plans should show:

- Single storey buildings or ground floors that don't have access to higher floors can access a space above the estimated flood level, e.g. higher ground nearby;
- Basement rooms have clear internal access to an upper level, e.g. a staircase;
- Occupants can leave the building if there's a flood and there's enough time for them to leave after flood warnings.

Floor levels

The following should be provided:

- Average ground level of the building; and
- Finished floor level of the lowest habitable room in the building.

Ground floor levels should be a minimum of whichever is higher of:

- 0.3 m above the general ground level of the Site; OR
- At least 0.6 m above the estimated river or sea flood level[4].

If you cannot raise floor levels above the estimated flood level, you need to consider extra flood resistance and resilience measures.

[4] This is 0.6 m above the 1 in 100 year fluvial or 1 in 200 year tidal flood events. The 0.6 m is split into a 0.3 m freeboard allowance for climate change and 0.3 m allowance for the inaccuracies in the EA's flood modelling. Where the climate change flood level is known, a 0.3 m allowance should be added to the climate change flood level to allow for the inaccuracies in the EA's flood modelling.

Extra flood resistance and resilience measures

Follow the extra flood resistance and resilience requirements for developments in flood risk areas where ground floor levels are lower than the estimated flood level for the Site.

Water depth up to 0.3 m

The design of the building or development should keep water out as much as possible. You should use materials that have low permeability (materials that water cannot pass through, for example, impermeable concrete).

Water depth from 0.3 m to 0.6 m

The design of the building or development should keep water out (unless there are structural concerns) by:

- Using materials with low permeability to at least 0.3 m;
- Using flood resilient materials (for example lime plaster) and design (for example raised electrical sockets);
- Making sure there's access to all spaces to enable drying and cleaning.

Water depth above 0.6 m

The design of the building or development should allow water to pass through the property to avoid structural damage by:

- Using materials with low permeability to at least 0.3 m;
- Making it easy for water to drain away after flooding;
- Making sure there's access to all spaces to enable drying and cleaning.

Local policy and guidance

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

West London Strategic Flood Risk Assessment for the boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow (Metis Consultants, 2018):

- POLICY DMEI 9: Management of Flood Risk A) Development proposals in Flood Zones 2 and 3a will be required to demonstrate that there are no suitable sites available in areas of lower flood risk. Where no appropriate sites are available, development should be located on the areas of lowest flood risk within the site. Flood defences should provide protection for the lifetime of the development. Finished floor levels should reflect the Environment Agency's latest guidance on climate change.

GeoSmart Information

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).

Environment Agency pre-application response:

The EA (2022) was contacted as part of this FloodSmart report in order to obtain site-specific feedback on the proposed development. However, a response was not received within the timeframe of this report.

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

The Site is located within an area which is affected by flooding from rivers, the following table confirms the flood depths associated with the area proposed for development.

Table 6. Flood levels compared to ground levels in the area proposed for development

Ground levels in area proposed for development (mAOD)	Modelled Flood Levels (mAOD)		
	1 in 100 year (mAOD)	1 in 100 year plus 21% CC allowance (mAOD)	1 in 1000 year (mAOD)
42.7 – 43.8	43.12	43.22	43.49
Flood depths (m)	0 – 0.42	0 – 0.52	0 – 0.79

Raising minimum floor levels

The vulnerability classification of the Site and the Flood Zone means proposals for the Site fall under the EA's Flood Risk Standing Advice (FRSA) for more vulnerable developments.

In this instance, in line with the EA's FRSA the recommended minimum Finished Floor Level (FFL) should be set at least 0.3 m above the 1 in 100 year plus 21% allowance for climate change flood level of 43.22 mAOD.

Present designs allow for a raised development platform and FFL's for the nursery building of 44.0 mAOD; this will offer suitable flood protection under the 1 in 100 year + 21% CC allowance scenario.

Additional Mitigation (if FFLs cannot be raised as per the current development plans)

Where it is not possible to raise the minimum finished floor levels to the recommended elevation, 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.

Where flood depths are expected to exceed 0.6 m at the Site, a water entry strategy should be adopted to preserve building integrity and to promote flood resilience rather than resistance (which is more difficult to achieve for significant flood depths). A structural engineer should be consulted to confirm this would be a suitable strategy for the proposed development, to ensure flood flows would not impact the structural integrity of the building. Potential strategies include:

- Ground floors designed to permit water passage at high flood depths;
- Hard flooring and flood resilient metal staircases;
- Heating systems, electrical sockets and utility meters should be raised above the predicted flood level where possible; and
- Sump and pump.

Where flood depths are expected to be between 0.3 m and 0.6 m both water exclusion and water entry strategies should be adopted depending on a structural assessment of the building.

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

Surface water (pluvial) flood mitigation measures

The mitigation measures detailed above for river and sea flood risk in addition to the proposed raising of ground levels in the area of the proposed nursery building by 300 mm and finished floor levels of the aforementioned building by a further 300 mm are likely to be suitable for the flood depths which could be experienced in a 1 in 1000 year pluvial flood event, which acts as the proxy for a 1 in 100 year event adjusted for climate change.

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

A Sustainable Drainage Strategy (SuDS) has also been developed for the Site (77698.01R1), to ensure effective management of surface water runoff from the proposed development.

If these mitigation measures are implemented this could reduce the flood risk to the development from Very Low - High to Very Low – 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;
- 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

According to EA information, the Site is at risk of reservoir flooding.

There would be a relatively high rate and onset of flooding associated with a reservoir breach, it is therefore unlikely that safe access could be achieved unless a long warning period was provided. Therefore, occupants should get to the highest level of the building as possible and contact the emergency services.

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

Emergency evacuation - safe access / egress and safe refuge

Emergency evacuation to land outside of the floodplain should be provided if feasible. Where this is not possible, 'more vulnerable' developments and, where possible, development in general (including basements), should have internal stair access to an area of safe refuge within the building to a level higher than the maximum likely water level. An area of safe refuge should be sufficient in size for all potential users and be reasonably accessible to the emergency services.

