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Strategic Flood Risk Assessment Level 2 Epsom and Ewell

EPSOM AND EWELL BOROUGH COUNCIL



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Acronyms and Abbreviations

Abbreviation	Definition
AEP	Annual Exceedance Probability
CFMP	Catchment Flood Management Plan
EA	Environment Agency
EEBC	Epsom and Ewell Borough Council
FRA	Flood Risk Assessment
FRMP	Flood Risk Management Plan
HR	Hazard Rating
LPA	Local Planning Authority
NPPF	National Planning Policy Framework
PPG	Planning Practice Guidance
RMA	Risk Management Authority
RoFSW	Risk of Flooding from Surface Water
SFRA	Strategic Flood Risk Assessment
TRBD	Thames River Basin District
TWUL	Thames Water Utilities Limited
WMS	Web Map Service



1 Introduction

Local Planning Authorities (LPAs) are required under the <u>National Planning Policy Framework (NPPF)</u> to develop a Strategic Flood Risk Assessment (SFRA) which should assess the risk to an area from flooding from all sources, now and in the future. It should take into account the impacts of climate change and assess the impacts of land use changes and development on flood risk.

Epsom and Ewell Borough Council (EEBC) has commissioned a Level 2 SFRA to support the development of their Local Plan, and is a continuation of the Level 1 SFRA, recently completed by Metis Consultants (Metis). This provides a detailed assessment from all sources of flood risk for specified sites requiring targeted assessments. The sources of flood risk assessed include fluvial, surface water, sewer, groundwater and artificial (reservoir) sources. A total of 22 sites were assessed as part of this Level 2 SFRA, as listed in *Section 2.2* of this report.

The purpose of the assessment is to provide the information necessary for the application of the Sequential Test, which identifies the potential development sites with the lowest risk of flooding and whether development can be made safe without increasing flood risk elsewhere. It enables developers to then provide appropriate flood risk mitigation for their site and outlines how this can be achieved. The Site Assessments similarly provide information to support the application of the Exception Test where required.

The key outputs of the Level 2 SFRA include a Screening Assessment for 40 available sites otherwise suitable for development (*Appendix A*), identifying which sites require a full Site Assessment. 22 sites were identified as requiring a Site Assessment (*Appendix B*). These provide an assessment of each flood source, with planning considerations and potential mitigation measures that may be required for the assessed site.

1.1 Background

Metis produced a new Level 1 SFRA for EEBC in August 2024. The Level 1 SFRA is written in line with the <u>NPPF</u> and <u>Flood Risk and Coastal Change Planning Practice Guidance</u> (PPG) and provides a strategic overview of all forms of flood risk throughout the study area. It provides the evidence base to inform the preparation of Local Plans and to ensure that development is steered away from areas identified as most at risk of flooding from all sources.

The <u>PPG</u> states that a Level 2 SFRA is required if:

- "you cannot allocate all land for development outside flood risk areas"
- "you can allocate land for development outside flood risk areas, but believe you may get high numbers of applications in flood risk areas on sites not identified in the local plan"

The Screening Assessment identified 20 sites which require assessment due to surface water flood risk, and a further two sites triggered a Site Assessment due to the significance of both fluvial flood risk and surface water flood risk. Therefore, a total of 22 sites were carried forward to the Level 2 SFRA for Site Assessments.

1.2 Policy

This Level 2 SFRA has been produced in line with national, regional, and local policy. The Level 1 SFRA was also produced in line with policy which is relevant to the Level 2 SFRA, however, there

are some policy requirements which specifically relate to Level 2 Site Assessments. These policies are put in place to ensure that flood risk is considered when making planning decisions about the design and location of any future development, including flood risk management features and structures. This ensures that development is located away from areas at greater risk of flooding to protect both people and property.

The Level 1 SFRA has a 'Policy Summary' section which provides an overview of the flood risk policies and requirements on national, regional and local levels. Local borough-specific policies and requirements are also referenced for each borough with a link to the key documents relating to flood risk.

1.2.1 National Policy

National policy which guides the requirements of SFRAs includes the <u>NPPF</u> and accompanying <u>PPG</u>, which contain information on when SFRAs (Levels 1 and 2) are required, and what level of detail they should contain. The <u>NPPF</u> and <u>PPG</u> also introduce the Sequential and Exception Tests. The Sequential Test compares the site which is proposed to be developed with other available sites to steer development towards the areas with the lowest flood risk. The Exception Test is required when the Sequential Test shows that it is not possible to locate development in an area with a lower risk of flooding. This is required for the following developments:

- Highly Vulnerable and in Flood Zone 2
- Essential Infrastructure in Flood Zone 3a or 3b
- More Vulnerable in Flood Zone 3a.

This Level 2 SFRA is structured to provide the basis for the application of this Test. Section 5.4.1 of the Level 1 SFRA provides further guidance on the application of the Sequential and Exception Tests.

The <u>NPPF</u> and <u>PPG</u> have both undergone revisions since the publication of the Level 1 SFRA. The <u>NPPF</u> was most recently revised in September 2023, and key changes were made in the 2021 revision which are relevant to this Level 2 SFRA. These changes include:

- Ensuring that plans consider all sources of flood risk.
- Incorporating appropriate flood resistant and resilient measures within developments to ensure they can quickly return to use after flood events without the need for significant refurbishment.
- Including the Flood Risk Vulnerability Classification within <u>Annex 3</u>.

The <u>PPG</u> was most recently updated in August 2022, which brought it in line with the latest updates in the 2021 <u>NPPF</u> revision. They key updates to the 2022 <u>PPG</u> include:

- The explicit inclusion of a climate change allowance within 'design flood' and the consideration of surface water flood risk.
- The Functional Floodplain starting point being redefined as the 3.3% annual exceedance probability (AEP) event (previously 5% AEP).
- The non-residential development lifetime starting point being set to 75 years.

The 2022 PPG also provided updated information on Sequential Testing, clarifying:

- When Sequential Tests should be applied, and when it is appropriate to move on to the Exception Test.
- Definitions of key terms such as 'reasonably available'.

- Roles and responsibilities, including an emphasis on LPAs to select an area of search and consider if the Sequential Test is passed.
- Approaches to improve efficiency and certainty.

Updated information on the Exception Test is also provided within the 2022 PPG, including:

- Definitions of relevant key terms (such as 'wider sustainability benefits to the community').
- A new section on how developments can demonstrate an overall reduction in flood risk.
- Demonstration of Flood Zone incompatibility, rather than showing whether the 'development is appropriate'.

1.2.2 Regional Policy

The latest version of the <u>Thames River Basin District (TRBD) Flood Risk Management Plan (FRMP)</u> was published in December 2022. This Plan outlines how risk management authorities (RMAs) will plan for and manage the risk of flooding to all communities within the TRBD during the current cycle, which runs from 2021 to 2027. Some of the measures set out to manage flood risk within this Plan include understanding available information such as flood risk maps, thereby including, but not limited to, mapping within this SFRA.

The <u>Thames Catchment Flood Management Plan (CFMP)</u> published by the EA in December 2009 serves to provide an overview of the present and future scale and extent of flooding within the River Thames catchment area. The Thames CFMP also outlines the preferred plan and strategic policies to manage flood risks sustainably over the next 50 to 100 years, considering climate change. This Plan identifies that there are opportunities to reduce flood risk through the appropriate design and layout of redevelopment, which will increase the resistance and resilience of properties to flood water and thus reduce the consequences of flooding.

This SFRA aids in understanding flood risk in Epsom and Ewell. It can be used by EEBC to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks.

1.2.3 Local Policy

EEBC's Local Plan was adopted in July 2007 and sets out the planning strategy and policies for the borough over the period 2007-2022. It sets out eight main issues that provide the focus of and objectives for the Local Plan, which include addressing a range of housing needs for a diverse and ageing population; managing the need for development with green belt constraints; and providing high environmental quality and provision of community facilities. The two overarching themes adopted by the Local Strategic Partnership are creating opportunities for all and supporting a society that recognises the needs of future generations.

As per Paragraph 167 of the revised <u>NPPF</u>, local plans should consider the current and future impacts of climate change. EEBC is now preparing a new <u>Local Plan</u> which will do this through Policy S15 and Policy S17. These will be integrated in the SFRA into recommendations.

EEBC's new <u>Local Plan</u> will set out the policies for the borough over the period 2022-2040. It will set out nine objectives, including providing housing taking the borough's constraints into account, protecting new development through the implementation of the necessary infrastructure and reducing the impact of the borough on climate change. This SFRA will aid in achieving some of the objectives set out in the new Local Plan.

1.2.4 Flood Zones

The Environment Agency (EA) have defined Flood Zones to show the probability of fluvial and / or tidal flooding. These Flood Zones provide indicative flood risk information and are used as part of the planning process as a tool in the Sequential and Exception Tests. The fluvial / tidal Flood Zones are defined within the <u>PPG</u> 'Flood Risk and Coastal Change' (<u>Table 1</u>). There are, however, no areas in Epsom and Ewell which are tidally influenced. All Flood Zones included in this assessment are defined as follows:

- Fluvial Flood Zone 1 (Low Probability): Land having a less than 0.1% annual probability of river flooding.
- Fluvial Flood Zone 2 (Medium Probability): Land having between a 1% and 0.1% annual probability of river flooding.
- Fluvial Flood Zone 3a (High Probability): Land having a 1% or greater annual probability of river flooding.
- Fluvial Flood Zone 3b (Functional Floodplain): Land that is deemed to be at the greatest risk of flooding from rivers, and where water must flow or be stored during times of flood. This includes land that has an annual probability of flooding from rivers of 1 in 30 years or greater (≥3.3% AEP), and land that is designed to flood (such as a flood attenuation scheme).

<u>NB (for Fluvial Flood Zone 3b)</u>: A defended extent has been used for the River Mole and an undefended extent for the Hogsmill River as the defended 1 in 30 year extent was not available for the Hogsmill River at the time of writing this report. Should this become available at a later date then it is recommended that these are updated in line with the <u>PPG</u> guidance.

1.2.5 Vulnerability Classifications

The flood risk vulnerability classification that is required for the Sequential Test is outlined in <u>Annex 3 of</u> <u>the NPPF</u>. It is summarised in *Table 1.1*.

Table 1.1 Flood risk vulnerability classifications (as outlined in Annex 3 of the NPPF).

Ess	ential Infrastructure
•	Essential transport infrastructure which has to cross the area at risk. Essential utility infrastructure which has to be located in a flood risk area for operational reasons e.g., infrastructure for electricity supply (including generation, storage and distribution systems). Wind turbines / solar farms.
	Highly Vulnerable
•	Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding. Emergency dispersal points. Basement dwellings. Caravans, mobile homes and park homes intended for permanent residential use. Installations requiring hazardous substances consent.
	More Vulnerable
•	Hospitals. Residential institutions such as care homes, children's homes, social services homes, prisons and hostels. Buildings used for dwelling houses, student residence, drinking establishments, nightclubs and hotels. Non–residential uses for health services, nurseries and educational establishments. Landfill and sites used for waste management facilities for hazardous waste.
	Holiday or short-let caravans and camping sites (subject to a specific warning/evacuation plan).



Less Vulnerable

- Police, ambulance and fire stations which are not required to be operational during flooding.
- Buildings used for shops; financial, professional, and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the More Vulnerable class; and assembly and leisure.
- Land and buildings used for agriculture and forestry.
- Waste treatment (except landfill and hazardous waste facilities).
- Minerals working and processing (except for sand and gravel working).
- Water treatment works which do not need to remain operational during times of flood.
- Sewage treatment works (with adequate pollution control measures to manage sewage during flooding).
- Car parks.

Water Compatible

- Flood control infrastructure.
- Water transmission infrastructure and pumping stations.
- Sewage transmission infrastructure and pumping stations.
- Sand and gravel working.
- Docks, marinas and wharves.
- Navigation facilities.
- Ministry of Defence installations.
- Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location.
- Water-based recreation (excluding sleeping accommodation).
- Lifeguard and coastguard stations.
- Amenity open space, nature conservation and biodiversity, outdoor sports and recreation and essential facilities such as changing rooms.
- Essential ancillary sleeping or residential accommodation for staff required by uses in this category, subject to a specific warning and evacuation plan.

1.2.6 Flood Risk Vulnerability and Flood Zone Compatibility

The <u>PPG Flood risk vulnerability and Flood Zone 'incompatibility' table</u> provides guidance on the types of development that may be considered as suitable within each Flood Zone. It sets out some circumstances where the Exception Test will need to be applied following the Sequential Test. This is shown in *Table 1.2*.

Table 1.2 Flood risk vullerability and Flood Zone incompatibility .					
	Flood Risk Vulnerability Classification				
Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	\checkmark	\checkmark	\checkmark	\checkmark	V
Zone 2	V	Exception Test Required	✓	✓	V
Zone 3a	Exception Test Required †	Х	Exception Test Required	✓	√
Zone 3b	Exception Test Required *	Х	Х	Х	√*

Table 1.2 Flood risk vulnerability and Flood Zone 'incompatibility'.



	Кеу		
✓	Development is appropriate		
Х	Development should not be permitted		
+	In Flood Zone 3a Essential Infrastructure should be designed and constructed to remain operation and safe in times of flood		
*	 In Flood Zone 3b Essential Infrastructure that has passed the Exception Test, and Water Compatible uses, should be designed and constructed to: Remain operational and safe for users in time of flood. Result in no net loss of floodplain storage. Not impede water flows and not increase flood risk elsewhere. 		



2 Site Assessments

2.1 Purpose

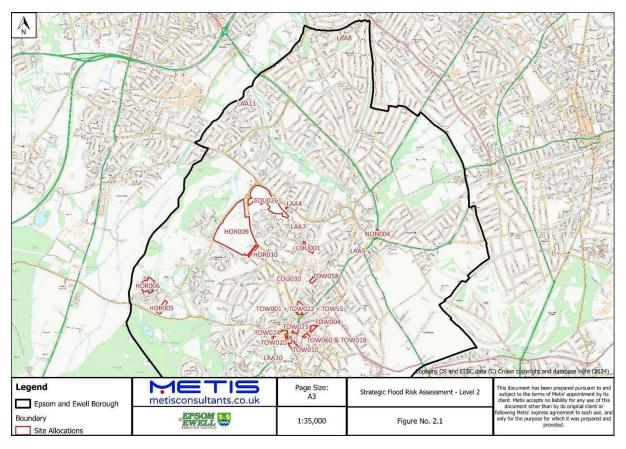
The Site Assessments completed as a part of this Level 2 SFRA have two main purposes:

- Help LPAs apply the Sequential Test so that development is directed to areas that are at lowest risk of flooding.
- Provide the information needed to apply the Exception Test, checking whether a development can be built in a higher flood risk area.

The Site Assessments also provide recommendations and considerations for LPAs and prospective developers, to be used in conjunction with the guidance provided in Section 5 of the Level 1 SFRA and *Section 4* of this document. For further information on the Level 2 SFRA methodology, refer to *Section 3* of this document.

2.2 Locations Assessed

22 sites were assessed as part of this Level 2 SFRA. These are listed in *Table 2.1* and mapped in *Figure 2.1*, which is also shown in *Appendix C*. NB: no assessed site allocations are within the southern third of the borough.







Site ID	Site Name	Proposed Use	Area (ha)
TOW024	Ashley Centre and Global House	Mixed use (including residential)	3.19
TOW020	Finachem House, 2-4 Ashley Road	Housing and commercial space	0.12
COU030	Blenheim House, 1 Blenheim Road	Housing/mixed (employment)	0.41
TOW058	Wilsons (Site 3)	Residential/mixed/employment	0.67
TOW010	Swail House	Residential	1.05
TOW021	Town Hall	Residential	0.74
TOW060 &	Police, Ambulance Station & Clinic	Residential (care home) – planning	0.64
TOW018	Fonce, Ambulance Station & Chine	permission; residential	0.04
TOW004	Depot Rd and Upper High Street	Residential and decked car park	1.24
HOR006	Land at West Park (North)	Residential	3.77
HOR005	Land at West Park Hospital Site (South)	Housing, health care	1.80
HOR009	Horton Farm	Housing, education	37.90
HOR010	Chantilly Way	Housing/Flats	0.70
COU026	Hook Road Arena	Housing, leisure	13.74
NON004	N004 Hatch Furlong Nursey Housing		0.52
COU001	Gibraltar Crescent Employment		1.59
TOW001 & TOW022 & TOW55	SGN & Depot Road & 20 Hook Rd	Mixed use (housing, leisure, commercial)	2.09
LAA4	Richards Field Car Park	Residential	0.07
LAA5	Esso Express, 26 Reigate Road	Residential	0.25
LAA7	Garages at Somerset Close & Westmorland Close	Residential	0.10
LAA8	46 The Avenue, Worcester Park	Residential	0.15
LAA10	64 South Street, Epsom	Residential	0.14
LAA11	A11 Crane Court/Rowden Rd (Garage) Residential		0.19

Table 2.1 Summary of site allocations.



3 Methodology

3.1 Site Selection

A high-level Screening Assessment was undertaken on 40 sites during the production of the Level 1 SFRA to determine whether a Site Assessment was required (*Appendix A*). The following criteria was used to determine whether a Site Assessment was required:

"A Site Assessment is recommended where the extent of Flood Zone 2, Flood Zone 3a (fluvial), Flood Zone 3b (fluvial) and / or the Main River 1% AEP +35% climate change scenario) is greater than 0.0049% of the site area, and the RoFSW 1 in 1000-year extent exceeds 10% of the site."

For the 1 in 1000-year extent, 10% was chosen as a reasonable minimum percentage to assess the sites that are at risk of surface water flooding. This was deemed to represent both a precautionary and proportionate threshold, and whilst each site needs to be considered individually, employing a threshold of 10% should mean that there is sufficient space within the site to design the layout such as to avoid the need to locate the most vulnerable aspects of the development within the RoFSW 1 in 1000 year extent. There are 18 sites that are not identified as requiring a Site Assessment as the RoFSW 1 in 1000 year extent is below 10% coverage of the site, however, the risk of flooding at these sites should still be considered. These can be identified in the Screening Assessment (*Appendix A*).

Based on the aforementioned assessment criteria, 22 sites were identified to require a Site Assessment. 20 sites were triggered by surface water flood risk, and 2 sites were triggered by both fluvial flood risk and surface water flood risk.

3.2 Analysis

The Site Assessments were carried out using datasets provided by the EA, Thames Water Utilities Limited (TWUL) and EEBC, as well as data obtained from the Level 1 SFRA. Predicted flooding from surface water, sewer, fluvial, groundwater and artificial sources were analysed using the predicted proportion of each flood risk type within each site. The assessments for fluvial and surface water flood risks are based on the Flood Zones defined in the Level 1 SFRA. These are outlines of the predicted flood extents in both defended and undefended scenarios. The Flood Zones definitions are outlined in *Section 1.2.1*. The flood hazard rating (HR) used in the Site Assessments can be interpreted as shown in *Table 3.1*.

Hazard	Rating	Definition
Low	0.5 ≥ HR <	Caution – Flood Zone with shallow flowing water or deep standing water
	0.75	
Moderate	0.75 ≥ HR ≤	Dangerous for some (i.e. children) – Danger: Flood Zone with deep or fast
	1.25	flowing water
Significant	1.25 > HR ≤	Dangerous for most people – Danger: Flood Zone with deep fast flowing
	2.0	water
Extreme	HR > 2.0	Dangerous for all – Extreme danger: Flood Zone with deep fast flowing
		water

Table 3.1 Surface water flood risk hazard categories.