Emergency evacuation from the development and the Site should only be undertaken in strict accordance with any evacuation plans produced for the Site, with an understanding of the

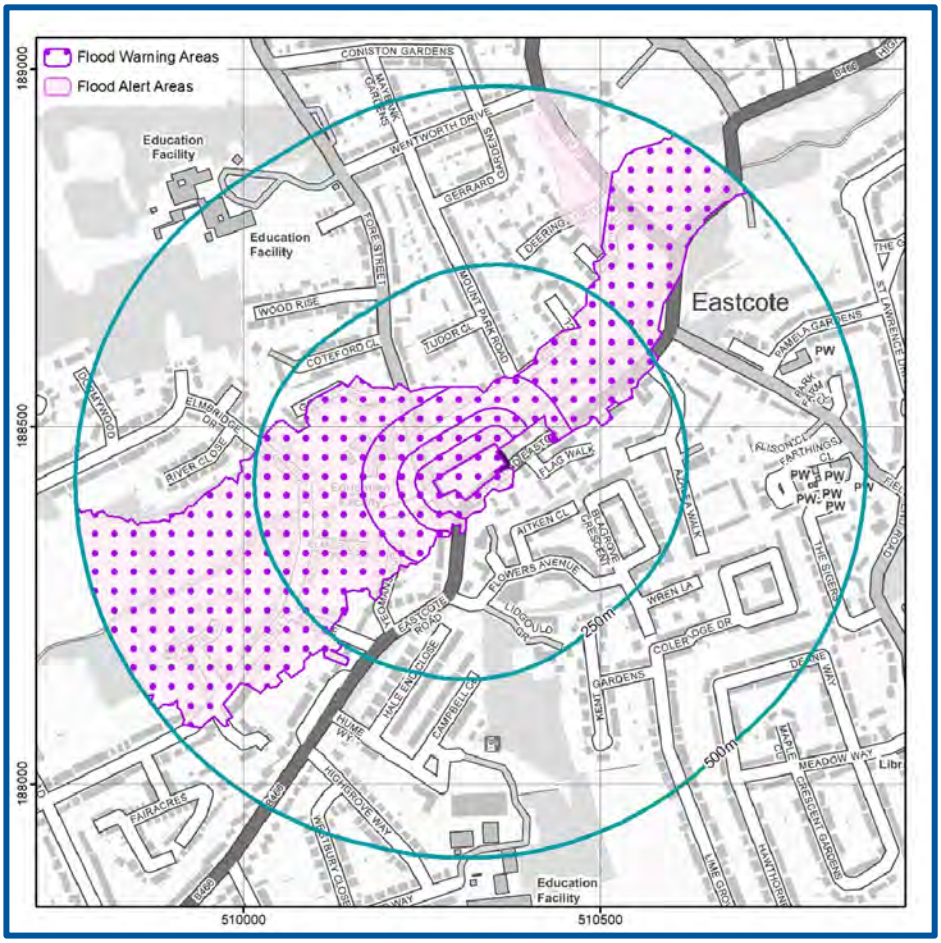
flood risks at the Site including available mitigation, the vulnerability of occupants and preferred evacuation routes.

Flood warnings

The EA operates a flood warning service in all areas at risk of flooding; this is available on their website: https://www.gov.uk/check-flood-risk. The Site is located within EA Flood Alerts (ref: 062WAF28Pinn) and Warning coverage areas (ref: 062FWF28Eastcote) so is able to receive alerts and warnings (Figure 11). All warnings are also available through the EA's 24 hour Floodline Service 0345 988 1188.

The EA aims to issue Flood Warnings 2 hours in advance of a flood event. Flood Warnings can provide adequate time to enable protection of property and evacuation from a Site, reducing risk to life and property.

Figure 11. EA Flood Warning Coverage for the local area (EA, 2023).



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Emergency evacuation

Where possible, a safe access and egress route with a 'very low' hazard rating from areas within the floodplain to an area wholly outside the 1 in 100 year flood event including an allowance for climate change should be demonstrated.

Based on the EA's Flood Zone Map the closest dry evacuation area within Flood Zone 1 is immediately adjacent to the eastern Site boundary. It is advised that evacuation from the premises would be the preferred option in a flood event if safe to do so. It is recommended that occupants prepare to evacuate as soon as an EA Flood Warning is issued in order to completely avoid flood waters.

On-Site refuge

Evacuation should be the primary action in the event of a flood, as the proposed Site plans do not contain a sufficient area located at first floor level to provide safe refuge for all occupants of the Site.

Other relevant information

A business continuity plan is recommended to reduce risks to people, property and profit.

A Flood Warning and Evacuation Plan (FWEP) is recommended, and occupants should be signed up to receive EAs Flood Alerts and Warnings.

Registration to the Environment Agency's flood warning scheme can be done by following this link: https://www.gov.uk/sign-up-for-flood-warnings.

It is recommended that main communication lines required for contacting the emergency services, electricity sockets/meters, water supply and first aid stations and supplies are not compromised by flood waters. Where possible these should all be raised above the extreme flood level.

8. Conclusions and recommendations

Table 7. Risk ratings following implementation and subsequent maintenance of mitigation measures

Source of Flood Risk	Baseline	After Mitigation
River (fluvial) flooding	Medium	Low
Sea (coastal/tidal) flooding	Very Low	N/A
Surface water (pluvial) flooding	Very Low – High	Very Low – Low.
Groundwater flooding	Low	Negligible
Other flood risk factors present	Yes	Yes

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 8. Summary of responses to key questions in the report

Key sources of flood risks identified	Fluvial, pluvial, groundwater, reservoirs (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

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Ordnance Survey Mapping (2023). © Crown copyright. All rights reserved. Licence number AL 100054687. For full terms and conditions visit: www.ordnancesurveyleisure.co.uk

Survey Open Data (2023). Accessed from: http://www.geostore.com/environment-agency/survey.html#/survey/tandc on 12/01/2023.

Thames Water (2022). Thames Water Property Searches – Sewer Flooding History Enquiry. SFH/SFH Standard/2014_2764519.

UK Flood Maps (Ambiental FTP) (2023). UKFloodMap4 Data

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 100 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 2023 BlueSky copyright and database rights 2023
Bedrock & Superficial Geology	Contains British Geological Survey materials © NERC 2023 Ordnance Survey data © Crown copyright and database right 2023

Flood Risk (Flood Zone/RoFRS/Historic Flooding/Pluvial/Surface Water Features/Reservoir/ Flood Alert & Warning)	Environment Agency copyright and database rights 2023 Ordnance Survey data © Crown copyright and database right 2023
Flood Risk (Groundwater)	GeoSmart, BGS & OS GW5 (v2.4) Map (GeoSmart, 2023) Contains British Geological Survey materials © NERC 2023 Ordnance Survey data © Crown copyright and database right 2023
Location Plan	Contains Ordnance Survey data © Crown copyright and database right 2023
Topographic Data	OS LiDAR/EA Contains Ordnance Survey data © Crown copyright and database right 2023 Environment Agency copyright and database rights 2023
UK Flood Maps (Ambiental FTP) (Surface Water Flooding)	Contains Ordnance Survey data © Crown copyright and database right 2023 Contains Ambiental UKFloodMap4™ data 2023