3.3 Assessment Template

Site Assessments were conducted on a specifically designed proforma. The sections included are summarised in *Table 3.2*.

Section	Contents		
Current and proposed use	Development use of each site assessed		
Current and proposed vulnerability classification	Identified the sites vulnerability classification as outlined in <i>Section 1.2.2</i> For sites which may support a variety of different uses, the vulnerability classification is identified based on the most vulnerable use.		
Risk summary	Percentage of the site area under each risk level for different types of flooding		
Flood defences	Identifies if the site benefits from any fluvial flood defences		
Flood Warning Areas	Identifies if the EA flood warning service is available at the site		
Risk assessment	Data on risk from each flooding source, including flood depth, speed, hazard, duration, etc.		
Flood mechanisms	For each flood source, how flood water behaves within the site		
Site access / egress routes	Where flood-safe entry and exit routes should be located		
Mitigation requirements	For each flood source, a list of mitigation measures to alleviate the flood risk for potential developments at the site. To be used in conjunction with the guidance provided in Tables 5-1, 5-2 of the Level 1 SFRA.		
Safety of development	Analysis of how secure the development is against future flooding, including climate change considerations. This section also identifies if the site can be developed based on Exception Test criteria.		

Seven site-specific maps are appended to each Site Assessment proforma (*Appendix B*). These are summarised in *Table 3.3*.

Table 3.3 Summary of maps.

Number	Figure	Description
1	Fluvial Flood Depth (1% AEP + 35% Climate Change Allowance Event)	Provides the maximum flood depth for the fluvial defended 1% AEP + 35% climate change flood event. Data was extracted from EA models. The 35% climate change event was chosen to review the maximum fluvial flood depth at the sites as it is closest to the 'higher' allowance <u>peak river flow allowance</u> for the London Management Catchment.
2	Fluvial Flood Hazard (1% AEP + 35% Climate Change Allowance Event)	Provides the maximum flood hazard for the fluvial defended 1% AEP + 35% climate change flood event. Data was extracted from EA models. The 35% climate change allowance was used.
3	Surface Water Flood Depth (1% AEP Rainfall Event)	Provides the predicted surface water flood depth across a site using EA RoFSW data for a 1% AEP event.
4	Surface Water Flood Hazard (1% AEP Rainfall Event)	Provides information on the predicted hazard of surface water flooding, based on EA RoFSW mapping for a 1% AEP event. Details about how hazard can be interpreted are shown in <i>Table 3.1</i> .



Number	Figure	Description
5	Sewer Flooding Records	Provides the sewer flood incidences recorded by TWUL at four-digit postcode resolution. This includes records from when incidents were first captured in the database up until 26/02/2024, when it was received from TWUL.
6	Areas Susceptible to Groundwater Flooding	Provides the strategic scale map of groundwater flood areas on a 1km grid. Data was extracted from EA models.
7	Reservoir Flood Risk - Wet day	Provides the individual flood extents for all large, raised reservoirs in the event that they were to fail and release the water held on a "wet day" when local rivers had already overflowed their banks. Data was extracted from EA models.

3.4 Data Sources

Different datasets were used in this assessment, a description of these datasets, their purpose and their source are outlined in *Table 3.4*.

Category	File name	Description	Data source	Purpose
	Basemap	Polygons of streets, buildings, and other features in the area.	Ordnance Survey (OS) Master Map	Map creation.
	Epsom and Ewell borough boundary	Polygon demarcating the borough boundary.	OS Open Data	Defining study area; geographical boundary for other data needed.
Base map	Statutory Main River Map	Line files showing the watercourses in the borough.	EA Web Map Service (WMS)	Determining locations of watercourses.
	Site Allocations for SFRA Suitable LAA sites 5-19 units	Polygons giving outlines of 40 proposed development sites in the borough.	EEBC 2024	Conducting screening and site level assessments.
Digital Terrain Model	LiDAR	Raster containing ground elevation data.	EA 2024	Determining low elevation areas susceptible to surface water flooding.
Flood defences	Reduction_I n_Risk_Of_F looding_Fro m_Rivers_A nd_Sea	Polygons showing the areas that have reduced flood risk from rivers and sea due to the presence of flood defences.	EA WMS	Analysing how flood defences affect current and future fluvial flooding.

Table 3.4 Datasets used in the Site Assessments.



Category	File name	Description	Data source	Purpose
Flood Warning Areas	Flood_Warni ng_Areas	Polygon showing the areas where the EA Warning Service is available.	EA WMS	Determining if site users can sign up to the EA flood warning service.
Groundwater	Areas_Susce ptible_to _Groundwat er_Flood	Provides strategic scale map of areas susceptible to groundwater flooding on a 1km grid.	EA 2024	Analysing current groundwater flood risk.
	Flood_Zone _2	Polygons showing land with annual probability of river flooding between 1% and 0.1%.	EA 2024	Prioritising sites for assessment.
	Flood_Zone _3	Polygons showing land having a 1% or greater annual probability of river flooding.	EA 2024	
Flood Map for Planning	Flood_Zone _3b	Mole, and an undetended layer for		Prioritising sites for assessment.
Risk of Flooding from Surface Water (RoFSW)	RoFSW_1inX X_ Extent RoFSW_1inX X_ Depth RoFSW_1inX X_ Hazard	Polygons showing flood extent, depth, and hazard values for rainfall scenarios with a 3.33% AEP, 1% AEP and 0.1% AEP chance of occurring in any given year. Hazard calculated from flood depth and velocity.	EA 2024	Prioritising sites for assessment; Analysing current and future surface water flood risk; Creating surface water flood risk mitigation plan.
Risk of Flooding from Reservoirs	Reservoir_Fl ood_Extent_ Wet_Day	Map showing the largest area that might be flooded if a reservoir were to fail and release the water it holds on a wet day i.e. when rivers are at capacity.	EA 2024	Analysing current flood risk from reservoir breach.
Sewer flood records	Epsom and Ewell Sewer Flooding Records 26- 2-2024 REDACTED	Database of historic sewer flooding incidents by four-digit postcode.	TWUL 2024	Sewer flood risk assessment.



Category	File name	Description	Data source	Purpose
Rivers	Hogsmill River	Data from EA-generated model of Hogsmill River.	EA 2015	Fluvial flood risk assessment (current and future); Determining climate Change allowance extents; Creating fluvial flood risk mitigation plan;
	River Mole	Data from EA-generated model of River Mole.	EA 2017	Applying Exception Test.



4 General Requirements

Table 4.1 outlines the general requirements that all the sites within this Level 2 SFRA must follow according to the <u>NPPF</u>. They have been referenced in the individual Site Assessments (*Appendix B*) to make it clear where they are appropriate to be applied to the site. Further information on the mitigation requirements can be found in Tables 5-1 and 5-2 of the Level 1 SFRA. These set out the requirements for all developments (Flood Zones 1, 2, 3a and 3b) and individual sites (from groundwater, sewer and artificial sources) as per the <u>NPPF</u>.

A climate change allowance of 35% has been used to set out the recommendations. This allowance is used for master planning purposes only. Developers submitting planning applications should refer to the <u>Flood risk assessments (FRAs): climate change allowances</u> guidance.

No.	Mitigation Requirement	Applicable Area
4.1	There should be no net loss of floodplain storage within new developments. Only Essential Infrastructure (subject to the Exception Test) and Water Compatible infrastructure are permitted.	Flood Zone 3b
4.2	Flood storage compensation needs to be provided if permissible development decreases the volume of a fluvial floodplain or surface water flood area. The compensatory storage provided must equal or exceed the storage lost to ensure there will be no net loss of flood storage.	Flood Zone 3b and Flood Zone 3a, and the fluvial flood risk extent for the 1 in 100 year (1% AEP) plus climate change allowance (which covers parts of Flood Zone 2)
4.3	Flood Warning and Emergency Plans need to feature measures to manage residual and actual flood risk before, during, and after a flood, reducing the potential human impact of any flood event and making developments as resilient to flooding as possible. Key considerations can be found in the <u>PPG</u> . Cohesive emergency planning at site-specific and strategic level is essential to minimise the potential impact of an increased flood risk resulting from climate change and urban development. EEBC's <u>Emergency Planning webpages</u> and the Borough <u>Emergency Plan</u> (2023) detail the emergency situations that EEBC are prepared to deal with and their statutory duties during emergencies.	All
4.4	Residual risk should be mitigated through flood resilient / resistant designs and emergency planning to make sure the proper measures are in place to offer protection.	Entire area at risk
4.5	Development sites within 8m of a non-tidal main river, flood defence structure or culvert may require a Flood Risk Activity Permit.	8m buffer area around non-tidal main rivers
4.6	Development sites may require an approved ordinary watercourse consent.	Near ordinary watercourses

Table 4.1 General mitigation requirements for the site allocations.

4.7	All basement rooms must have internal access and egress to a higher floor above the design flood level which can be utilised as part of emergency evacuation procedures.	Flood Zone 3a, Flood Zone 2
4.8	As part of any assessment for basement dwellings, evidence needs to be submitted to confirm the local water table level.	Flood Zone 3a, Flood Zone 2, Flood Zone 1
4.9	Finished ground floor levels must be set at 300mm above the 1 in 100-year (1% AEP) event (with a suitable climate change allowance) for any new 'Essential Infrastructure', 'Highly Vulnerable', 'More Vulnerable' and 'Less Vulnerable' development, and for any change of use developments that increase the vulnerability classification.	All



Appendix A – Screening Assessment



Appendix B – Site Assessments

- TOW024 Ashley Centre and Global House
- TOW020 Finachem House, 2-4 Ashley Road
- COU030 Blenheim House, 1 Blenheim Road
- TOW058 Wilsons (Site 3)
- TOW010 Swail House
- TOW021 Town Hall
- TOW060 & TOW018 Police, Ambulance Station & Clinic
- TOW004 Depot Rd and Upper High Street
- HOR006 Land at West Park (North)
- HOR005 Land at West Park Hospital Site (South)
- HOR009 Horton Farm
- HOR010 Chantilly Way
- COU026 Hook Road Arena
- NON004 Hatch Furlong Nursery
- COU001 Gibraltar Crescent
- TOW001 + TOW022 + TOW55 SGN + Depot Road + 20 Hook Rd
- LAA4 Richards Field Car Park
- LAA5 Esso Express, 26 Reigate Road
- LAA7 Garages at Somerset Close & Westmorland Close
- LAA8 46 The Avenue, Worcester Park
- LAA10 64 South Street, Epsom
- LAA11 Crane Court/Rowden Rd (Garage)



Appendix C – Locations Assessed



					SITE ASSESSMENT - Gibra	alter Cresce	int				
Address: Gibraltar	Crescent, Ep	osom, KT19		Area:	1.59 Ha						
				Site Refere	nce: COU001			Current Ris	k Summary	,	
						Fi	uvial / Tid	al	6	iroundwat	ter
	Current Use	urrent Use			Proposed Use	FZ2	19.28	% of Site	<25	0	% of
						FZ3a	5.98	% of Site	25-50	100	% of
	Open land				Employment	FZ3b	1.4	% of Site	50-75	0	% of
						Su	rface Wat	er	>75	0	% of
						1 in 30*	1.18	% of Site		Artificial	
Current Vu	Inerability C	Classification	า		Proposed Vulnerability Classification	1 in 100*	2.13	% of Site	Reservoir	No	Atr
						1 in 1000*	32.24	% of Site	INC3CI VOII	NO	
Water-co	mpatible de	velopment			Less Vulnerable			Sewer F	looding		
						No. Inci	dents with	nin the pred	ominant po	stcode	1
						* return period	ds for potent	tial flood even	ts		
					FLUVIAL / TIDAL						
Ri	sk Assessme	ent (Defende									
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Description of Flood Mechanism	Site	Access / Eg	gress			N
Time of onset	00.00	00.00	00.00	Hrs	 The site is at risk of flooding from the 	Safe access a	•			 Only wat 	
Min. Depth	0.00	0.00	0.00	m	Hogsmill River which flows in a northerly	should be dir		-		Test) are p	
Max. Depth	1.52	1.77	2.02	m	direction along the western site boundary.	Road toward				be no incre	
Max. Velocity	0.67	0.71	0.78	m/s	• The western edge of the site is at risk of flooding in the 1 in 100 year flood event.	northwest of flooding is no				which is lo functional	
Max Flood Level	31.92	32.19	32.45	m AOD	Climate change is predicted to increase the		n predicted			 Self-cont 	
Max Ground Level	36.96	36.96	36.96	m AOD	flood extent, as well as the maximum flood					permitted	
Min Ground Level	30.71	30.71	30.71	m AOD	depth, hazard and velocity.					• A FRA m	
Max Flood Hazard	3.12	3.60	4.01	N/A	 The site is predicted to be partially flooded 					• Include a	appropr
Duration of Flood	>27.75	>27.75	>27.75	Hrs	from the onset along the western edge of the					address pr	
The +35% Climate Change A					site and will remain flooded for in excess of					 See SFRA 	
	essment (Un				27.75 hours.					4.5 and 4.9	
Parameter	FZ3a	*FZ3a+CC	Units							 Develop Site user 	
Speed of inundation	· · ·	N/A	Hrs							- Sile user	5 511UUI
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m m/c								
Max. Velocity	N/A	N/A	m/s		Figure 1. Eluviel Flood Doubh Mar	Figure 2 - El					
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map	Figure 2 - Fl		u mazaro ivia	<u>ih</u>		
Duration of Flood	N/A	N/A	Hrs								
	Dial. A				SURFACE WATER	X					
Daramatar	-	essment	1 in 1000	Unite	Site Access / Earses	D.C.	tigation		oquironer	+c	1
Parameter Min Dopth	1 in 30	1 in 100 0.00 - 0.15	1 in 1000 < 0.15	Units	Site Access / Egress Safe access routes should be directed towards	Developme	-	Flood Risk R	-		4
Min. Depth				m	Longmead Road and across to Sefton Road	area of the si			-		
Max. Depth	> 1.20	> 1.20	> 1.20	m m/c	where there is a lower risk of flooding.	flooding.					
Max. Velocity	1.00 - 2.00		> 2.00	m/s		See also SF	RA - Level 2	Report Sect	ion 4 mitigat	ion	
Max. Hazard	1.25 - 2.00		> 2.00	N/A		requirement		-	-		
The 1 in 1000 extent represents			-	risk		stipulations.					
The site is currently at ris	cription of Fl			ng the							
vestern edge of the site.	on of suirdle We	ater noouling, p	an ticularly alo								
Longmead Road to the w	vest of the site	is predicted to	be at high risk	of surface							
a											
vater flooding.											

• Climate change is not predicted to increase flood depths, velocity or hazard.

Figure 3 - RoFSW Flood Depth Map

Figure 4 - RoFSW Flood Hazard Map





Flood Defences

Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is available at this site.

tigation / FRA Requirements

atible or essential uses (subject to the Exception in FZ3b (the western edge of the site). There can esidential units in FZ3b. Development in this area ove the design flood level is still designated as n.

- sement dwellings and bedrooms are not ne western area of the site).
- bmitted as part of a planning application.
- te flood resistance or resilience measures to lood depths.
- Report mitigation requirement numbers 4.3, 4.4, ner development stipulations.
- mergency and Evacuation Plan for the site.
- be signed up to EA's Flood Warning Service.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

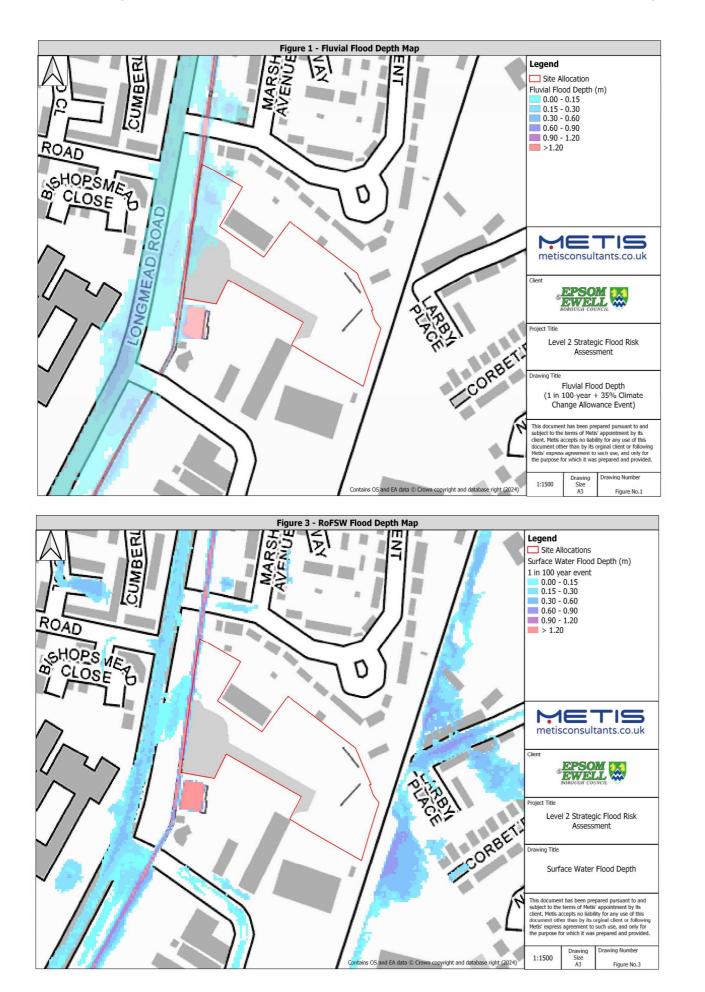
• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

• Ground investigations are required to confirm whether infiltration SuDS are suitable.

	SITE ASSESSMENT - Gibralter Crescent	
SEWER	GROUNDWATER	A
Risk Assessment	Risk Assessment	Risk
 The site falls within a postcode area where there are 14 reported 	• The site is classified as having >=25% <50% susceptibility to groundwater flooding.	This site is not at risk of flooding from
flood incidents from sewer flooding.	• The site is underlain by River Terrace superficial deposits and Lambeth Group	
• The site is assumed to be served by separate surface water and foul	bedrock geology.	
sewer networks.		
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood N
Mitigation Requirements	Mitigation Requirements	Mitigatio
 Applicant must consult with TWUL to confirm if the development site 	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted at t
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change conside	Safety of Development	
 Yes. The development must use surface water dramage techniques to ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Ne See SFRA - Level 2 Report mitigation requirement number 4.2 for com 		attenuation. Green urainage initastructu
 The development land use is changing from open land to employmen 	e and will flood risk increase? t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr	
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop	
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop	
	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr	
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and and and and and and and and and a	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr	roperly.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with	roperly.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	roperly.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	roperly. Policy S15 in EEBC's draft Local Plan.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent Yes. The Hogsmill River runs along the western edge of the site, there 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	roperly. Policy S15 in EEBC's draft Local Plan.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent Yes. The Hogsmill River runs along the western edge of the site, there Watercourse. 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	roperly. Policy S15 in EEBC's draft Local Plan.
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consention Yes. The Hogsmill River runs along the western edge of the site, there Watercourse. F. Can the site pass the Exception Test? 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9. fore any activity being undertaken within 8m of the bank of the river will require a flood	roperly. Policy S15 in EEBC's draft Local Plan. I risk activity permit. The development is r
 The development land use is changing from open land to employmen The site is currently open land, therefore an increase in impermeable D. How can the development reduce risk overall? Direct development away from the western edge of the site. Safe access routes should be directed towards Longmead Road and ad Ensure that there is no net increase in surface water runoff and include By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent? Yes. The Hogsmill River runs along the western edge of the site, there Watercourse. F. Can the site pass the Exception Test? No development is permitted along the western edge of the site in Flore 	t. The vulnerability classification is therefore increasing from 'Water-compatible develop area coverage on site will increase surface water runoff and flood risk if not managed pr cross to Sefton Road where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	roperly. Policy S15 in EEBC's draft Local Plan. I risk activity permit. The development is r npatible development' or 'Essential Infrast

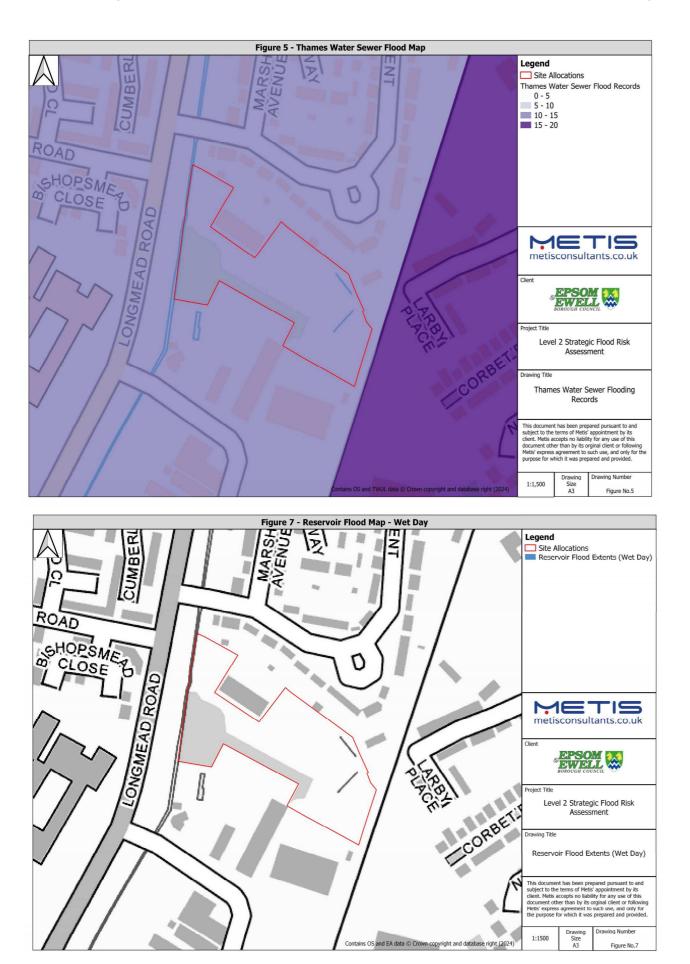


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Flooding Map			
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Crown copyright and database right (2024)	1:1500	Drawing Size A3	Drawing Number Figure No.6

						SITE ASSESSMENT	- Hook I	Road Are	na				
Address: Hook Ro	ad, Epsom, k	(T19 8QG		Area:	13.74 Ha								
			Site Refere	nce: COU02	6				Current Ris	sk Summary	1		
								FI	uvial / Tid	lal		Groundwat	ter
	Current Use	9			Prop	oosed Use		FZ2	0	% of Site	<25	0	% of Si
					-			FZ3a	0	% of Site	25-50	0	% of Si
	Greenfield				Resider	tial / Leisure		FZ3b	0	% of Site	50-75	0	% of Si
								Su	rface Wat	ter	>75	100	% of Si
								1 in 30*	0.14	% of Site		Artificial	
Current Vu	Inerability C	lassificatior	1		Proposed Vulne	rability Classification		1 in 100*	1.64	% of Site			
								1 in 1000*	10.2	% of Site	Reservoir	NO	At risk
L	ess Vulnerat	ole			More	Vulnerable				Sewer I	Flooding		
								No. Inci	dents witl	nin the prec	dominant po	ostcode	6
								* return perio	ds for poten	tial flood ever	nts		
						FLUVI	AL / TIDAL						
Ri	sk Assessme	nt (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	De	scription of Flood Mechanism		Site	Access / E	gress			Mit
Speed of inundation	N/A	N/A	N/A	Hrs	N/A - No	o fluvial / tidal risk is predicted at		N/A - No flu	vial / tida	l risk is		N/A - No t	fluvial / ti
Min. Depth	N/A	N/A	N/A	m	this site.			predicted at	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	N/A	N/A	N/A	Hrs									
The +35% Climate Change A													
	essment (Un	-											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation		N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		Figure 1	- Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard M	<u>ap</u>		
Duration of Flood	N/A	N/A	Hrs										
						SURFA	CE WATER						
	Risk Ass					au 1-	_			-		-	-
Parameter	1 in 30		1 in 1000	Units		Site Access / Egress			-		Requiremen		4
Min. Depth	0.15 - 0.30					ess and egress routes should be		Developm			-		
Max. Depth	0.15 - 0.30					to the north east of the site		southern an				e there is	
Max. Velocity	0.00 - 0.25					Chessington Road where there i	sa	higher risk o			•		
Max. Hazard	0.50 - 0.75					sk of flooding.		• See also S		-		-	
The 1 in 1000 annual probability				d impact of curren	t risk			requiremen		4.4 for furt	ner develop	oment	
	cription of Fl							stipulations					
 The site is at high risk 		-		-									
southern and eastern a ow to medium risk.	reas of the site	e. IVIUST OF The	e eastern are	as are at									
 Climate change will in 	crease the ma	aximum surfa	ce water der	oth.									
maximum velocity and					L	- RoFSW Flood Depth Map		L		d Hazard N			





Flood Defences

Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

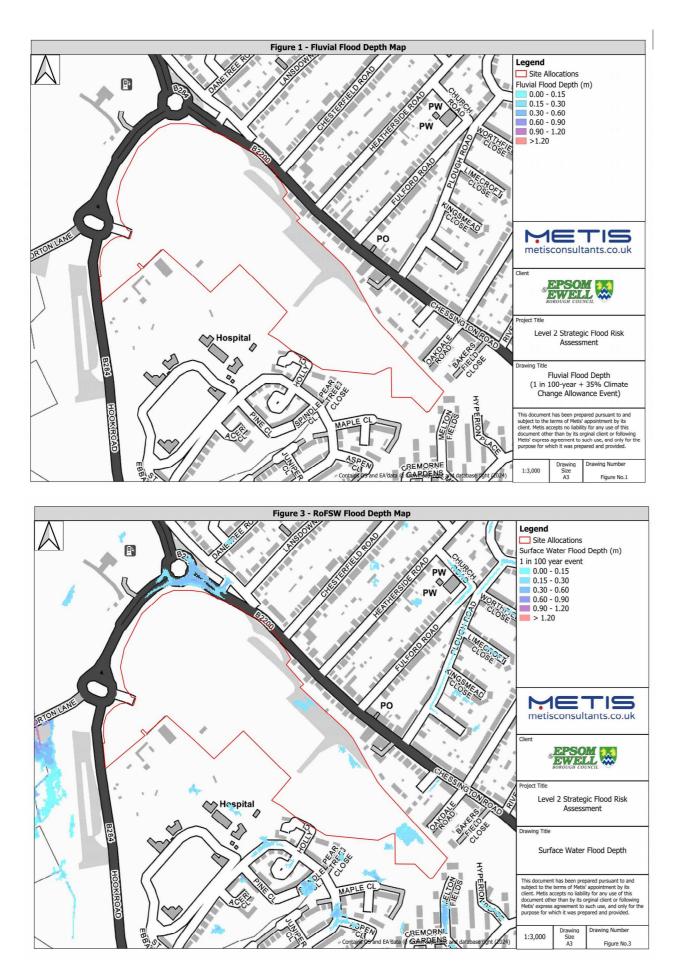
 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

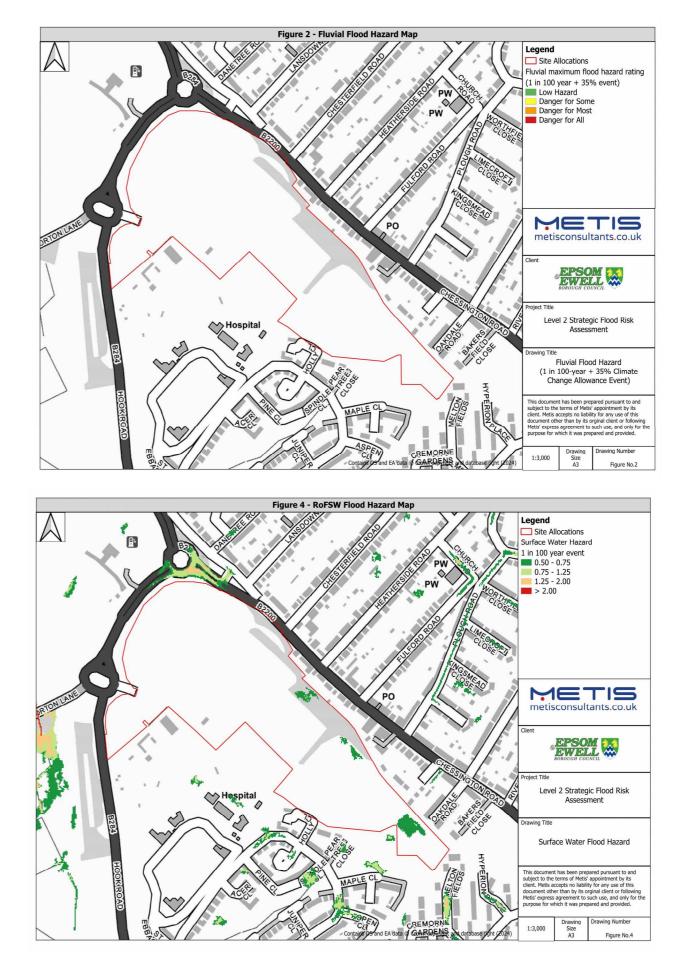
• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

• Ground investigations are required to confirm whether infiltration SuDS are suitable.

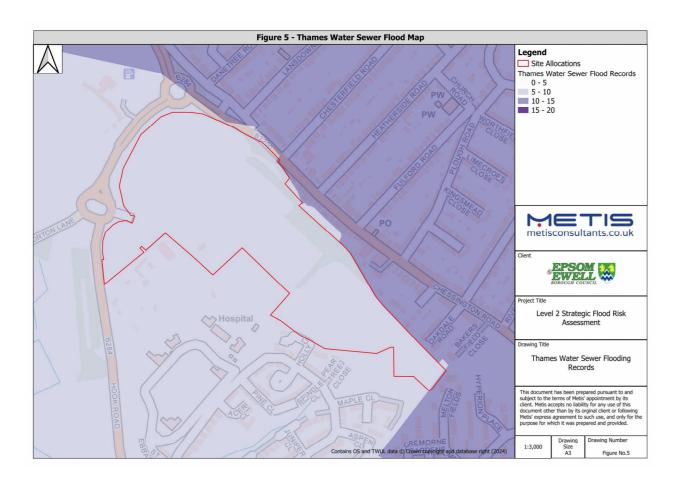
SEWER Risk Assessment • The site falls within a postcode area where there are 6 reported flood incidents from sewer flooding. • The site is served by foul and surface water sewers. There is also a combined sewer to the southeast of the site. Figure 5 - Thames Water Sewer Flood Map Mitigation Requirements • Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections.	GROUNDWATER Risk Assessment • The site is classified as having >75% susceptibility to groundwater flooding. • The site is underlain by River Terrace superficial deposits and London Clay Formation bedrock geology. Figure 6 - Areas Susceptible to Groundwater Flooding Map Mitigation Requirements	ARTIFICIAL Risk Assessment • This site is not at risk of flooding from reservoirs. Figure 7 - Outline Reservoir Flood Map
 The site is served by foul and surface water sewers. There is also a combined sewer to the southeast of the site. Figure 5 - Thames Water Sewer Flood Map Mitigation Requirements Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer 	The site is underlain by River Terrace superficial deposits and London Clay Formation bedrock geology. <u>Figure 6 - Areas Susceptible to Groundwater Flooding Map</u>	
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Figure 5 - Thames Water Sewer Flood Map Mitigation Requirements • Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer		Figure 7 Outline Reservoir Flood Man
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Mitigation Requirements Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer 		
• Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer	I IVIItigation Requirements	
has historically flooded. TWUL must agree to any proposed sewer	 Applicant should carry out a screening study (as a minimum) to establish if there 	Mitigation Requirements N/A - No reservoir risk is predicted at this site.
	are any subterranean flood risk issues that may require further investigation.	N/A - No reservoir risk is predicted at this site.
	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change consid	Safety of Development	
• The site is mostly covered by green space.	ge and will flood risk increase? the 'More vulnerable' classification, as residential and leisure uses have been proposed. e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	area coverage on site will increase surface water runoff and flood risk if not
D. How can the development reduce risk overall?		
 Direct development away from southern and eastern areas of the side 	te.	
Safe access routes should be directed to the north east of the site to		
	ude SuDS or an alternative sustainable approach to manage surface water to comply with P	olicy S15 in EEBC's draft Local Plan.
By complying with SFRA - Level 2 Report mitigation requirement nu	mbers 4.3, 4.4, 4.5 and 4.9.	
E. Will development require a flood risk permit/watercourse conser	t?	
No. The site is not located near a Main River or Ordinary Watercour	se.	
F. Can the site pass the Exception Test?		
• The Exception Test is not required as the site is not located within F	ood Zone 3a.	

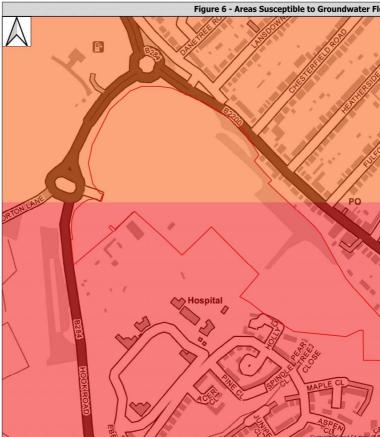


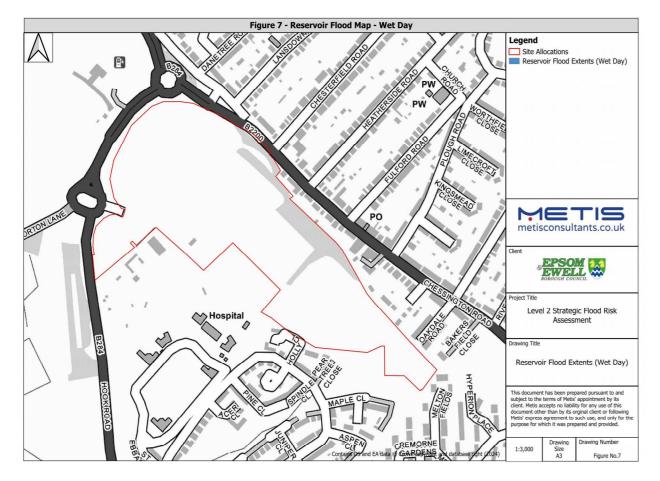










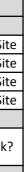




Flooding Map					
PW P		er Flood I % <50% % <75%	Risk		
	metis Client	consult	TIS tants.co.uk		
	Project Title Level 2 Strategic Flood Risk Assessment Drawing Title Areas Susceptible to Groundwater Flooding This document has been prepared pursuant to and subject to the terms of Netis' appointment by Its dictine. Netis accepts no liability for any use of thisi document other than but use, and only for the purpose for which it was prepared and provided.				
HYPERION					
GREMORNE GRARDENE and database right (2024)	1:3,000	Drawing Size A3	Drawing Number Figure No.6		

					SITE ASSESSMENT -	Bienneim Hou	se, 1 Bien	neim R	oad			
Address: 1 Blenhe	im Road, Eps	som, KT19		Area:	0.41 Ha							
	9AP			Site Refere	ce: COU030				Current Ris	k Summary	1	
							Flu	uvial / Tid	al	G	Groundwat	er
	Current Use	9			Proposed Use		FZ2	97.72	% of Site	<25	0	%
							FZ3a	96.11	% of Site	25-50	0	%
Office	es, gym, ware	ehouse			Housing / mixed-se (employment)		FZ3b 95.39 % of Site 50-75 100		100	%		
								rface Wat		>75	0	%
							1 in 30*	53.31	% of Site		Artificial	_
Current Vu	Inerability C	lassificatio	า		Proposed Vulnerability Classification		1 in 100*	59.54	% of Site	Reservoir	No	
							1 in 1000*	97.36	% of Site			
L	ess Vulnerat	ble			More Vulnerable				Sewer F	-		_
									in the pred		stcode	
							* return period	ls for potent	ial flood even	ts		
						FLUVIAL / TIDAL						
	sk Assessme									1		_
Parameter	FZ3b	FZ3a	*FZ3a+CC		Description of Flood Mec			Access / Eg	-			
Time of onset	05.00	04.45	04.15	Hrs	• The site is at risk of flooding from		Safe access an	•			• Only wat	
Min. Depth	0.00	0.01	0.01	m	Hogsmill River which flows to the the site.	northwest of	should be dire				Test) are po no increase	
Max. Depth	0.45	0.49	0.53	m	The majority of the site is at risk	of flooding in	site where fluvial flooding is not which is lo functiona • Self-com permittee					
Max. Velocity	0.43	0.38	0.38	m/s	the 1 in 100 year flood event.							
Max Flood Level	37.89	37.91	37.93	m AOD	 Climate change is predicted to in 	ncrease the			 Self-cont 			
Nax Ground Level	38.14	38.14	38.14	m AOD	flood extent, as well as the flood of				permitted i	in F		
/lin Ground Level	37.44	37.44	37.44	m AOD	and velocity.				• A FRA mເ	ust		
Max Flood Hazard	1.24	1.26	1.29	N/A	 The site will flood in the early me 						 Include a 	
Duration of Flood	>22.75	>23	>23.5	Hrs	starting in the western areas of th						address pre	
ne +35% Climate Change A				1	remain flooded for in excess of 22	.75 hours.					See SFRA	
Parameter	essment (Un FZ3a	*FZ3a+CC	Units								4.5 and 4.9 • Develop a	
beed of inundation	N/A	N/A	Hrs								Site users	
Min. Depth	N/A N/A	N/A N/A	m m	•								
Max. Depth	N/A N/A	N/A N/A										
Max. Velocity	N/A N/A	N/A N/A	m m/s	•								
•	-	-			Figure 1 - Fluvial Flood Depth N	lan	Figure 2 - Flu	Ivial Eloca	Hazard Ma			
Max. Hazard Duration of Flood	N/A N/A	N/A N/A	N/A Hrs			nap	inguie 2 - Fil			<u>u</u> P		
	IN/A	IN/A		<u> </u>		SURFACE WATER						
	Rick Acc	essment				SURFACE WATER						
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egres	s	Mit	igation - I	lood Risk R	equiremen	nts	1
Min. Depth	0.00 - 0.15			m	Safe access routes should be direct		Developme	-		-		1
Max. Depth	0.30 - 0.60				the part of Blenheim Road to the		surrounding t			-		
Max. Velocity	1.00 - 2.00			m/s	the site where there is a lower risk		of surface wa	-	-		5	
Max. Hazard	1.25 - 2.00			N/A		-	See also SFF		-	ion 4 mitigat	ion	
e 1 in 1000 extent represents	ļ						requirement	number 4.4	for further	developmen	t	
	cription of Fl		-	C I I J K			stipulations.					
he site is currently at hi rounding the existing b art of Blenheim Road to face water flooding.	gh risk of surfa uilding. o the northeast	ce water flood of the site is p	ing, in all area redicted to be	e at risk from								
Climate change is predic zard in the 1 in 1000 yea		the maximum	TIOOD Depth,	velocity and	Figure 3 - RoFSW Flood Depth I	Man	Figure 4 - Ro	FSW Floo	d Hazard M	an		L
2010 IN CIC 1 IN 1000 YES	a section.					νιαμ	1 igure 4 - KC	0011 996 1100		uμ		





Flood Defences

Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is available at this site.

gation / FRA Requirements

ible or essential uses (subject to the Exception n FZ3b (the majority of the site). There can be ntial units in FZ3b. Development in this area ve the design flood level is still designated as

- ment dwellings and bedrooms are not majority of the site).
- nitted as part of a planning application.
- e flood resistance or resilience measures to od depths.
- eport mitigation requirement numbers 4.3, 4.4, r development stipulations.
- ergency and Evacuation Plan for the site.
- signed up to EA's Flood Warning Service.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

• Ground investigations are required to confirm whether infiltration SuDS are suitable.