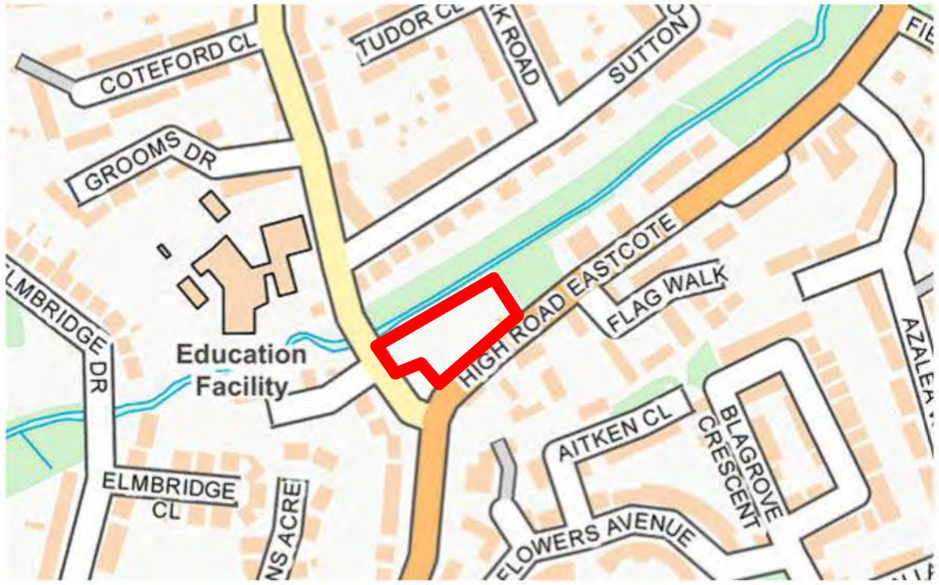
11. Appendices

GeoSmart Information

Appendix A

Site plans

These drawings are for use in the planning process only. All measurements should be checked on site. These plans should not be used for structural calculations or any other engineering purpose.



not to scale

site area 3892sqm

1 **Site**
1 : 1250

0 m 50 m 100 m

North

Peter Pendleton & Associates
97 Lower Marsh
London SE1 7AB

www.pendleton-assoc.com

REVISION:

Land at Corner
of Fore Street and High
Road, HA5 2ET

Site location plan

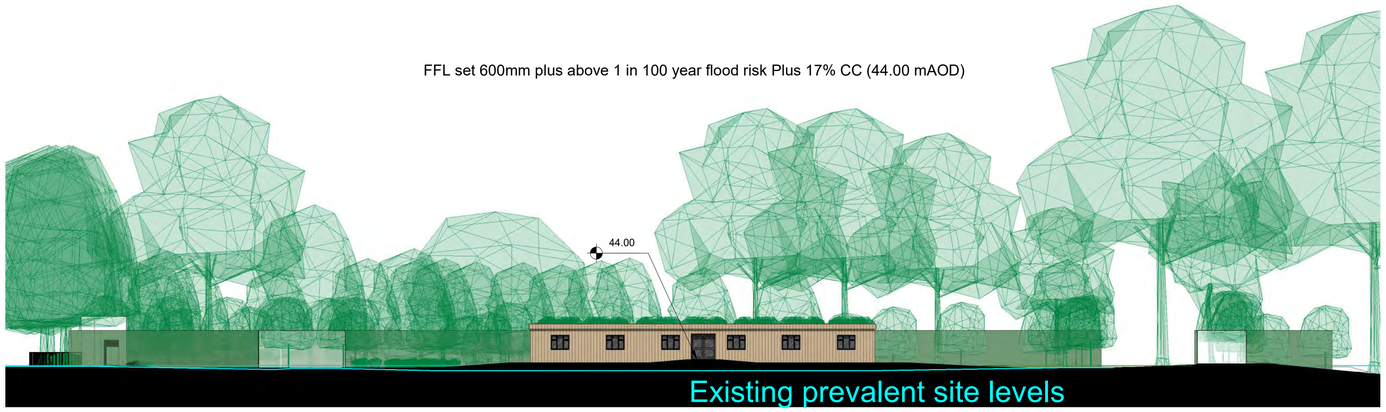
Project number	EAS
Date	10/01/2023
Drawn by	JH
Checked by	NKW

EX-EAS-01

Scale@A3 1 : 1250

10/01/2023 15:26:36

FFL set 600mm plus above 1 in 100 year flood risk Plus 17% CC (44.00 mAOD)



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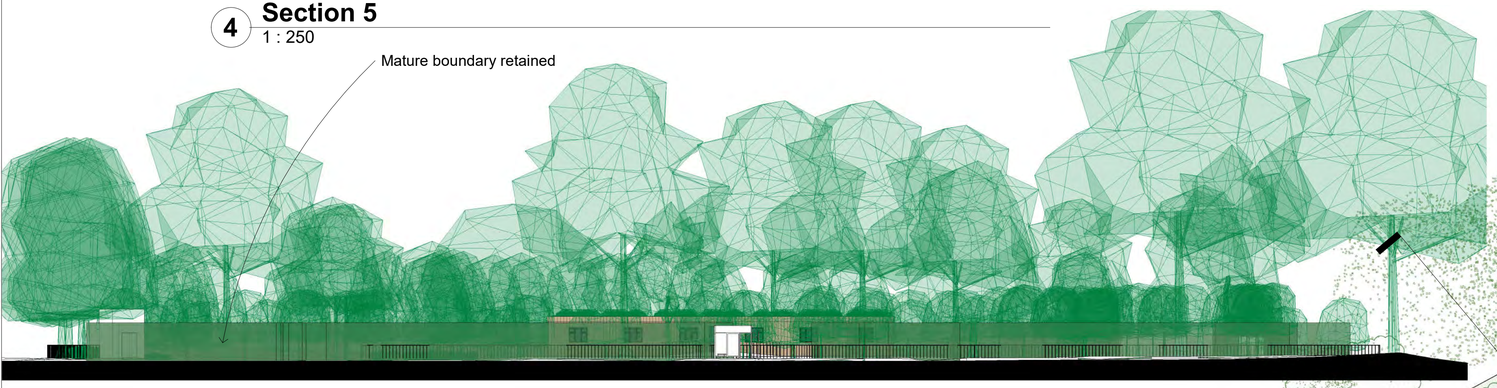
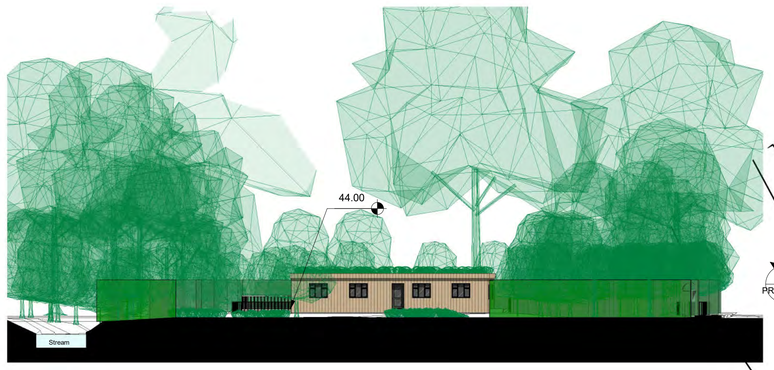
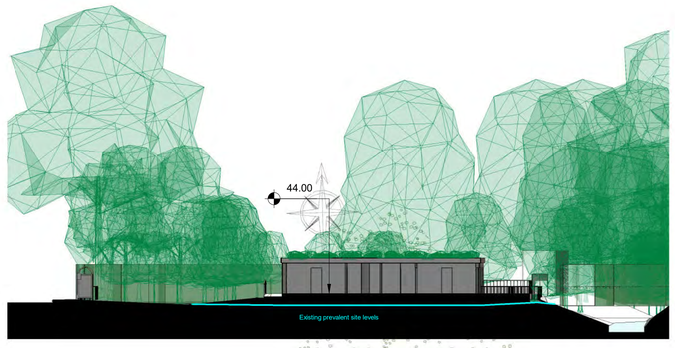