SEWER	GROUNDWATER	ARTIF
Risk Assessment	Risk Assessment	Risk Asse
• The site falls within a postcode area where there are 14 reported	 The site is classified as having >=50% <75% susceptibility to groundwater flooding. 	 This site is not at risk of flooding from res
flood incidents from sewer flooding.	 The site is underlain by River Terrace superficial deposits and London Clay 	
• The site is assumed to be served by separate surface water and foul	Formation bedrock geology.	
sewer networks.		
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Re
Applicant must consult with TWUL to confirm if the development site	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted at this si
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
	Safety of Development	

A. Can the development be future proofed for climate change considerations?

• Yes. See SFRA - Level 2 Report mitigation requirement numbers 4.4 and 4.9 for the flood resistant / resilient building stipulations and required finished floor levels.

B. Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?

• Yes. The development must use surface water drainage techniques to manage surface water runoff onsite through above ground SuDS and / or below ground attenuation. Green drainage infrastruc ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's New Local Plan.

• See SFRA - Level 2 Report mitigation requirement number 4.2 for compensatory flood storage stipulations.

C. What is the cumulative impact of the development land use change and will flood risk increase?

• The development land use is changing from offices / gym / warehouse to housing and employment. The vulnerability classification is therefore increasing from 'Less Vulnerable' to 'More Vulnerable'

• The site is currently a brownfield site which is mostly impermeable, therefore opportunities to reduce surface water runoff by increasing the amount of green space at the site should be explored.

• Development must mitigate any increase in impermeable area to the site with flood plain compensation and runoff storage to prevent any increase in flood risk. An increase in impermeable area co runoff and flood risk if not managed properly.

D. How can the development reduce risk overall?

• By not proposing residential development for this site and only proposing 'Water-compatible development' or 'Essential Infrastructure' uses.

• Safe access routes should be directed towards the part of Blenheim Road to the south east of the site where there is a lower risk of flooding.

• Ensure that there is no net increase in surface water runoff and include SuDS or an alternative sustainable approach to manage surface water to comply with Policy S15 in EEBC's draft Local Plan.

• By complying with SFRA - Level 2 Report mitigation requirement numbers 4.3, 4.4, 4.5 and 4.9.

E. Will development require a flood risk permit/watercourse consent?

• No. The site is not within 8m of a Main River or in the vicinity of an Ordinary Watercourse.

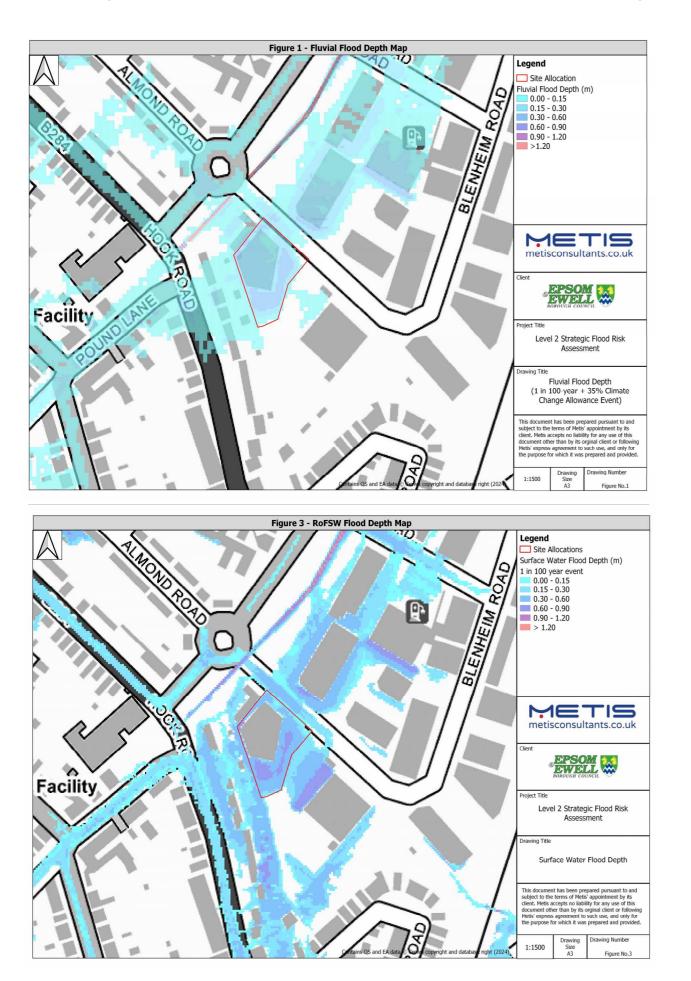
F. Can the site pass the Exception Test?

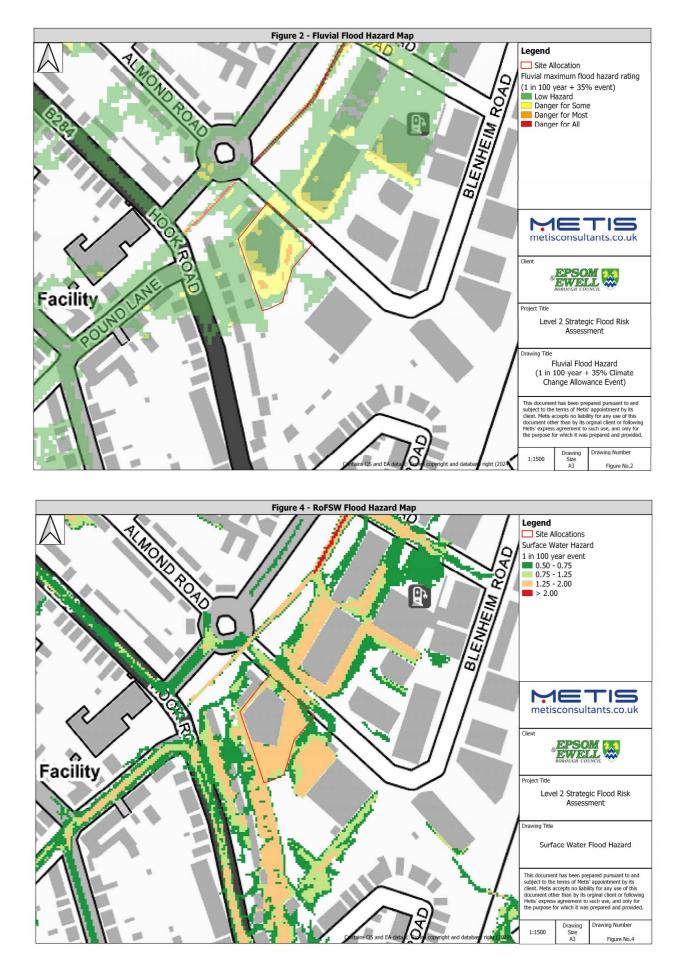
• No development other than 'Water-compatible development' or 'Essential Infrastructure' (subject to the Exception Test) is permitted in the majority of the site in Flood Zone 3b. There can be no inc the proposed use of 'More Vulnerable' development is unlikely to be acceptable at this site.

• A change of use for the current building would also not be permitted if the proposed use would be 'More Vulnerable', given that the building curtilage is also located within Flood Zone 3b.

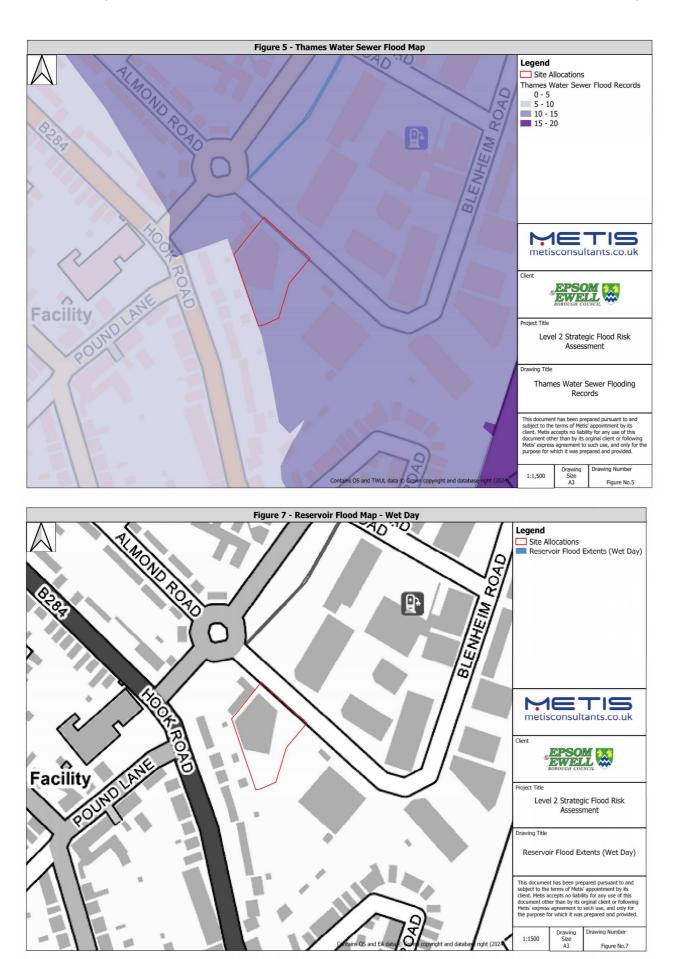


ARTIFICIAL	
sk Assessment rom reservoirs.	
d Map	
tion Requirements at this site.	
at this site.	
cture should be prioritised to provide wider	
' development.	
overage on site will increase surface water	
crease in residential units in FZ3b. Therefore	













er Flooding Map				
	Legend Site Allocations Groundwater Flood Risk			
ROAD	< 25% >= 25% <50% >= 50% <75% >= 75%			
BLENHEIM				
	metisconsultants.co.uk			
	Client			
	Project Title Level 2 Strategic Flood Risk Assessment			
	Drawing Title Areas Susceptible to Groundwater Flooding This document has been prepared pursuant to and subject to the terms of Metis' appointment by its client. Metis accepts no lability for any use of this document other than by its orginal client or following Metis' express agreement to such use, and only for the purpose for which it was prepared and provided.			
a E Codyn copyright and database right (2024)	1:1500 Drawing Drawing Number Size A3 Figure No.6			

Address: Richmond	l Crescent. E	psom. KT19		Area:	1.8 Ha						
	8PB	, .		Site Refere			Current Risk Summary		v		
			I			Fi	uvial / Tid	lal	(Groundwate	er
	Current Us	se			Proposed Use	FZ2	0	% of Site	<25	100	% of 9
						FZ3a	0	% of Site	25-50	0	% of 9
Exist	ing patient f	acilities			Housing, health care	FZ3b	0	% of Site	50-75	0	% of :
						Su	rface Wat	ter	>75	0	% of
						1 in 30*	3.65	% of Site		Artificial	
Current V	ulnerability	Classificatio	า		Proposed Vulnerability Classification	1 in 100*	5.2	% of Site	Reservoir	No	At ri
_						1 in 1000*	11.2	% of Site			
r	More Vulner	able			More Vulnerable			Sewer F	<u> </u>		T -
						I		hin the prede		ostcode	6
						-	ds for poten	tial flood event	ts		
	lick Account	ont (Dofond	od)		FLUVIAL / TIDA						
Parameter	FZ3b	ent (Defende FZ3a	ed) *FZ3a+CC	Units	Description of Flood Mechanism	Site	Access / E	grass			D (
peed of inundation	N/A	N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted at	N/A - No flu		-		N/A - No fl	N V leivul
Min. Depth	N/A N/A	N/A N/A	N/A N/A	m	this site.	predicted at	-	111212			iuvidi /
Max. Depth	N/A N/A	N/A N/A	N/A N/A	m			cons site.				
Max. Velocity	N/A	N/A	N/A	m/s							
Max Flood Level	N/A	N/A	N/A	m AOD							
Max Ground Level	N/A	N/A	N/A	m AOD							
Min Ground Level	N/A	N/A	N/A	m AOD							
Max Flood Hazard	N/A	N/A	N/A	N/A							
Duration of Flood	N/A	N/A	N/A	Hrs							
The +35% Climate Change A											
	essment (Ur	· · · ·									
Parameter	FZ3a	*FZ3a+CC	Units								
peed of inundation		N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth Max. Velocity	N/A N/A	N/A N/A	m m/s								
-			-		Figure 1 - Fluvial Flood Depth Map	Figuro 2 - El		d Hazard Ma			
Max. Hazard Duration of Flood	N/A N/A	N/A N/A	N/A Hrs			<u>rigure 2 - ri</u>			<u>ip</u>		
	N/A	N/A	ПІЗ		SURFACE WATI	ED					
	Risk As	sessment			SONFACE WAT	LN					
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egress	Mi	tigation -	Flood Risk R	equireme	nts	1
Min. Depth		0.00 - 0.15	< 0.15	m	Safe access and egress routes should be		-	d be directed	•		1
Max. Depth		0.30 - 0.60		m	directed towards Christ Church Road to the	· ·		areas of the			
Max. Velocity		0.50 - 1.00		m/s	south of the site where there is a lower risk	higher risk o				-	
Max. Hazard	0.75 - 1.25	1.25 - 2.00	1.25 - 2.00	N/A	of flooding. Egress should not be directed	-		el 2 Report S	-	itigation	
he 1 in 1000 annual probability	extent represents	the potential climat	e change adjusted i	mpact of current	towards Richmond Crescent as there is	requiremen	t number	4.4 for furth	er develop	oment	
	•	Flood Mecha			flood risk in this area.	stipulations					
The site is at low to m			-	I							
eas of complex towar	-			e towards							
chmond Crescent is a Climate change is pre	-		-	onth and							
climate change is pre elocity at the site.		ease the maxi		pui allu							
					Figure 3 - RoFSW Flood Depth Map	Figure 4 - Re	SSW/ Floo	d Hazard M	an		



Flood Defences

There are no flood defences in the vicinity of the site.

Flood Warning Area

The EA Flood Warning Service is not available at this site

Aitigation / FRA Requirements

/ tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

• Ground investigations are required to confirm whether infiltration SuDS are suitable.

	SITE ASSESSMENT - Land at West Park Hospital Site	(South)
SEWER	GROUNDWATER	AR
Risk Assessment	Risk Assessment	Risk A
 The site falls within a postcode area where there are 6 reported flood incidents from sewer flooding. The site is served by separate surface water and foul sewer networks. 	 The site is classified as having < 25% susceptibility to groundwater flooding. The site is underlain by London Clay Formation - Clay and silt bedrock geology. 	This site is not risk of flooding from
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Ma
Mitigation Requirements	Mitigation Requirements	Mitigation
Applicant must consult with TWUL to confirm if the development site	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted a

• Applicant must consult with TWUL to conf m if the development site has historically flooded. TWUL must agree to any proposed sewer connections.

• Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development.

> PLANNING CONSIDERATIONS Safety of Development

are any subterranean flood risk issues that may require further investigation.

• If there is a potential level of impact, mitigation actions must be proposed.

• Must be prepared by a chartered professional or specialist.

A. Can the development be future proofed for climate change considerations?

• Yes. See SFRA - Level 2 Report mitigation requirement numbers 4.4 and 4.9 for the flood resistant / resilient building stipulations and required finished floor levels.

B. Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?

• Yes. The development must use surface water drainage techniques to manage surface water runoff onsite through above ground SuDS and / or below ground attenuation. Green drainage infrastruction of the second ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's New Local Plan.

C. What is the cumulative impact of the development land use change and will flood risk increase?

• The development land use is remaining at classification 'More Vulnerable', as residential uses have been proposed.

• The site is currently a brownfield site with some green areas. The development should therefore limit its impact on flood risk in the area and reduce runoff rates to as close to the greenfield runoff • Development must mitigate any increase in impermeable area to the site with runoff storage to prevent any increase in flood risk. An increase in impermeable area coverage on site will increase sur managed properly.

D. How can the development reduce risk overall?

• Direct development away from the southern and central areas of the site where there is higher risk of surface water flooding.

• Safe access and egress routes should be directed towards Christ Church Road to the south of the site where there is a lower risk of flooding. Egress should not be directed towards Richmond Crescer

• Ensure that there is no net increase in surface water runoff and include SuDS or an alternative sustainable approach to manage surface water to comply with Policy S15 in EEBC's draft Local Plan. • By complying with SFRA - Level 2 Report mitigation requirement numbers 4.3, 4.4, 4.5 and 4.9.

E. Will development require a flood risk permit/watercourse consent?

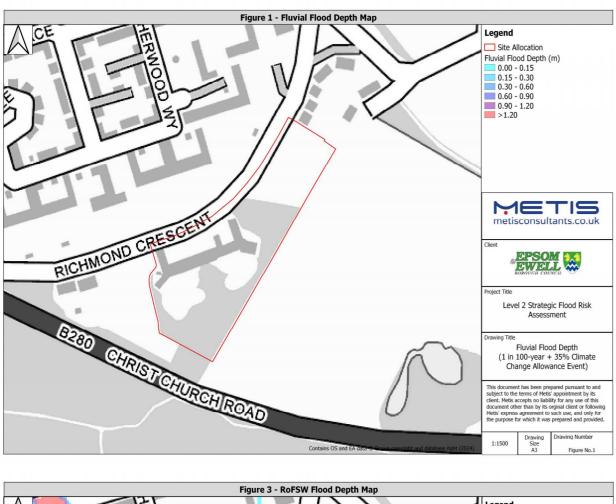
• No. The site is not located near a Main River or Ordinary Watercourse.

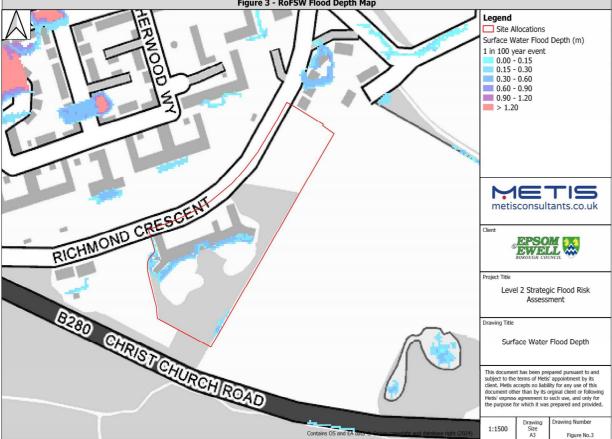
F. Can the site pass the Exception Test?

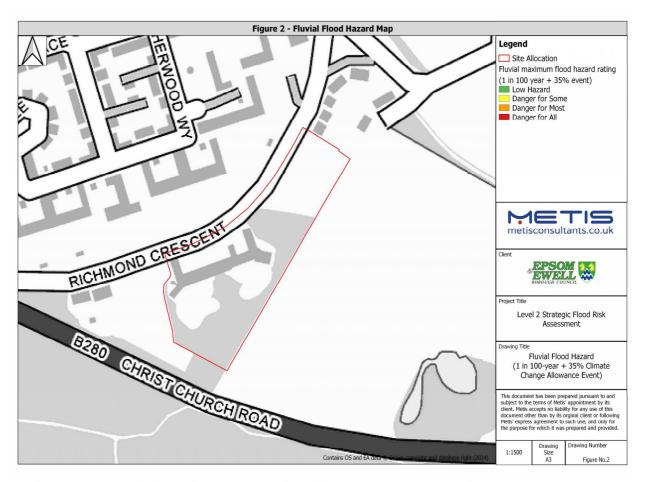
• Exception test not required as site is not located in Flood Zone 3a.



ARTIFICIAL
sk Assessment
from reservoirs.
d Map
tion Requirements
ed at this site.
cture should be prioritised to provide wider
rate as possible.
rface water runoff and flood risk if not
at as there is flood risk in this area
nt as there is flood risk in this area.



















Flooding Man			
Flooding Map		ter Flood F % 5% <50% 0% <75%	Risk
	Client		tants.co.uk
	Project Title Leve	l 2 Strateg Assess	ic Flood Risk ment
R	This documen subject to the client. Metis a document oth Metis' express	Flood t has been pre terms of Metis ccepts no liabil er than by its o agreement to	to Groundwater ing pared pursuant to and appointment by its ity for any use of this righinal client or following prepared and provided.
© Crown copyright and database right (2024)	1:1500	Drawing Size A3	Drawing Number Figure No.6

	psom, KT19 Current Us	0,0		Area:	3.77 Ha						
Exist	Current Lla			Site Reference: HOR006 Current R					k Summarı	,	
Exist	Current Lla			Sile Refere			uvial / Tid			/ Groundwate	or
Exist		0			Proposed Use	FZ2	0	% of Site	<25	100	% of
Exist	current 03					FZ3a	0	% of Site	25-50	0	% of
	ing patient f	acilities			Residential	FZ3b	0	% of Site	50-75	0	% of
	ing patient i	admired					rface Wat		>75	0	% of
						1 in 30*	1.52	% of Site		Artificial	1
Current Vi	ulnerability	Classificatio	า		Proposed Vulnerability Classification	1 in 100*	11	% of Site			
					· · ·	1 in 1000*	33.91	% of Site	Reservoir	Yes	Atr
Ν	Aore Vulner	able			More Vulnerable			Sewer F	looding	1	-
						No. Inci	dents with	in the pred		ostcode	
						* return period		•			4
					FLUVIAL / TID/		·				
R	isk Assessm	ent (Defend	ed)								
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Description of Flood Mechanism	Site A	Access / Eg	gress			ſ
peed of inundation	N/A	N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted at	N/A - No flu	vial / tidal	risk is		N/A - No f	luvial
Min. Depth	N/A	N/A	N/A	m	this site.	predicted at	t this site.				
Max. Depth	N/A	N/A	N/A	m							
Max. Velocity	N/A	N/A	N/A	m/s							
Max Flood Level	N/A	N/A	N/A	m AOD							
Max Ground Level	N/A	N/A	N/A	m AOD							
Min Ground Level	N/A	N/A	N/A	m AOD							
Max Flood Hazard	N/A	N/A	N/A	N/A							
Duration of Flood	N/A	N/A	N/A	Hrs							
The +35% Climate Change A				I							
	essment (Ur	· · · ·									
Parameter	FZ3a	*FZ3a+CC	Units								
peed of inundation	N/A	N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m m/s								
Max. Velocity	N/A	N/A	m/s		Figure 1 - Fluvial Flood Donth Man	Figure 2 - Fl		Llonord Ma			
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map	<u>rigure 2 - ri</u>			<u>ip</u>		
Duration of Flood	N/A	N/A	Hrs			- 0					
	Dick Ac	sessment			SURFACE WAT	EK					
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egress	Mit	tigation - I	Flood Risk R	oquiromor	ntc	1
Min. Depth		0.00 - 0.15	< 0.15	m	Safe access and egress routes should be	Developm	•		•		1
Max. Depth		0.30 - 0.60		m	directed to the east of the site along West	southern, ea					
Max. Velocity		1.00 - 2.00	> 2.00	m/s	Park Road where there is a lower risk of	there is high					
Max. Hazard		1.25 - 2.00	> 2.00	N/A	flooding. Egress should not be directed	See also S			-		
ne 1 in 1000 annual probability	ļ	L I				requiremen		-		-	
		lood Mecha			Farmside Place as there is significant flood	stipulations					
The site is at low to m	•			ne central,	risk in these areas.						
astern and southern a			-								
te are at risk of floodir	-		-								
Climate change is pre	dicted to incre	ease the maxi	mum flood de	pth, hazard							
nd velocity at the site.					Figure 3 - RoFSW Flood Depth Map	Figure 4 - Ro	oFSW Floo	d Hazard M	ар		-



There are no flood defences in the vicinity of the site.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Aitigation / FRA Requirements

/ tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

SEWER	GROUNDWATER	ARTI
Risk Assessment	Risk Assessment	Risk Ass
 The site falls within a postcode area where there are 6 	 The site is classified as having < 25% susceptibility to groundwater 	 This site is at risk of flooding from the
reported flood incidents from sewer flooding.	flooding.	reservoir.
• The site is served by separate surface water and foul sewer	• The site is underlain by London Clay Formation - Clay and silt bedrock	 The reservoir extent map predicts th
networks.	geology.	a wet day, the site will be at risk of floo
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation R
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	Propose appropriate and proportionate
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	A suitable emergency response plan sho
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	emergency warning system in the event of
• Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development.	 Must be prepared by a chartered professional or specialist. 	 Local Authority Emergency Planning Offi- reservoir failure emergency and evacuatio
	PLANNING CONSIDERATIONS	
	Safety of Development	

B. Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?

• Yes. The development must use surface water drainage techniques to manage surface water runoff onsite through above ground SuDS and / or below ground attenuation. Green drainage infrastructure should be prioritised to provide wider ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's New Local Plan.

C. What is the cumulative impact of the development land use change and will flood risk increase?

• The development land use is remaining at classification 'More Vulnerable', as residential uses have been proposed.

• The site is currently a brownfield site with hardstanding areas and little green space. This offers an opportunity to improve flood attenuation through the new development.

• Development must mitigate any increase in impermeable area to the site with runoff storage to prevent any increase in impermeable area coverage on site will increase surface water runoff and flood risk if not managed properly.

D. How can the development reduce risk overall?

• Direct development away from the central, eastern and southern areas of the site where there is higher risk of surface water flooding.

• Safe access and egress routes should be directed to the east of the site along West Park Road where there is a lower risk of flooding. Egress should not be directed towards Osborne Way, Miller Place or Farmside Place as there is significant flood risk in this area.

• Ensure that there is no net increase in surface water runoff and include SuDS or an alternative sustainable approach to manage surface water to comply with Policy S15 in EEBC's draft Local Plan. • By complying with SFRA - Level 2 Report mitigation requirement numbers 4.3, 4.4, 4.5 and 4.9.

E. Will development require a flood risk permit/watercourse consent?

• No. The site is not located near a Main River or Ordinary Watercourse.

F. Can the site pass the Exception Test?

• Exception test not required as site is not located in Flood Zone 3a.



TIFICIAL

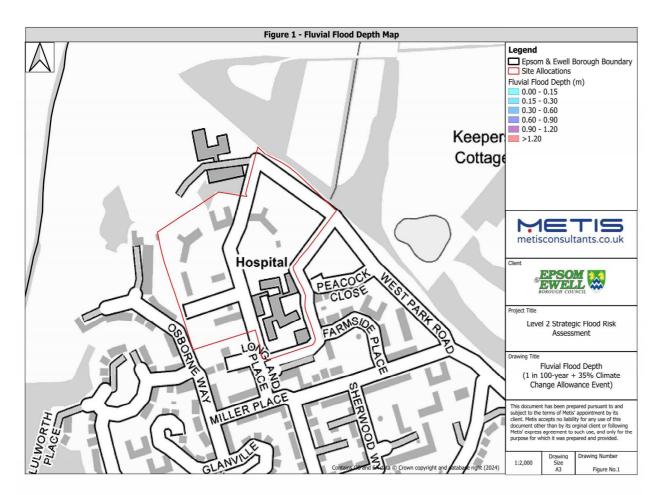
ssessment

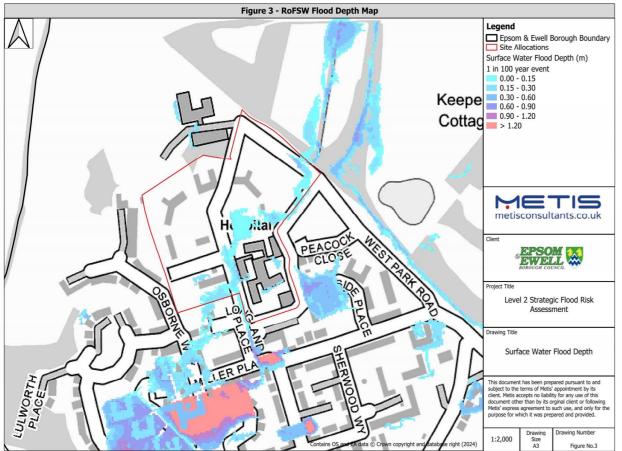
the Epsom Common Great Pond

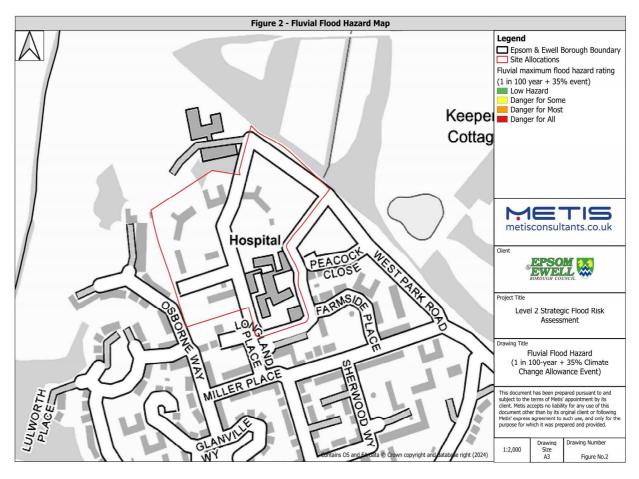
that if this reservoir were to breach on looding.

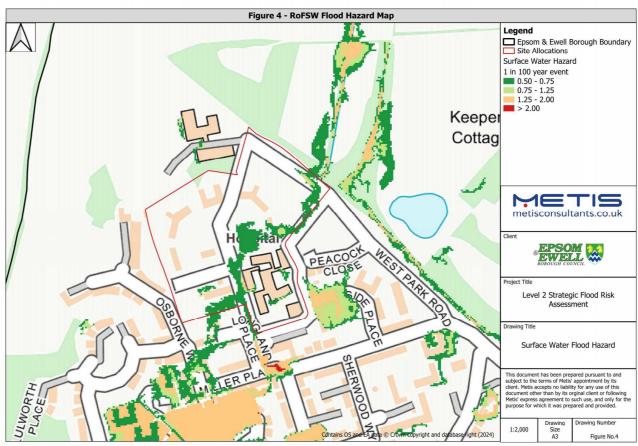
Requirements

e risk management measures. hould be put in place, including an of a reservoir flooding incident. fficers must be consulted to create a tion plan.

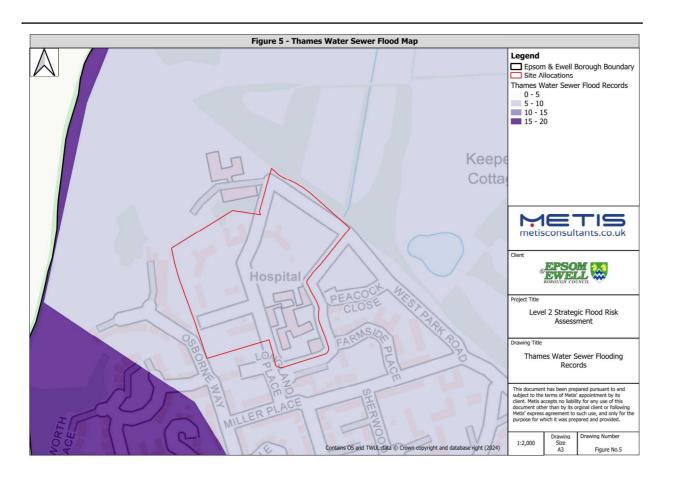


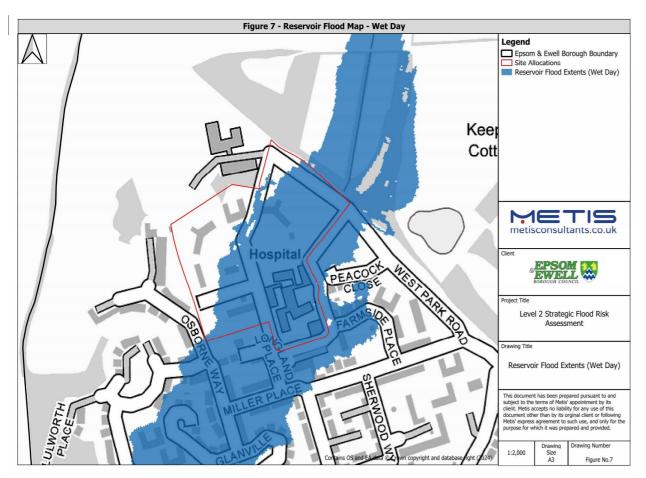
















Flooding Map			
Keepers Cottage	Groundwa < 25% >= 25	locations ter Flood F % % <50% 1% <75%	Sorough Boundary Risk
ART ROAD	Client	consult	TIS tants.co.uk
1924 ADD	Project Title	2 Strateg Assess	ic Flood Risk
VA	This document	Flood	bared pursuant to and
	subject to the client. Metis an document othe Metis' express	terms of Metis' ccepts no liabili er than by its o agreement to	appointment by its ty for any use of this rginal client or following such use, and only for the pared and provided.
© Crown copyright and database right (2024)	1:2,000	A3	Figure No.6

					SITE ASSESSMENT - Ho	ornton farm					
Address: Horton L	ane. Epsom.	KT19 8QQ		Area:	37.9 Ha						
	-, 1,	• •		Site Refere				Current Ris	k Summary	,	
			1			Fi	uvial / Tid		-	iroundwat	ter
	Current Us	e			Proposed Use	FZ2	0	% of Site	<25	54.91	% of Si
		-				FZ3a	0	% of Site	25-50	0	% of Si
Agriculture, farm	house, ridin	g school and	stables		Housing, education	FZ3b	0	% of Site	50-75	0	% of Si
0 ,	, ,	5			5.	Su	rface Wat	I	>75	45.09	% of Si
						1 in 30*	0.79	% of Site		Artificial	•
Current V	ulnerability (Classificatio	n		Proposed Vulnerability Classification	1 in 100*	2.56	% of Site	Deservit	NLa	
						1 in 1000*	13.03	% of Site	Reservoir	No	At risk
Ν	Aore Vulnera	able			More Vulnerable			Sewer F	looding		
						No. Inci	dents with	in the pred	ominant po	stcode	6
						* return perio	ds for poten	ial flood even	ts		•
					FLUVIAL / TIDA	L					
R	isk Assessmo	ent (Defend	ed)								
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Description of Flood Mechanism	Site	Access / E	gress			Mit
Speed of inundation	N/A	N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted at	N/A - No flu	vial / tidal	risk is		N/A - No 1	fluvial / ti
Min. Depth	N/A	N/A	N/A	m	this site.	predicted at	t this site.				
Max. Depth	N/A	N/A	N/A	m							
Max. Velocity	N/A	N/A	N/A	m/s							
Max Flood Level	N/A	N/A	N/A	m AOD							
Max Ground Level	N/A	N/A	N/A	m AOD							
Min Ground Level	N/A	N/A	N/A	m AOD							
Max Flood Hazard	N/A	N/A	N/A	N/A							
Duration of Flood	N/A	N/A	N/A	Hrs							
The +35% Climate Change A	llowance event is	reviewed	-								
Risk Ass	essment (Un	defended)	-								
Parameter	FZ3a	*FZ3a+CC	Units								
Speed of inundation	N/A	N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m								
Max. Velocity	N/A	N/A	m/s								
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map	Figure 2 - Fl	uvial Flood	Hazard Ma	<u>ip</u>		
Duration of Flood	N/A	N/A	Hrs								
	Diel: A				SURFACE WATE	R					
Deresset		sessment	1 10 1000	11-21					•	•-	
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egress		-	Flood Risk R	-		-
Min. Depth	0.00 - 0.15		< 0.15	m	Safe access and egress routes should be	Developm					
Max. Depth	0.60 - 0.90	> 1.20	> 1.20	m m	directed to the north east of the site out of	northern pa			nere is high	ier risk of	
Max. Velocity	1.00 - 2.00			m/s	Hollywood Park via Hook Road (B284)	surface wat			action 4	tigation	
Max. Hazard	1.25 - 2.00		> 2.00	N/A	where there is a lower risk of flooding.	See also S				-	
The 1 in 1000 annual probability		-		mpact of current r	Egress should not be directed towards the north west of the park or towards Hornton	requiremen		4.4 IOI TUITI	iei uevelop	ment	
The northern part of the maller areas at high risk. ortion of Chantilly Way to ooding.	Additionally, Ho o the south of t	of surface wate ornton Lane to he site is at hig	er flooding, with the west of the gh risk of surface	e site and a e water	Lane as there is significant flood risk in this area.	stipulations.					
 Climate change is predic 	ted to increase	the maximum	velocity of floo	ding.	Figure 3 - RoFSW Flood Depth Map	Figure 4 - Ro		d Hazard M			_
climate enange is predie											



Site	
Site	
Site	
Site	
isk?	

There are no flood defences in the vicinity of the site.