3 High Road street elevation
1 : 250



2 Section 6
1 : 250

5 Section 7
1 : 250



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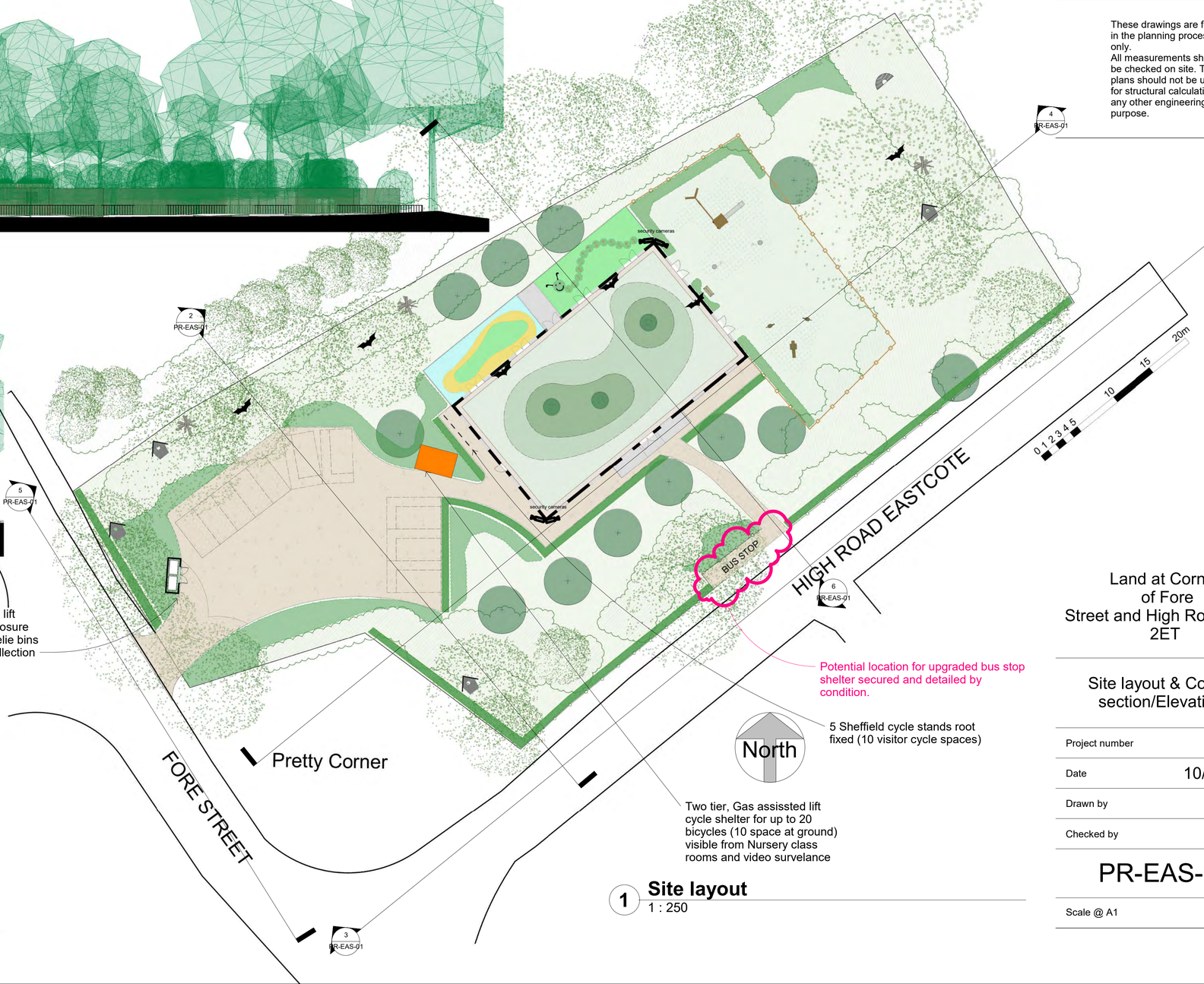


1 Site layout
1 : 250

PETER PENDLETON & ASSOCIATES LTD

www.pendleton-assoc.com

Peter Pendleton &
Associates
0207 202 9001
0207 202 9002
info@pendleton-assoc.com

These drawings are for use in the planning process only.
All measurements should be checked on site. These plans should not be used for structural calculations or any other engineering purpose.

Land at Corner
of Fore
Street and High Road, HA5
2ET

Site layout & Context section/Elevations

Project number	EAS
Date	10/01/2023
Drawn by	JH
Checked by	NKW

PR-EAS-01

Scale @ A1	1 : 250

11/01/2023 10:49:03

1 CHILDREN'S PLAY AREA

350m2+ of play space with quality timber equipment including a combination tower with slide and swing together with a pair of wobble dishes and some snail creatures. There's also a musical arbour and magnifying post to encouage examination of woodland finds. Play surfacing will be a rubber matting through which the grass can grow. There is also a toddler's play area with colourful, stimulating designs in Wetpour






2 SURFACING

All works within the Tree Root Protection Areas receive Cell-web TRP, which is a cellular confinement system allowing a no-dig solution to prevent compaction around tree roots. The carpark and paths are surfaced with a permeable buff tarmac


3 WOODLAND WALK

Due to the verdant nature of the locale, adjacent to the river, trees have been retained wherever possible, thus creating a Woodland Walk accessed via the Children's Play Area with a meandering woodchip path that leads to a Storytelling Circle with mushroom stools. The flora is enhanced with shade tolerant perennials, wildflower seed and drifts of springtime bulbs, such as aconite, snowdrops and wood anemone.






HIGH ROAD EASTCOTE

0 1 2 3 4 5 10 15 20m

KEY

- Existing trees retained & protected in accordance with BS5037:2012 & EnviroArb-Solutions Arboricultural Impact Assessment ref. EAS-062v2 dated 2/12/22
- Existing vegetation retained where practicable in accordance with LUC Ecological Assessment ref. 14216 dated 11/22
- Porous asphalt - colour buff
- Cellweb TRP (Tree Root Protection) system
- Wetpour rubber surfacing - island design & colour TBC
- Wetpour rubber surfacing - caterpillar alphabet design & colour TBC
- Tarmac
- Bark mulch path
- Galvanised metal, anti-trap bow-top railings in green, RAL 6005, 1200mm he
- Timber palisade fencing in natural, 1000mm height
- Lawn - newly laid turf to BS3969:1998
- Rubber matting for Critical Fall Height
- Wildflower meadow - Emorsgate EW1 Woodland Seed Mix
- Bulbs scattered, left to naturalise
- Intensive green roof
- Hedgerows
- Shrubs & herbaceous planting
- Mushroom stools - ex.www.caledoniaplay.com
- Rustic bench - ex.www.caledoniaplay.com
- Magpost - ex.www.caledoniaplay.com
- Bird boxes - various types as directed by ecologist
- Bat boxes - various types as directed by ecologist
- Log pile from site won timber
- Hedgehog house
- Musical arbour with instruments ex.www.caledoniaplay.com
- Wobble dish ex. www.timberplay.com
- Snail ex. www.timberplay.com
- Queen snail ex. www.timberplay.com
- Timber hut, swing & slide - Hut Combination 371 ex. www.timberplay.com

PLANTING SCHEDULE

CLASS	LATIN NAME	COMMON NAME	LOCATION
Trees	Crataegus laevigata 'Paul's Scarlet'	Crimson hawthorn	Building frontage
	Malus tschonoski	Crab apple	Building frontage
	Prunus avium	Wild cherry	Carpark & Children's Play Area perimeter
	Quercus robur	Oak	Rear of building & High Road Eastcote
	Sorbus aucuparia	Rowan	Building frontage
Mixed Native Hedgerow	Acer campestre	Field maple	To perimeter
	Cornus sanguinea	Dogwood	
	Corylus avellana	Hazel	
	Crataegus monogyna	Hawthorn	
	Ilex aquafolium	Holly	
	Ligustrum vulgare	Privet	
	Rosa canina	Dog rose	
	Viburnum opulus	Guelder rose	
Hedging	Carpinus betulus	Hornbeam	To building
Woodland infill	Ajuga reptans 'Caitlins Giant'	Bugle	In drifts throughout the woodland
	Corylus avellana	Hazel	
	Deschampsia cespitosa	Tufted hair grass	
	Dryopteris filix-mas	Male fern	
	Helleborus foetidus	Stinking hellebore	
	Luzula nivea	Snowy woodrush	
	Stachys officinalis	Betony	
Bulbs	Anemone blanda	Wood anemone	Rear of building and woodland
	Eranthis hyemalis	Winter aconite	
	Erythronium 'Pagoda'	Dog's tooth violet	
	Fritillaria meleagris	Snake's head fritillary	
	Galanthus nivalis	Snowdrop	
	Narcissus poeticus	Poet's daffodil	Front of building
	Narcissus pseudonarcissus	Wild daffodil	
Shrubs	Buddleia davidii	Butterfly bush	To the car park
	Cistus purpurea	Rock rose	
	Hypericum spp.	St. Johns Wort	
	Lavandula angustifolia 'Munstead'	Lavender	
	Pachysandra terminalis	Japanese spurge	
	Philadelphus 'Belle etoile'	Mock orange	
	Salvia spp.	Sage	
	Sarcococca confusa	Sweet box	
	Viburnum tinus	Laurustinus	
Intensive Green Roof	Amelanchier lamarckii	Snowy mespilus	Zone 1 - central, 300mm depth substrate
	Anemone 'Honorine Jobert'	Japanese anemone	
	Cornus kousa	Chinese dogwood	
	Euonymus 'Red Cascade'	Spindle	
	Mahonia 'Winter Sun'	Oregon grape	
	Miscanthus 'Undine'	Elephant grass	
	Allium 'Globemaster'	Ornamental onion	Zone 2 - mid, 200mm depth substrate
	Brunnera macrophylla	Siberian bugloss	
	Euphorbia spp.	Wood spurge	
	Gaura 'Whirling Butterflies'	Whirling Butterflies	
	Helictotrichon sempervirens	Blue oat grass	
	Kniphofia 'Fawny King'	Red Hot Poker	
	Melica ciliata	Hairy Melic	
	Nepeta 'Walkers Low'	Catmint	
	Sesleleria nitida	Autumn moor grass	
	Verbena bonariensis	Purple top	
	Armeria maritima	Sea thrift	Zone 3 - outer, 100mm depth substrate
	Eschscholzia californica	Californian poppy	
	Lychnis coronaria 'Alba'	White rosa campion	
	Pulsatilla vulgaris	Pasqueflower	
	Primula veris	Primrose	
	Scabiosa columbaria	Small scabious	
	Thymus serphyllum	Creeping thyme	
	Tulipa turkestanica	Turkestan tulip	

NOTE:
Do not scale from this drawing. Drawings represent design intent only. Green roof details to be confirmed by structural engineer and specialist subcontractor. Structural stability of all items to be confirmed by contractor. All materials, components and workmanship shall comply with the relevant British Standards Code of Practice & manufacturers written instructions.

4 GREEN INFRASTRUCTURE

The Biodiversity Net Gain is significant via the introduction of various nectar rich trees, shrubs and perennials; including oak, rowan, wild cherry, hornbeam, crab apple and crimson hawthorn. Mixed native hedging borders the frontage of High Road Eastcote, whilst hornbeam frames the building.