Flood Warning Area

The EA Flood Warning Service is not available at this site

Mitigation / FRA Requirements

/ tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Hornton farm	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
The majority of the site falls within a postcode area where	• The site is classified as being 54.91% <25% susceptibility to groundwater	This site is not risk of flooding from reservoirs.
there are 6 reported flood incidents from sewer flooding. A small	flooding and 45.09% >75% susceptibility to groundwater flooding.	This site is not tak of hooding from rescriving.
part of the site falls within a postcode area where there is one	The site is underlain by London Clay Formation - Clay and silt bedrock	
incident of sewer flooding.	geology. The eastern part of the site is underlain by River Terrace Deposits,	
• The site is served by separate surface water and foul sewer	and the remainder of the site has no superficial deposits.	
networks.	and the remainder of the site has no supericial deposits.	
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	N/A - NO TESETVOIL TISK IS predicted at this site.
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS Safety of Development	
A. Can the development be future proofed for climate change consid	· · ·	
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's No C. What is the cumulative impact of the development land use change The development land use is remaining at classification 'More Vulner The majority of the site is greenfield with only a small part of the site 	o manage surface water runoff onsite through above ground SuDS and / or below ground a ew Local Plan. e and will flood risk increase?	h the new development.
Hornton Lane as there is significant flood risk in this area.	the site out of Hollywood Park via Hook Road (B284) where there is a lower risk of floodir de SuDS or an alternative sustainable approach to manage surface water to comply with P	
 E. Will development require a flood risk permit/watercourse consent No. The site is not located near a Main River or Ordinary Watercours 		
 F. Can the site pass the Exception Test? Exception test not required as site is not located in Flood Zone 3a. 		

A. Can the development be future pro-

B. Can the development be designed s

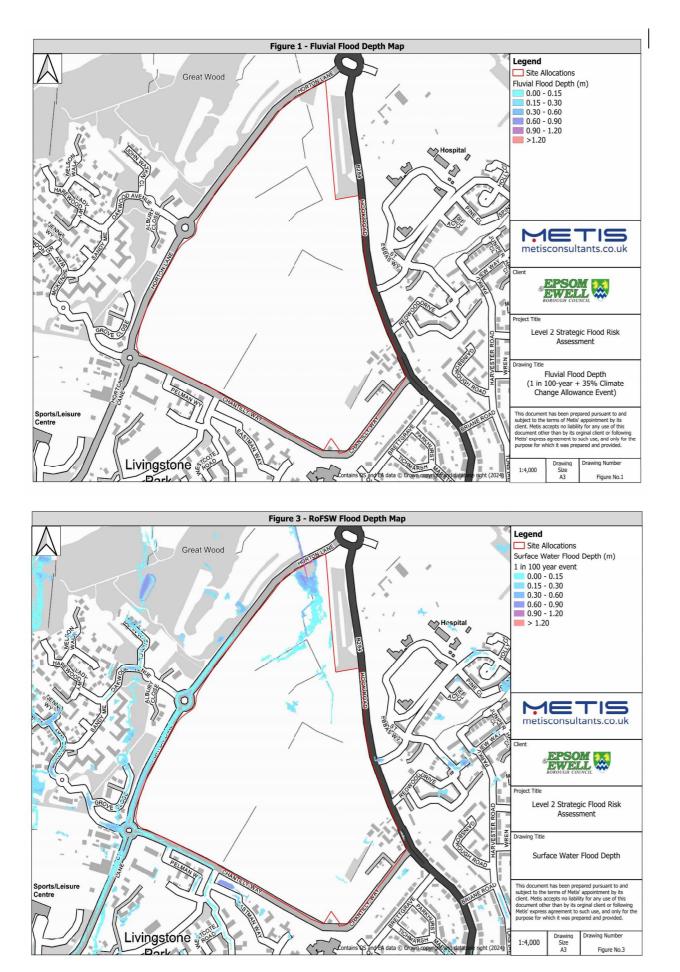
C. What is the cumulative impact of th

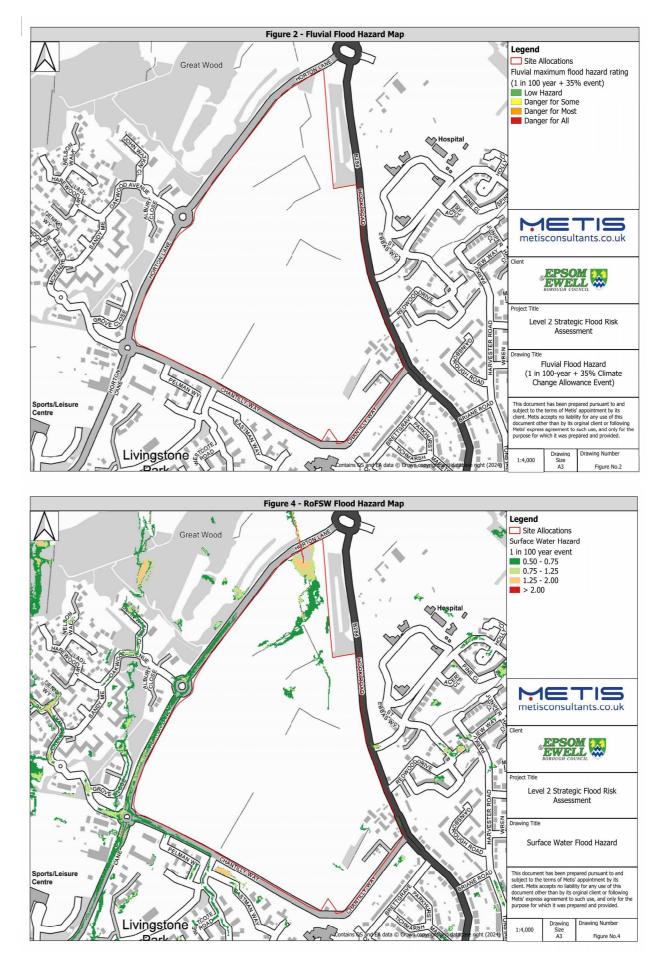
D. How can the development reduce ri

E. Will development require a flood ris

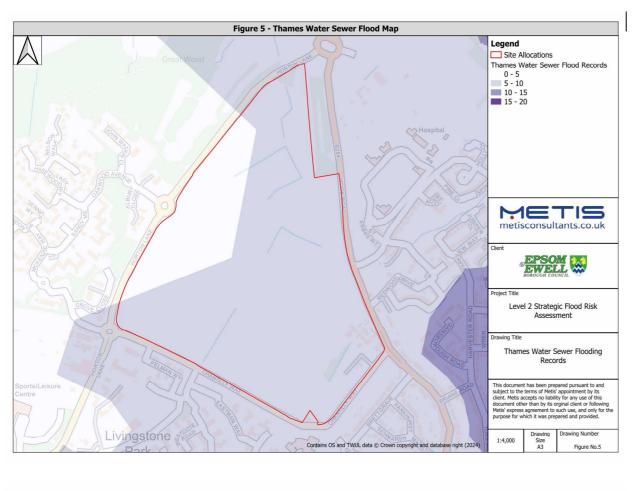
F. Can the site pass the Exception Test

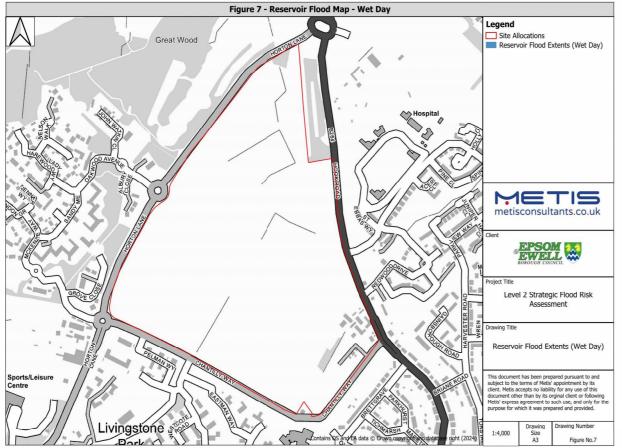


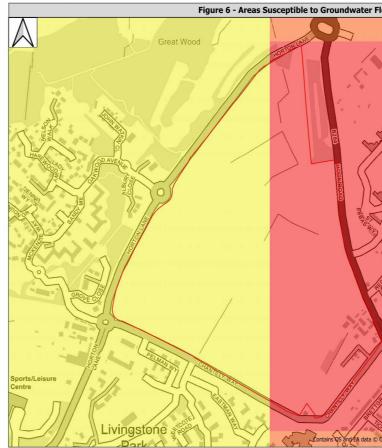














ooding Map	
	Legend Site Allocations Groundwater Flood Risk < 25% > = 25% <50% > = 50% <75% > = 75%
Hospital	
	Client
LER ROAD	Project Title Level 2 Strategic Flood Risk Assessment
A HARVEST	Drawing Title Areas Susceptible to Groundwater Flooding
and a second	This document has been prepared pursuant to and subject to the terms of Metis' appointment by its client. Metis accepts no liability for any use of this document other than by its orginal client or following Metis' express agreement to such use, and only for the purpose for which it was prepared and provided.
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					SITE ASSESSME	NT - Char	ntilly Way	,				
			1	I -	1							
Address: Chantilly	Way, Epsom	, KT19 8QY		Area:	0.7 Ha				Commont Dia		-	
				Site Refere	nce: HOR010				Current Ris			
	Current IIe	•			Dronocod Lico			uvial / Tid	% of Site		Groundwa	
	Current Us	e			Proposed Use	_	FZ2 FZ3a	0	% of Site		0	% of Si % of Si
	Greenfield				Residential		FZ3b	0	% of Site		0	% of Si
	Greenneid				Residential			rface Wat		>75	100	% of Si
							1 in 30*	1.49	% of Site		Artificia	
Current Vi	ulnerability (lassification			Proposed Vulnerability Classification		1 in 100*	3.96	% of Site			<u> </u>
current vi			•		Toposed vallerability classification		1 in 1000*	10.51	% of Site	-	NO	At ris
	Less Vulneral	hle			More Vulnerable			wer Flood		Incoci von		
									hin the pred	I Iominant no	ostcode	6
							* return perio				Jicouc	0
					FLUV	IAL / TIDAL	return perio					
R	isk Assessme	ent (Defende	ed)		1200							
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Description of Flood Mechanism		Site	Access / E	gress	1		Mit
Speed of inundation		N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted a	at	N/A - No flu		-	1	N/A - No	fluvial / ti
Min. Depth	N/A	N/A	N/A	m	this site.		predicted a					
Max. Depth	N/A	N/A	N/A	m								
Max. Velocity	N/A	N/A	N/A	m/s								
Max Flood Level	N/A	N/A	N/A	m AOD								
Max Ground Level	N/A	N/A	N/A	m AOD								
Min Ground Level	N/A	N/A	N/A	m AOD								
Max Flood Hazard	N/A	, N/A	, N/A	N/A								
Duration of Flood	N/A	N/A	, N/A	, Hrs								
* The +35% Climate Change	Allowance event i	s reviewed										
Risk Ass	essment (Un	defended)										
Parameter	FZ3a	*FZ3a+CC	Units									
Speed of inundation	N/A	N/A	Hrs									
Min. Depth	N/A	N/A	m									
Max. Depth	N/A	N/A	m									
Max. Velocity	N/A	N/A	m/s									
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard Ma	<u>ap</u>		
Duration of Flood	N/A	N/A	Hrs									
					SURF	ACE WATER						
		essment				_						_
Parameter	1 in 30	1 in 100	1 in 1000		Site Access / Egress			-	Flood Risk F	-		_
Min. Depth		0.15 - 0.30			Safe access and egress routes should be		Developm					
Max. Depth		0.30 - 0.60			directed to the west of the site towards		northern ar			there is hig	her risk of	F
Max. Velocity		0.25 - 0.50			Chantilly Way or Hook Road to the north		surface wat		•			
Max. Hazard	0.75 - 1.25	0.75 - 1.25	1.25 - 2.00	N/A	east where there is a lower risk of flood	ling.	See also S		-		-	
*The 1 in 1000 annual probability				d impact of currer	risk		requiremen		4.4 for furt	her develop	oment	
	cription of F						stipulations					
• The site is at high ri			ling, particu	larly at a								
amall area in the new	th of the site											
		maximum	surface wat	erdenth I			1					
Climate change will												
				or soptil	Figure 3 - RoFSW Flood Depth Map		Figure 4 - R		1			





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

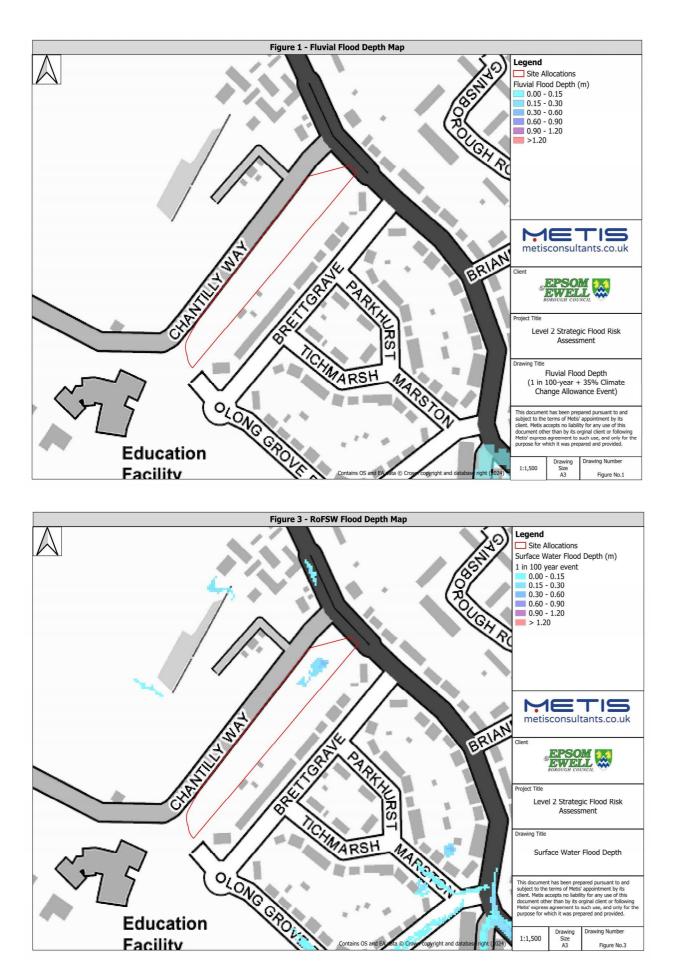
Mitigation - Surface Water Drainage

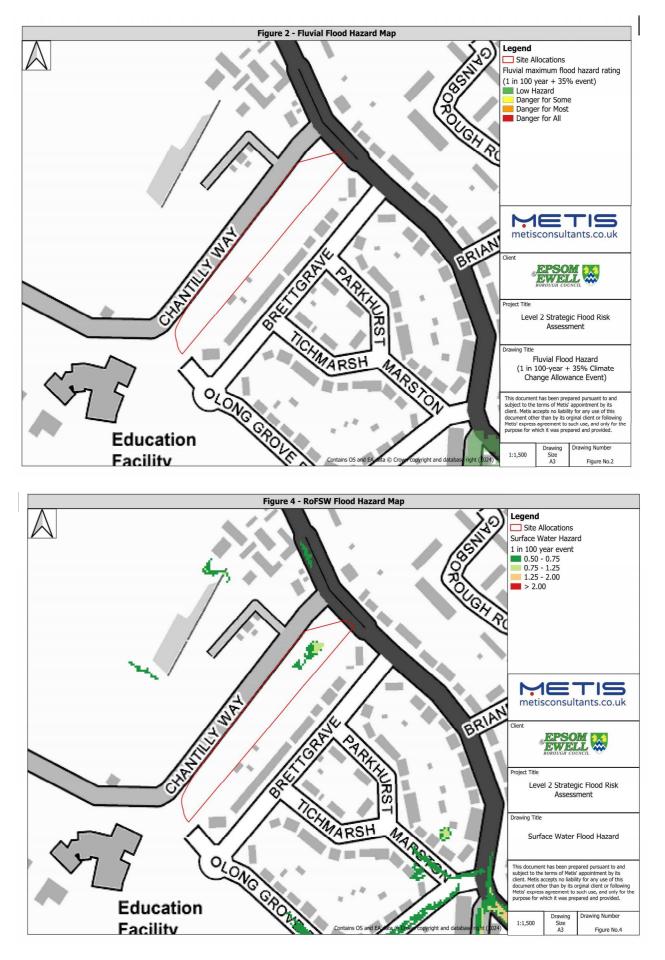
 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

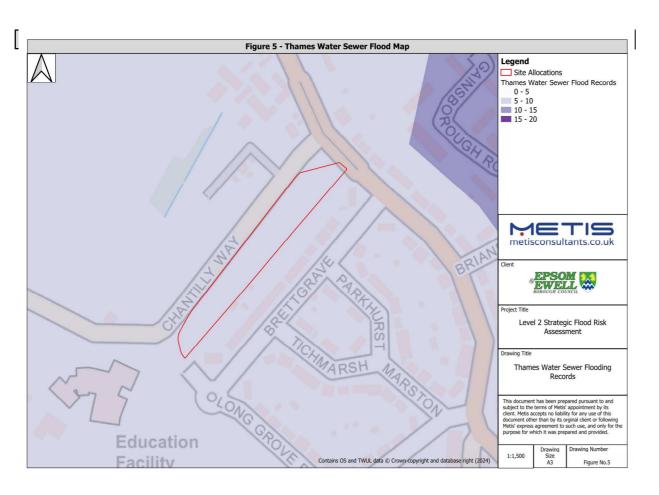
	SITE ASSESSMENT - Chantilly Way	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
• The site falls within a postcode area where there are 6	 The site is classified as having >75% susceptibility to groundwater flooding. 	 This site is not at risk of flooding from reservoirs.
eported flood incidents from sewer flooding.	• The site is underlain by River Terrace superficial deposits on its northern	
• The site is assumed to be served by separate surface water and	side and London Clay Formation bedrock geology.	
oul sewer networks, given their proximity to the site. There is		
also a combined sewer near the south of the site.		
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
• Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
• Where historic flooding has occurred, the applicant must show how	• Must be prepared by a chartered professional or specialist.	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
	Safety of Development	
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Net. C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is mostly covered by green space. Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from northern areas of the site. Safe access routes should be directed to the west of the site towards 	manage surface water runoff onsite through above ground SuDS and / or below ground w Local Plan.	e area coverage on site will increase surface water runoff and flood risk if not risk of flooding.
 By complying with SFRA - Level 2 Report mitigation requirement num 	bers 4.3, 4.4, 4.5 and 4.9.	
 E. Will development require a flood risk permit/watercourse consent No. The site is not located near a Main River or Ordinary Watercourse 		
F. Can the site pass the Exception Test?The Exception Test is not required as the site is not located within Flo	od Zone 3a.	

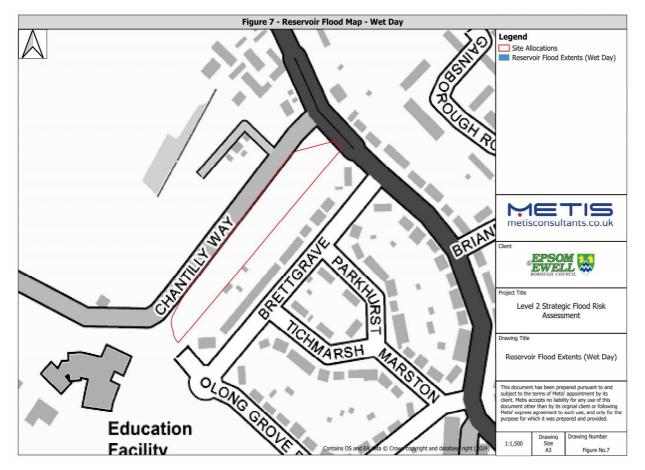
















Electing Man			
Flooding Map			
<u>ໄ</u>	Legend		
1.81	Site A		
	Groundwa		Risk
121	< 25%	% 5% <50%	
)% <75%	
171	>= 75		
POLICITA			
UNA .			
	M		TIS tants.co.uk
	motis	consult	tants couk
	metia	consur	Lants.co.uk
210	Client		
BRIAN	Chefic	2200	
	S.	EPSO.	M 🙀 🔜
	1	DOROUGH COL	NCIL
	Project Title		
		1.2 Chunkas	is Flood Disk
	Leve	Assess	ic Flood Risk
		100000	
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	subject to the	terms of Metis	pared pursuant to and appointment by its
			ty for any use of this rginal client or following
			such use, and only for the bared and provided.
	parpose for th	in the property	
	1:1,500	Drawing Size	Drawing Number
© Crown Copyright and database right (2024)	1:1,500	A3	Figure No.6
			•

Address: 64 South S	treet. Epsor	n, KT18 7PF		Area:	0.14	Ha							
		.,	1	Site Refere		LAA10				Current Ris	k Summary	1	
			J 1					FI	uvial / Tid		· · · · ·	Groundwa	ter
	Current Use	9				Proposed Use		FZ2	0	% of Site	<25	0	% of Si
								FZ3a	0	% of Site	25-50	0	% of Si
S	imall Busine	ss				Residential		FZ3b	0	% of Site	50-75	100	% of Si
								Su	irface Wat	er	>75	0	% of Si
								1 in 30*	0.07	% of Site		Artificia	l
Current Vu	Inerability C	lassification	n		Propos	ed Vulnerability Classification		1 in 100*	10.01	% of Site	1		
								1 in 1000*	34.42		Reservoir	NO	At ris
Le	ess Vulnerat	ble				More Vulnerable					looding		
										nin the pred		stcode	16
								* return perio	ds for poten	tial flood even	ts		
		. 15	1)			FLUVIAL / *	TIDAL						
	sk Assessme								···· /-		1		
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism			Access / E	-	4		Mit
peed of inundation	N/A	N/A	N/A	Hrs		N/A - No fluvial / tidal risk is predicted at		N/A - No flu	-	risk is		N/A - No	Tiuvial / t
Min. Depth	N/A	N/A	N/A	m		this site.		predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard Duration of Flood	N/A N/A	N/A N/A	N/A N/A	N/A									
he +35% Climate Change Al		-	N/A	Hrs									
	ssment (Un												
Parameter	FZ3a	*FZ3a+CC	Units										
peed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A			Figure 1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Flood	d Hazard Ma	ap		
Duration of Flood	N/A	N/A	Hrs										
						SURFACE W	/ATER						
	Risk Ass	essment											
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk F	Requiremer	nts	
•			0.00 - 0.15	m		Safe access and egress routes should be		Developm	nent shoul	d be directe	d away from	n the	
			0.30 - 0.60	m		directed to the northwest of the site		eastern are			nere is highe	er risk of	
Max. Velocity	0.00 - 0.25	0.50 - 1.00	1.00 - 2.00	m/s		towards St Margaret Drive where there is a		surface wat					
Max. Hazard	0.50 - 0.75	0.75-1.25	1.25 - 2.00	N/A		lower risk of flooding.		See also S		-		-	
he 1 in 1000 annual probability o				l impact of currer	nt risk			requiremen		4.4 for furtl	ner develop	ment	
	ription of F							stipulations					
The site is at low to medi													
astern parts. Dorking Roa vater flooding.	a, to the south	of the site, is	at high risk of	surrace									
Climate change will incre	ase the maxim	um velocity ar	nd maximum h	azard of									
urface water flooding.													
						Figure 3 - RoFSW Flood Depth Map		Figure 4 - R	oFSW Floo	d Hazard M	lap		





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

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• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

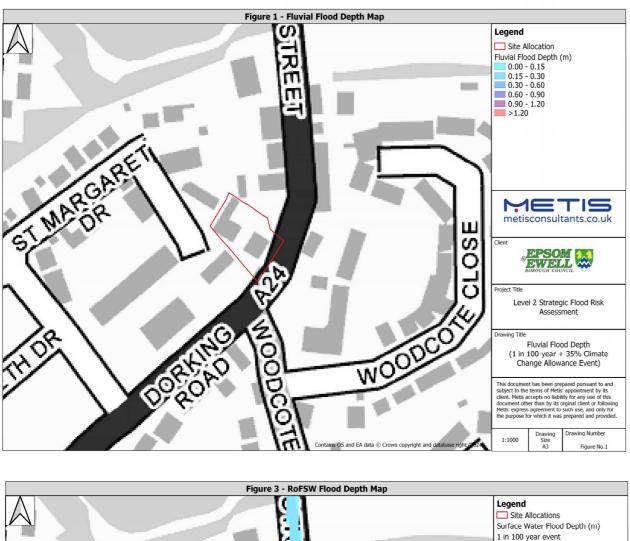
	GROUNDWATER	ARTIFICIAL
SEWER Risk Assessment	Risk Assessment	Risk Assessment
The site falls within a postcode area where there are 16	The site is classified as having 50-75% susceptibility to groundwater	This site is not at risk of flooding from reservoirs.
ported flood incidents from sewer flooding.	flooding.	
The site is assumed to be served by separate surface water and	• The site is underlain by River Terrace superficial deposits and Lambeth	
ul sewer networks, given their proximity to the site.	Group bedrock geology.	
gure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted at this site.
s historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
nnections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
is risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
Can the development be future proofed for climate change consid	Safety of Development	
The site is mostly covered by impermeable areas with little green space Development must mitigate any increase in impermeable area to the anaged properly.		
. How can the development reduce risk overall?		
Direct development away from the eastern areas of the site.	ito towards St Margarot Drivo where there is a lower rick of fleeding	
	ite towards St Margaret Drive where there is a lower risk of flooding. de SuDS or an alternative sustainable approach to manage surface water to comply with I	Policy \$15 in FEBC's draft Local Plan
By complying with SFRA - Level 2 Report mitigation requirement num		ruily 313 III EEDC S UI AIT LUCAI PIAII.
Will development require a flood risk permit/watercourse consent		
No. The site is not located near a Main River or Ordinary Watercours	е.	
Can the site pass the Exception Test?		
Can the site pass the Exception Test? The Exception Test is not required as the site is not located within Flo	ood Zone 3a.	
	ood Zone 3a.	
	ood Zone 3a.	
	ood Zone 3a.	

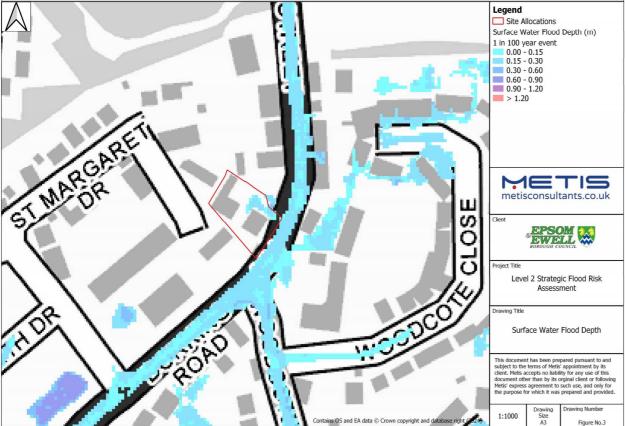
D. H

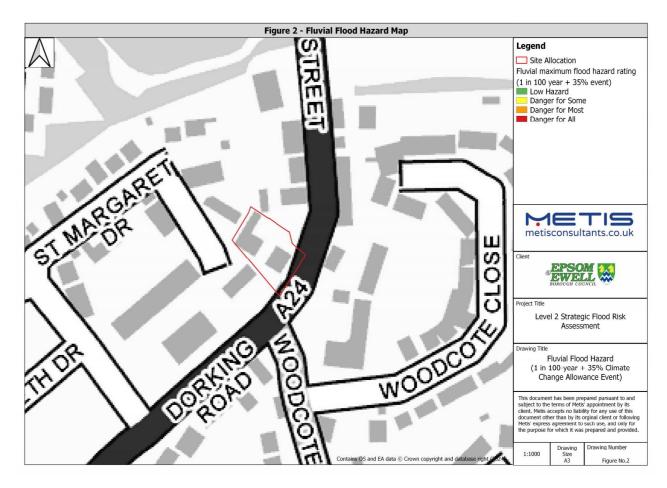
E. W

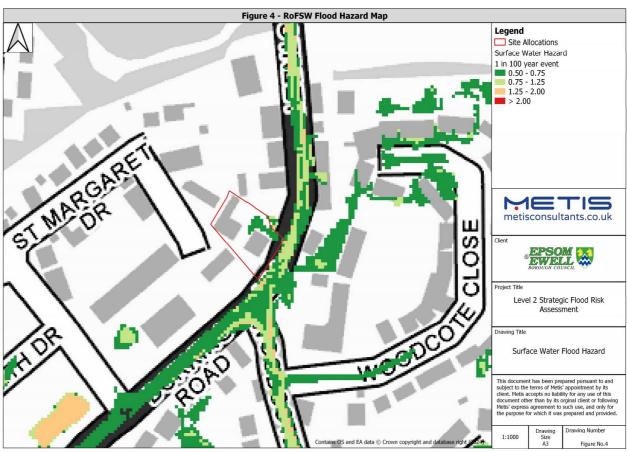
F. Ca



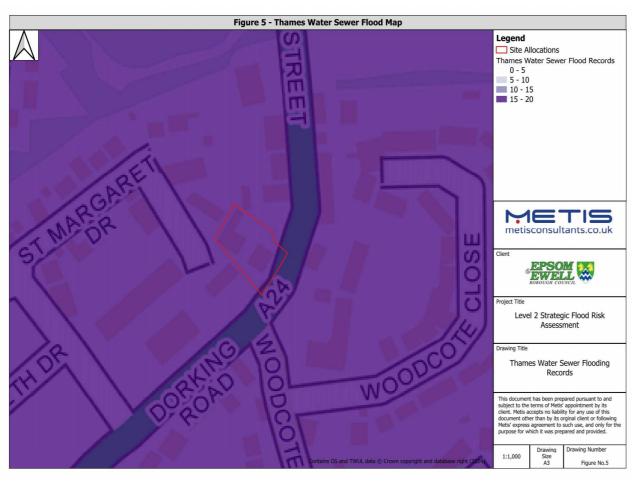


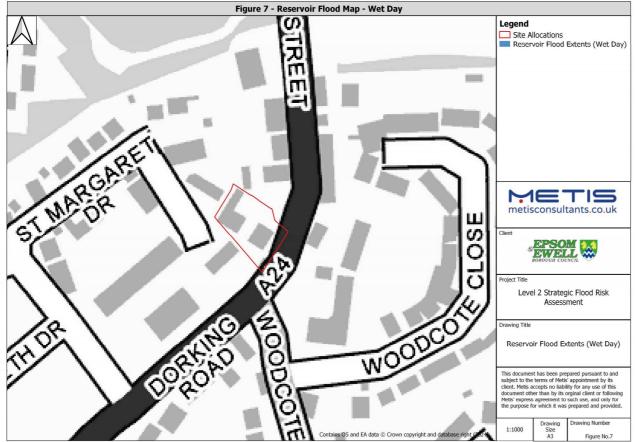


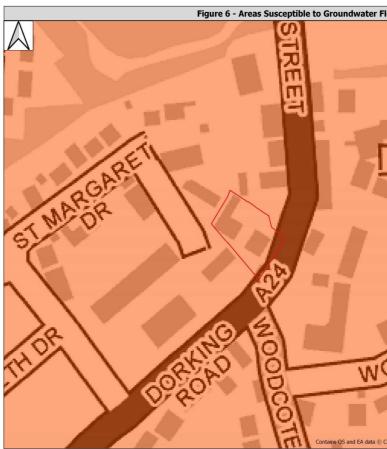














ooding Map			
-		ter Flood I % 5% <50% 0% <75%	
CLOSE	Client Project Title	EPSO EWE BokotigH col	jic Flood Risk
ODCOT		Floor	to Groundwater
wn copyright and database right (2074)	subject to the client. Metis a document oth Metis' express	terms of Metis ccepts no liabi er than by its agreement to	sared pursuant to and s'apointment by its lity for any use of this orginal client or following such use, and only for s prepared and provided. Drawing Number Figure No.6

Address: Ep	som, KT19	9QD		Area:	0.19 Ha								
				Site Referen	ce: LAA11					Current Ris	k Summary		
								Flu	uvial / Tid	-		iroundwat	
	Current Us	e			Prop	osed Use		FZ2	0	% of Site	<25	100	% of 9
					_			FZ3a	0	% of Site	25-50	0	% of 9
	Car Park				Res	idential		FZ3b	0	% of Site	50-75	0	% of
							1	in 30*	rface Wat	% of Site	>75	0 Artificial	
Current Vu	nerability (Classification	n [Proposed Vulner	ability Classification		in 100*	0	% of Site		Artificial	1
current vu		classification			rioposcu vunici			n 1000*	21.9		Reservoir	NO	At ri
Le	ess Vulnera	ble			More	Vulnerable		1 2000	2215	Sewer F		110	
								No. Inci	dents with	in the pred	-	stcode	14
			I				* re			ial flood event	· ·		_
						FLUVIAL / TI	DAL	-	-				
Ris	k Assessm	ent (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		cription of Flood Mechanism			Access / Eg	-			N
Speed of inundation	N/A	N/A	N/A	Hrs	N/A - No	fluvial / tidal risk is predicted at	N//	A - No flu	vial / tidal	risk is		N/A - No	fluvial /
Min. Depth	N/A	N/A	N/A	m	this site.		pre	edicted at	this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level Max Flood Hazard	N/A N/A	N/A N/A	N/A N/A	m AOD									
Duration of Flood	N/A N/A	N/A N/A	N/A N/A	N/A Hrs									
The +35% Climate Change Al				1113									
		ndefended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		Figure 1	- Fluvial Flood Depth Map	Fig	ure 2 - Fli	uvial Flood	d Hazard Ma	<u>ip</u>		
Duration of Flood	N/A	N/A	Hrs										
	Dick Ac	sessment				SURFACE WA	ATER						
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		N/1i+	igation	Flood Risk R	oquiromon	te	
Min. Depth	N/A		0.00 - 0.15	m	Safe acce	ess and egress routes should be			-	d be directe	-		
Max. Depth	N/A	-	0.30 - 0.60	m		to the southwest of the site		-		areas of the	-		
Max. Velocity	N/A		0.50 - 1.00	m/s		Bourne Way, Hogsmill Way or				water floodi			
Max. Hazard	N/A	-	0.75 - 1.25	N/A		/ay where there is a lower risk of				l 2 Report S	-	tigation	
The 1 in 1000 annual probability e	-		I	,	<i>a b</i>	-				4.4 for furth		-	
		lood Mecha					stip	oulations.					
The central and northern ooding. Rowden Road, at ooding. Climate change will incre elocity and maximum haz	the north of t ase the minim	he site, is at hig num and maxim	gh risk from sun num depth, ma	rface water									
siddicy and maximum fld2		mater noounig			Eiguro 2	- RoFSW Flood Depth Map	Fig	ure / - Ro	SSW Eloo	d Hazard M	an		_





Site is not in an area benefitting from flood defences. There are flood defences located in the vicinity of the site along the River Hogsmill and the Bonesgate Stream.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Crane Court/Rowden Rd (Garage	e)
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
• The site falls within a postcode area where there are 14	 The site is classified as having <25% susceptibility to groundwater flooding. 	This site is not at risk of flooding from reservoirs.
reported flood incidents from sewer flooding.	 The site is underlain by London Clay bedrock geology. 	
• The site is served by surface water sewers. There are also foul		
sewers located near the site.		
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
• Applicant must consult with TWUL to confirm if the development site	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	• If there is a potential level of impact, mitigation actions must be proposed.	
• Where historic flooding has occurred, the applicant must show how	Must be prepared by a chartered professional or specialist.	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change conside	Safety of Development	
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Net C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is mostly covered by impermeable areas with little green spate Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from the central and northern areas of the state should be directed to the southwest of the site to the southwest of th	o manage surface water runoff onsite through above ground SuDS and / or below ground ew Local Plan. e and will flood risk increase? he 'More vulnerable' classification, as residential uses have been proposed. ice. This offers an opportunity to improve flood attenuation through the new development site with runoff storage to prevent any increase in flood risk. An increase in impermeable site. wards Bourne Way, Hogsmill Way or Millais Way where there is a lower risk of flooding.	nt. e area coverage on site will increase surface water runoff and flood risk if not
	de SuDS or an alternative sustainable approach to manage surface water to comply with F	Policy S15 in EEBC's draft Local Plan.
By complying with SFRA - Level 2 Report mitigation requirement num	bers 4.3, 4.4, 4.5 and 4.9.	
E. Will development require a flood risk permit/watercourse consent	?	
• No. The site is not located near a Main River or Ordinary Watercourse		
F. Can the site pass the Exception Test?		
• The Exception Test is not required as the site is not located within Flo	ood Zone 3a.	