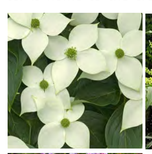
5 ECOLOGICAL ENHANCEMENTS

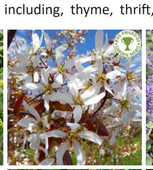
Working in conjunction with Land Use Consultants Ltd. (LUC) , ecological enhancements have been included wherever practicable, including; bat boxes, bird boxes for various species, a hedgehog house and site won log piles. Furthermore the majority of planting is nectar rich , thus creating foraging and nesting opportunities for local wildlife.



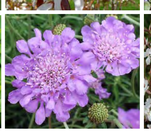

6 GREEN ROOF

Further Biodiversity Net Gain is achieved via the introduction of an intensive green roof. This is zoned to different depth substrates to maximise planting opportunities. Larger shrubs such as Amelanchier, Cornus kousa and Mahonia sit centrally, within islands of perennials including; spurges, bugle, alliums, grasses and whirling butterflies. Whilst the outer perimeter is home to the creeping low varieties including, thyme, thrift, scabious and primrose.





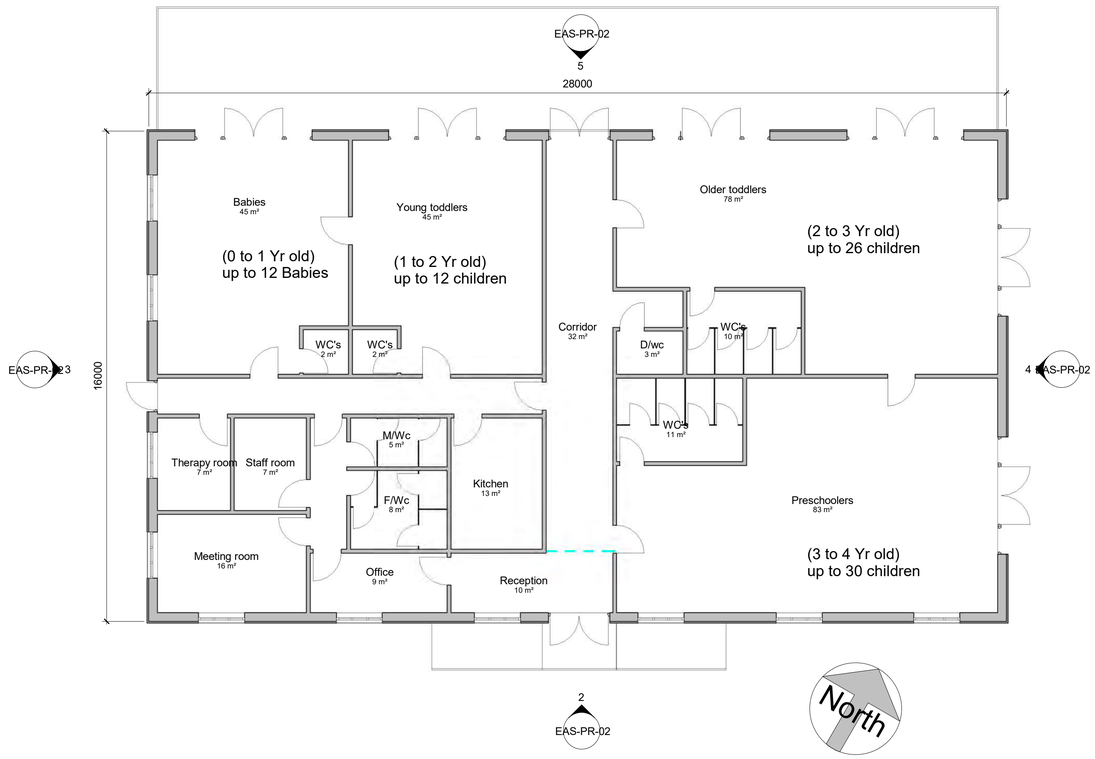





Christina Odell
Chartered Landscape Arcitect
7, St. Margaret's Terrace, St. Leonard's-on-Sea, East Sussex TN37 6EN
07818 566522 - christinajodell@gmail.com

site: Land at the corner of Fore Street & High Road Eastcote, Pinner HA5 2ET	scale: 1:200@ A1
	date: 21.12.2022
title: Landscape Masterplan	drawn by: CJO
	checked: CJO
drawing number: 22-1201	revision

DO NOT SCALE FROM THIS DRAWING | DRAWING SUBJECT TO ©



1 ENTRANCE
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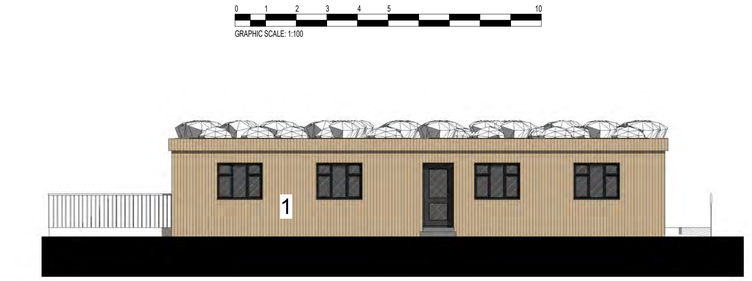
2 South
1 : 100

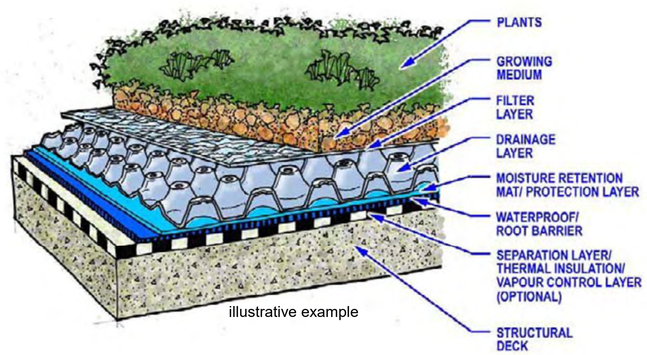


3 West
1 : 100

4 East
1 : 100

5 North
1 : 100

INTENSIVE GREEN ROOF



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www.pendleton-assoc.com

Peter Pendleton &
Associates
0207 202 9001
0207 202 9002
info@pendleton-assoc.com

These drawings are for use in the planning process only.
All measurements should be checked on site. These plans should not be used for structural calculations or any other engineering purpose.

Land at the corner of
Fore
Street & High Road
Eastcote,
Pinner HA5 2ET

Proposed elevation and plan

Project number	EAS
Date	10/01/2023
Drawn by	JH
Checked by	NKW

EAS-PR-02

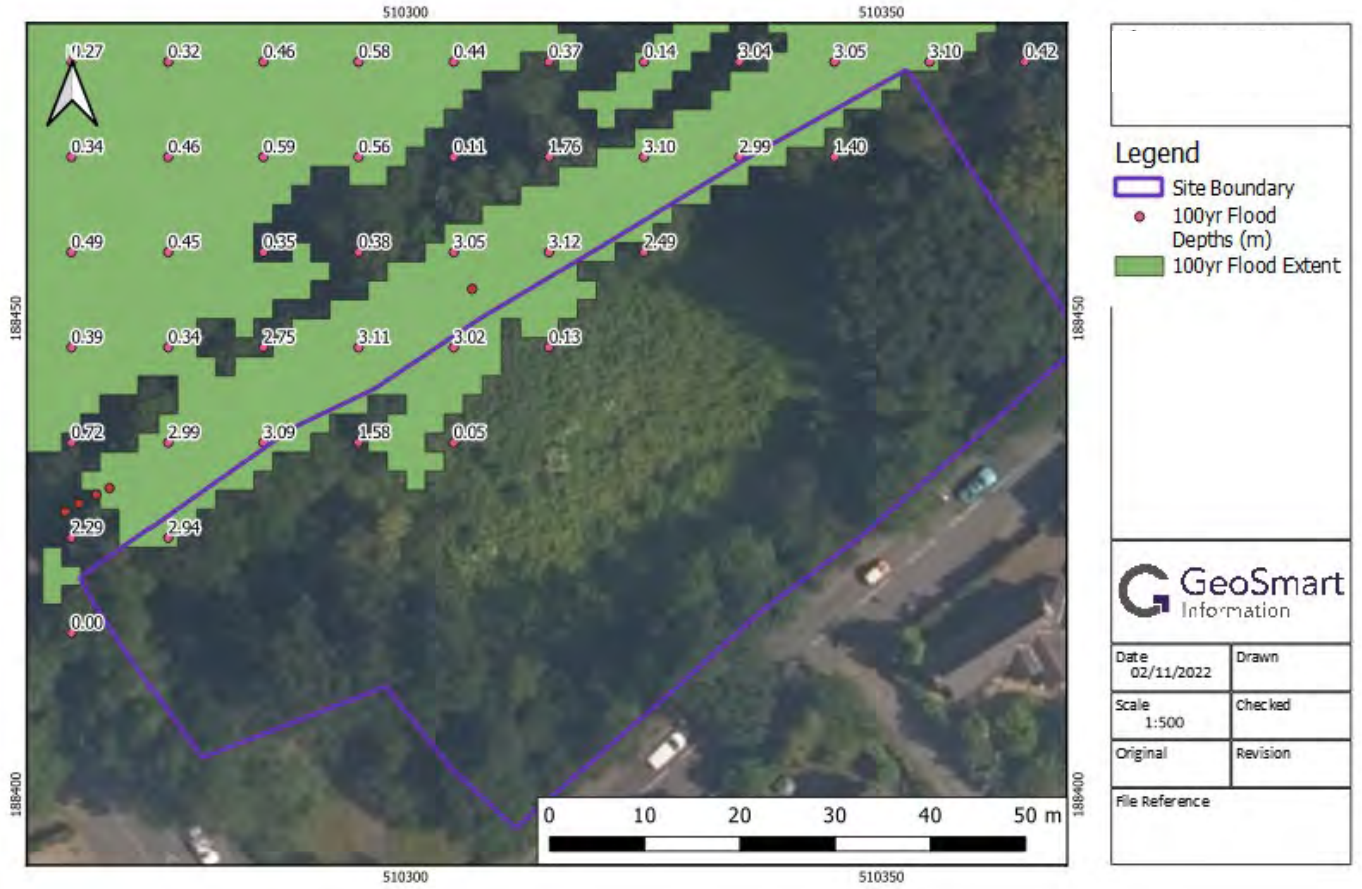
Scale @ A1	1 : 100

10/01/2023 15:33:45

GeoSmart Information

Appendix B

Environment Agency data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0.13
0.72
2.99
3.09
1.58
0.05
2.29
2.94
0.00
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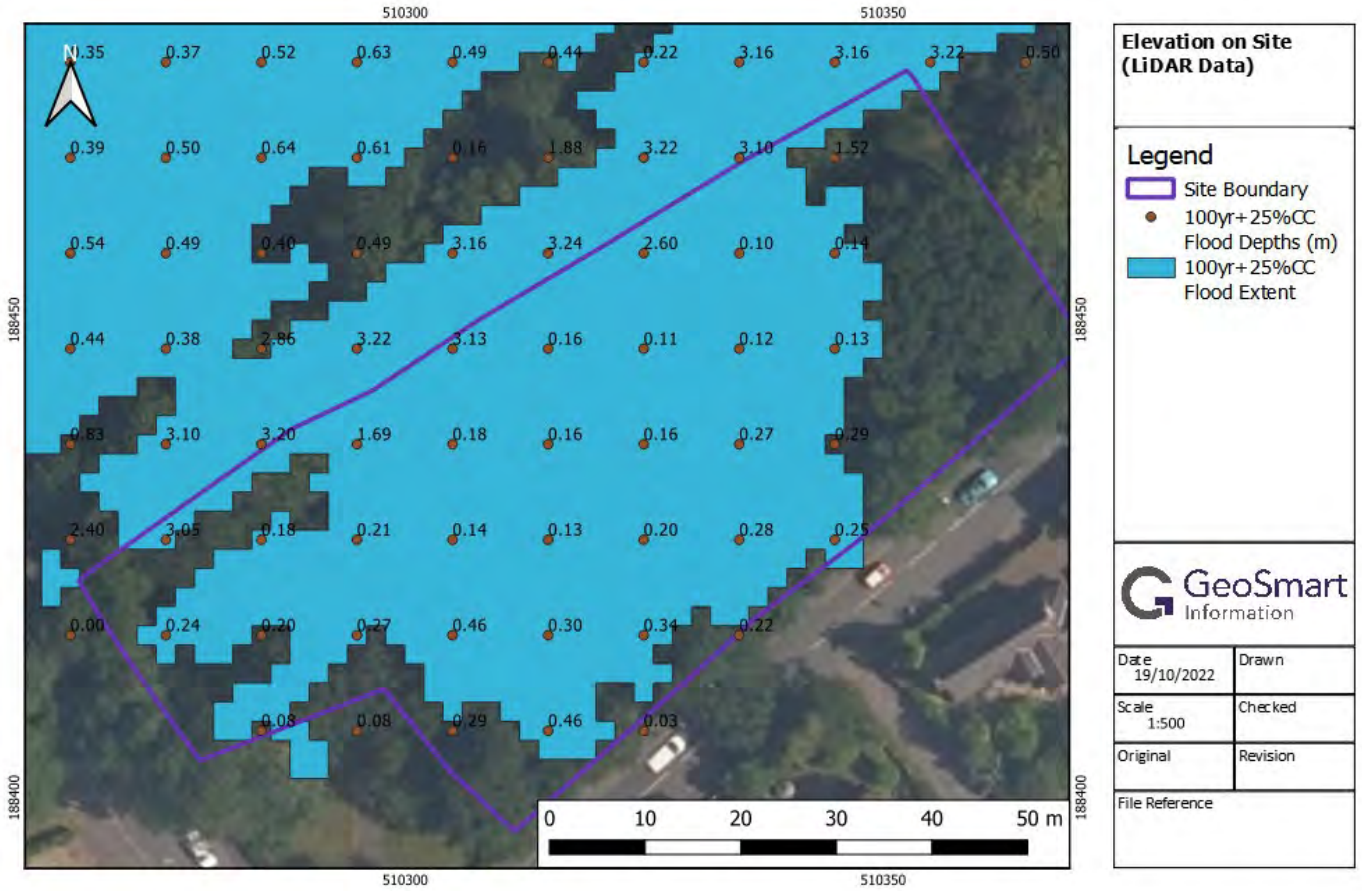
Legend
Site Boundary
100yr Flood Depths (m)
100yr Flood Extent
GeoSmart Information
Date 02/11/2022
Drawn
Scale 1:500
Checked
Original
Revision
File Reference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0.83 3.10 3.20 1.69 0.18 0.16 0.16 0.27 0.29
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0.08 0.08 0.29 0.46 0.03
0 10 20 30 40 50 m
Elevation on Site (LiDAR Data)
Legend
Site Boundary
100yr+25%CC Flood Depths (m)
100yr+25%CC Flood Extent
GeoSmart Information
Date 19/10/2022
Drawn
Scale 1:500
Checked
Original
Revision
File Reference

GeoSmart Information

Appendix C

Thames Water sewer flooding history

Sewer Flooding
History Enquiry

Property Searches

GeoSmart Information Ltd

Bellstone

Search address supplied	Rosery High Road Eastcote Pinner HA5 2ET
Your reference	77698
Our reference	SFH/SFH Standard/2022_4728055
Received date	**3 October 2022**
Search date	**3 October 2022**

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

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

0800 009 4540

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Rosery,High Road,Eastcote,Pinner,HA5 2ET

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

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

(i) any negligent or incorrect entry in the records searched;

(ii) any negligent or incorrect interpretation of the records searched;

(iii) and any negligent or incorrect recording of that interpretation in the search report

(iv) compensation payments

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

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

0800 009 4540

Sewer Flooding
History Enquiry

Property Searches

History of Sewer Flooding

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

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

For your guidance:

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

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

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

0800 009 4540

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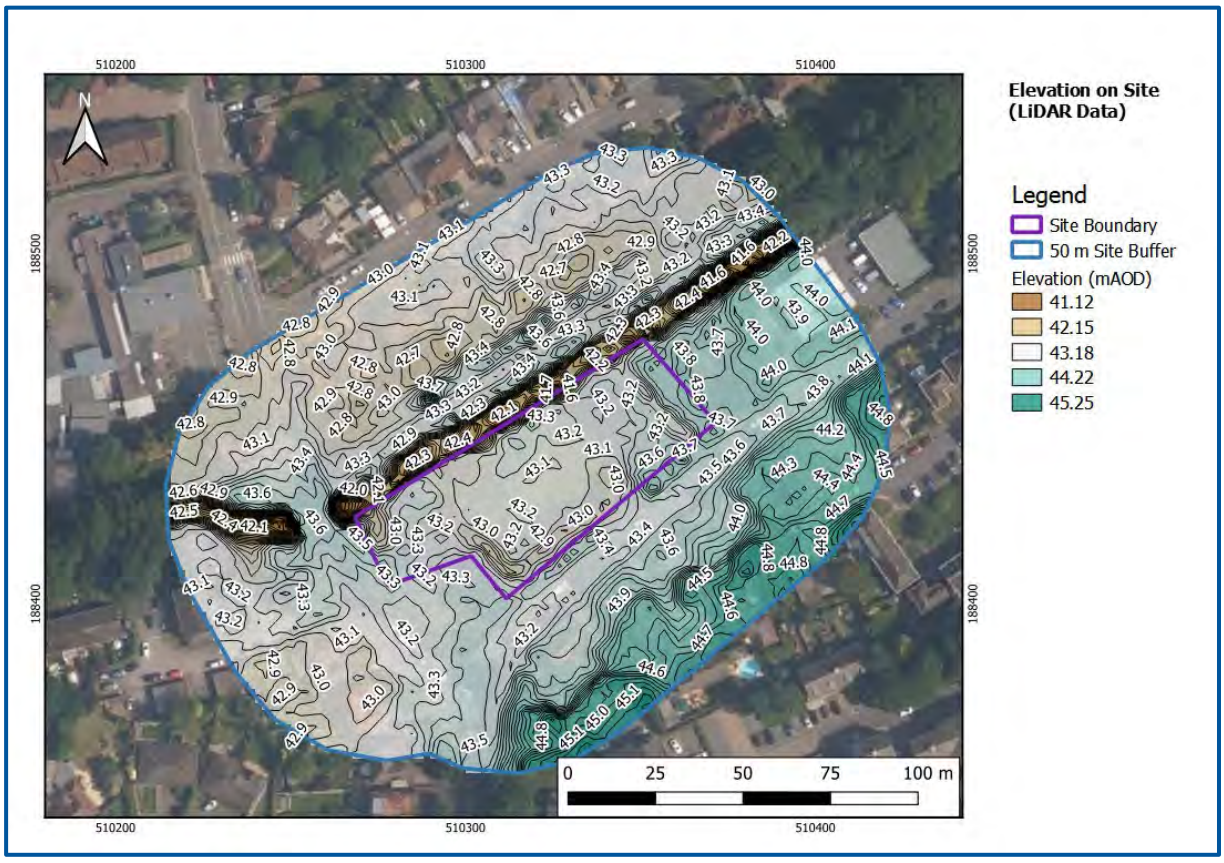
Appendix D

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

GeoSmart Information

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/