A. Can the development be futur

B. Can the development be desig

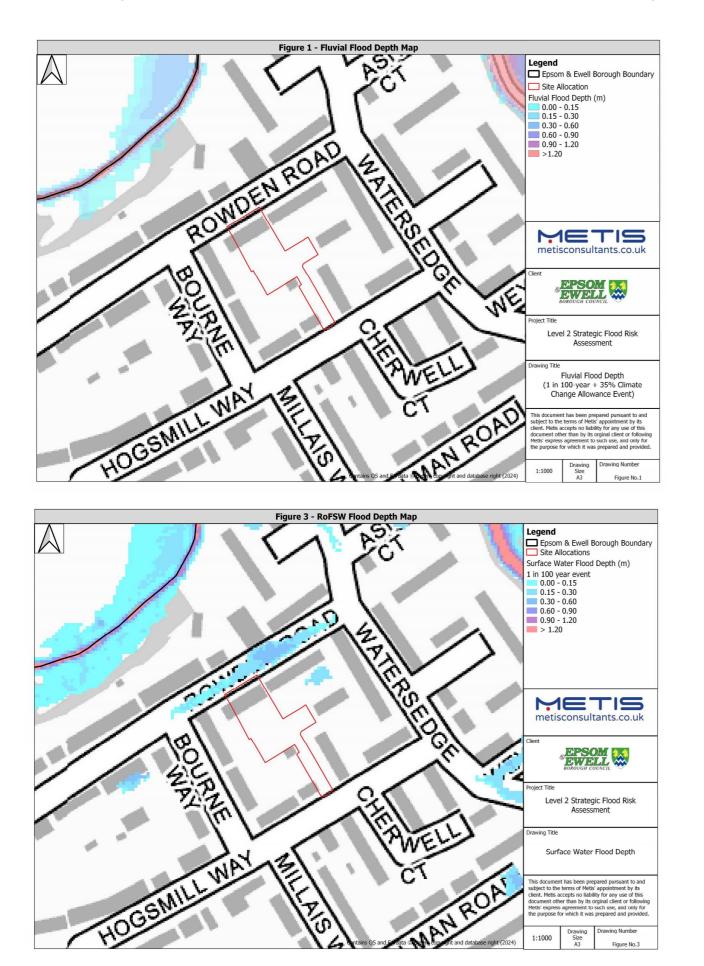
C. What is the cumulative impact

D. How can the development red

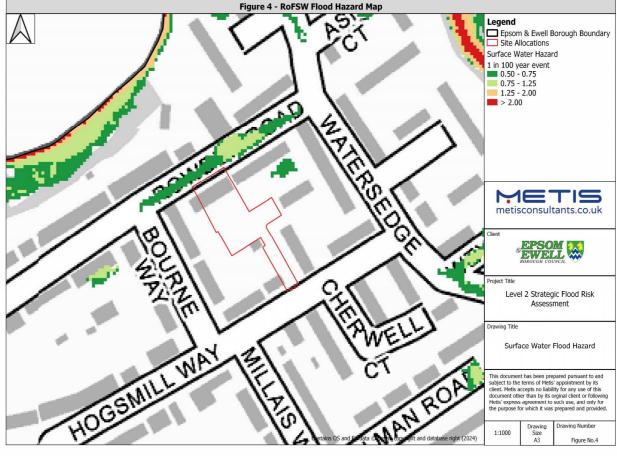
E. Will development require a flo

F. Can the site pass the Exception

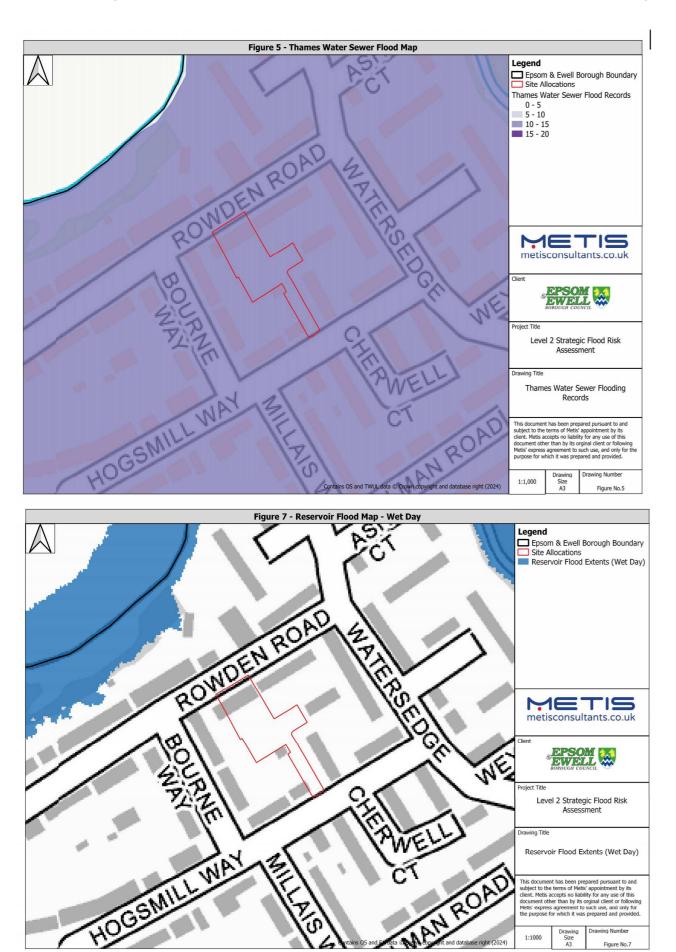


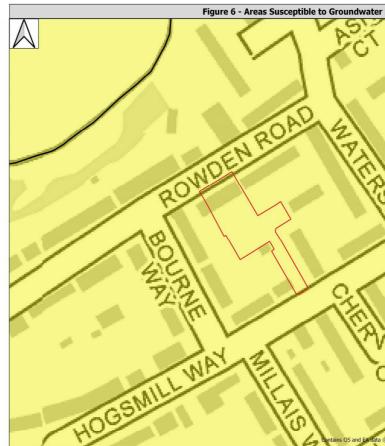














Flooding Map		
	Legend ☐ Epsom & Ewell Bord Site Allocations Groundwater Flood Risk < 25% >= 25% <50% >= 50% <75% >= 75%	-
A FE	metisconsultar	nts.co.uk
off WE	Project Title	
\sim	Level 2 Strategic F Assessmen	
VELL	Drawing Title Areas Susceptible to Flooding	
ROAD	This document has been prepare subject to the terms of Metis' app client. Metis accepts no liability fit document other than by its orgin Metis' express agreement to such the purpose for which it was prep	pointment by its or any use of this al client or following in use, and only for
© Grown copyright and database right (2024)	1:1000 Drawing Dra Size A3	awing Number Figure No.6

						SITE ASSESSMENT	- Richards	Field Car	Park				
Address: 2 Richard	ls Field, Ew	ell. Epsom.		Area:	0.07 Ha								
	KT19 9XH	• •	I I	Site Refere						Current Ris	k Summary	/	
			J I					FI	uvial / Tid	al		Groundwat	ter
	Current Us	e			Pro	posed Use		FZ2	0	% of Site	<25	0	% of Si
						-		FZ3a	0	% of Site	25-50	0	% of Si
	Car Park				Re	esidential		FZ3b	0	% of Site	50-75	0	% of Si
								Su	rface Wat	er	>75	100	% of Si
								1 in 30*	0	% of Site		Artificial	
Current Vul	nerability	Classification	า		Proposed Vulne	erability Classification		1 in 100*	15.21	% of Site	4		
								1 in 1000*	26.51	1	Reservoir	NO	At ris
Le	ess Vulnera	ble			More	Vulnerable					Flooding		-
										•	lominant po	ostcode	14
								* return perio	ds for poten	tial flood even	nts		
						FLU	VIAL / TIDAL						
		ent (Defende	<u> </u>								1		
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		escription of Flood Mechanism	- 1		Access / E	-	4		Mit
Speed of inundation	N/A	N/A	N/A	Hrs		o fluvial / tidal risk is predicted	at	N/A - No flu		risk is		N/A - No f	fluvial / ti
Min. Depth	N/A	N/A	N/A	m	this site			predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard	N/A N/A	N/A	N/A	N/A									
Duration of Flood The +35% Climate Change Al		N/A	N/A	Hrs									
		ndefended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		Figure 1	L - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard M	ц ар		
Duration of Flood	N/A	N/A	Hrs		<u></u>						<u> </u>	L	
						SUR	ACE WATER						
	Risk As	sessment											
Parameter	1 in 30	-	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk I	Requiremer	nts	1
Min. Depth	N/A		0.00 - 0.15		Safe ac	cess and egress routes should b	e	Developm	-		-		1
Max. Depth	N/A	0.15 - 0.30				d to the northeast of the site		eastern are			-		
Max. Velocity	N/A	0.00 - 0.25			toward	s Chessington Road where there	e is a	surface wat			U		
Max. Hazard	N/A		0.75 - 1.25	-		isk of flooding.		• See also S		-	Section 4 mi	itigation	
The 1 in 1000 annual probability e	•	1	I I			-		requiremen		-		-	
		lood Mecha						stipulations					
 The site is at mediur 	•			rticularly									
along the south easter			- •										
	increase th	e maximum v	velocitv and										
Climate change will	increase in	emaximam											1
 Climate change will maximum hazard of sum 			,										





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

SEWER		
	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
 The site falls within a postcode area where there are 14 reported flood incidents from sewer flooding. The site is served by separate surface water and foul sewer networks. 	 The site is classified as having >75% susceptibility to groundwater flooding. The site is underlain by River Terrace superficial deposits and London Clay bedrock geology. There have been groundwater flood incidents nearby, in the KT19 9XD postcode. 	This site is not at risk of flooding from reservoirs.
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
 Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections. Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development. 	 Applicant should carry out a screening study (as a minimum) to establish if there are any subterranean flood risk issues that may require further investigation. If there is a potential level of impact, mitigation actions must be proposed. Must be prepared by a chartered professional or specialist. 	N/A - No reservoir risk is predicted at this site.
	PLANNING CONSIDERATIONS	
	Safety of Development	
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's N C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to t The site is mostly covered by impermeable areas with little green spit Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from northern eastern areas of the site. Safe access routes should be directed to the northeast of the site tow 	o manage surface water runoff onsite through above ground SuDS and / or below ground a ew Local Plan. e and will flood risk increase? he 'More vulnerable' classification, as residential uses have been proposed. Ince. This offers an opportunity to improve flood attenuation through the new developmen e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	t. area coverage on site will increase surface water runoff and flood risk if not

A. Can the development be future proofed for c

B. Can the development be designed safe throu

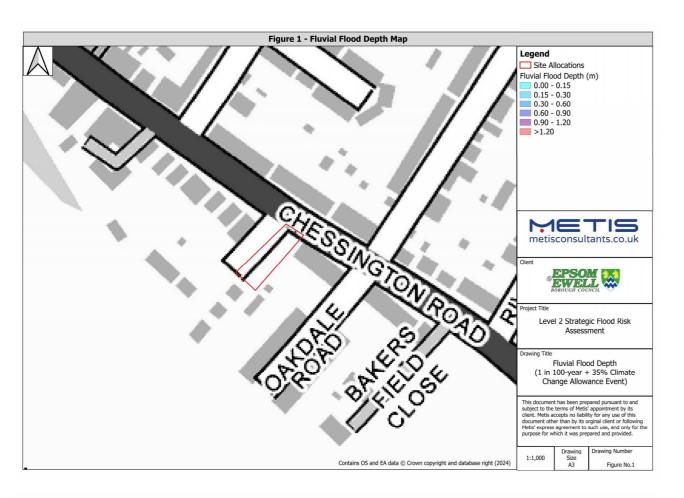
C. What is the cumulative impact of the develop

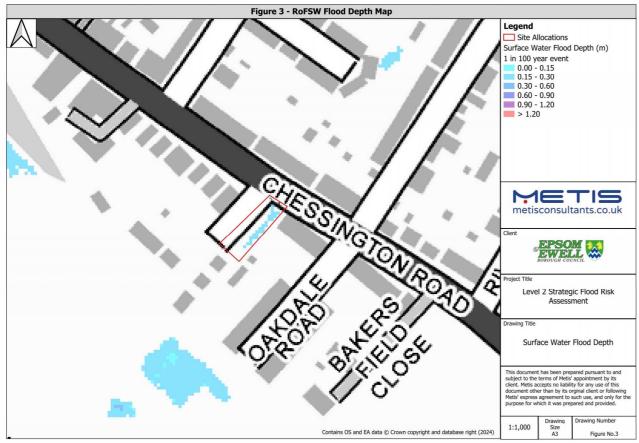
D. How can the development reduce risk overal

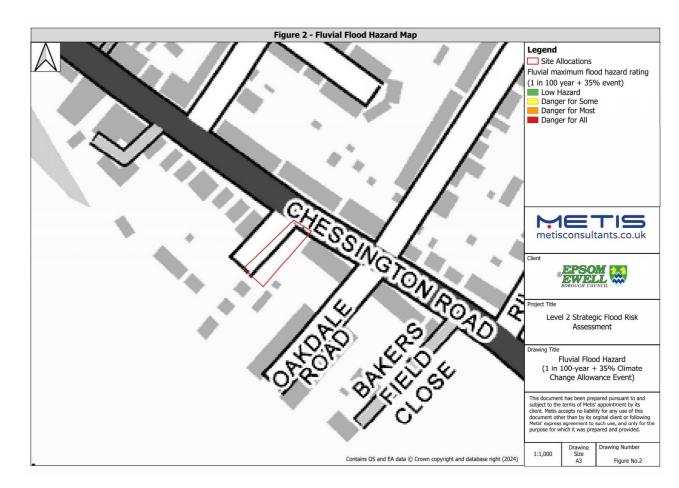
E. Will development require a flood risk permit,

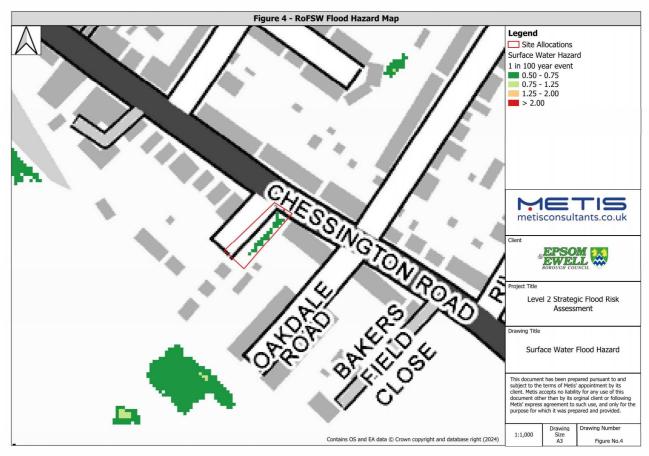
F. Can the site pass the Exception Test?



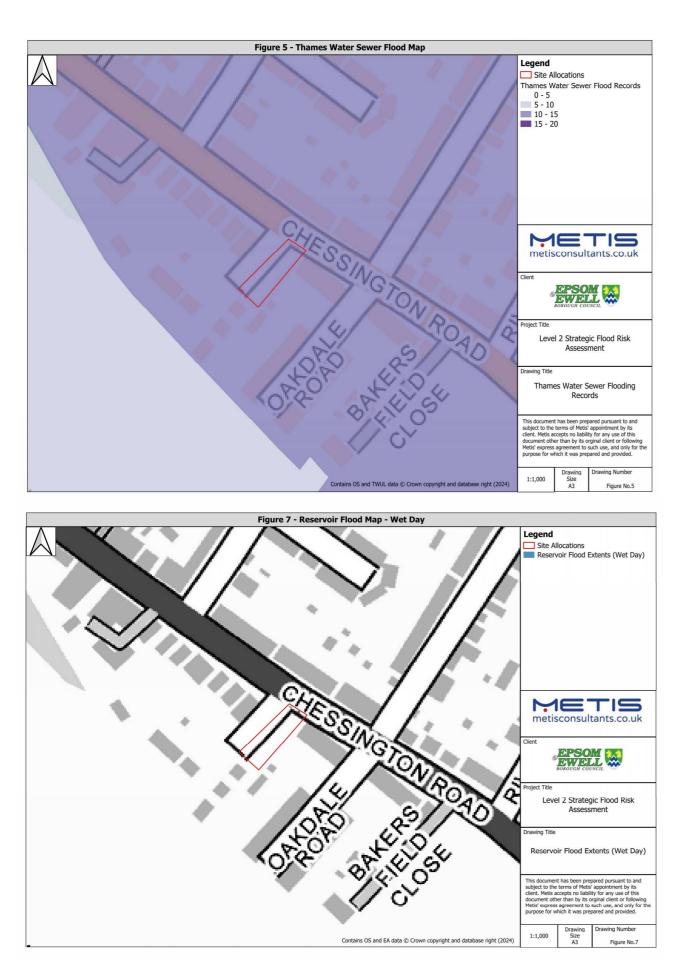


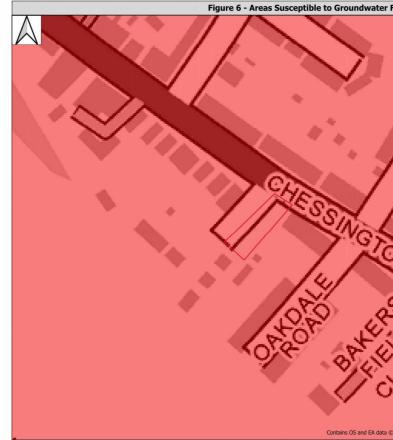














Flooding Map			
		ter Flood F % % <50% % <75%	tisk
	metis Client	EPSO EWEL	tants.co.uk
2 40 AD	Drawing Title	Assess	to Groundwater
	subject to the client. Metis a document oth Metis' express	t has been prep terms of Metis' ccepts no liabili er than by its o agreement to	pared pursuant to and appointment by its ty for any use of this ginal client or following such use, and only for the pared and provided.
© Crown copyright and database right (2024)	1:1,000	Drawing Size A3	Drawing Number Figure No.6

Addrose 20 Dalast	Dood Tw			Area:	0.25 F								
Address: 26 Reigat	e Road, Ew KT17 1PG	ell, Epsom,		Area: Site Refere		LAA5	Г			Curront Die	sk Summary	,	
	K117 1FG			Site Kelele	ince.	LAAS	-		uvial / Tid		-	iroundwa	tor
	Current Us	<u>م</u>				Proposed Use	- F	FZ2		% of Site	<25	0	% of S
	current 03						F	FZ3a	0	% of Site	25-50	100	% of S
	Car Park					Residential	ŀ	FZ3b	0	% of Site	50-75	0	% of S
	Currunk					hesidentia			rface Wat	-	>75	0	% of S
								1 in 30*	0	% of Site		Artificia	
Current Vul	nerability	Classificatior			Proposed	Vulnerability Classification	F	1 in 100*	9.62	% of Site			
								1 in 1000*	23.81		Reservoir	NO	At ris
Le	ess Vulnera	ble				More Vulnerable	- F			-	Flooding		1 / 10 / 10
							- E	No. Inci	dents wit			stcode	20
							No. Incidents within the predo * return periods for potential flood events			•	stooue		
						FLUVIAL / TI		. cturn period	is tor poten				
Ris	k Assessm	ent (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism	Г	Site	Access / E	gress	1		Mi
Speed of inundation	N/A	N/A	N/A	Hrs		I/A - No fluvial / tidal risk is predicted at	l. It	N/A - No flu		-	1	N/A - No	
Min. Depth	N/A	N/A	N/A	m		his site.		predicted at	-				
Max. Depth	N/A	N/A	N/A	m			ľ						
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	, N/A	N/A	, N/A	, Hrs									
• The +35% Climate Change Al	lowance event	is reviewed											
Risk Asse	ssment (Ur	ndefended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s		L		L						
Max. Hazard	N/A	N/A	N/A		Ē	igure 1 - Fluvial Flood Depth Map	Ī	Figure 2 - Fl	uvial Floo	d Hazard M	ap		
Duration of Flood	N/A	N/A	Hrs										
						SURFACE WA	TER						
	Risk As	sessment											
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk I	Requiremer	its	
Min. Depth	N/A	0.00 - 0.15	0.00 - 0.15	m	S	afe access and egress routes should be	ſ	Developm	ent shoul	d be directe	ed away fror	n the	
Max. Depth	N/A	0.15 - 0.30	0.30 -0.60	m	c	lirected to the southwest of the site	e	eastern area	as of the s	ite where t	here is high	er risk of	
Max. Velocity	N/A	1.00 - 2.00	> 2.00	m/s	t	owards Ewell By-Pass where there is a		surface wat		•			
Max. Hazard	N/A	0.75 - 1.25	1.25 - 2.00	N/A	le	ower risk of flooding.	•	 See also S 	FRA - Leve	el 2 Report S	Section 4 mi	tigation	
• *The 1 in 1000 annual probability e	extent represents	the potential climat	te change adjuste	d impact of curre	nt risk		l I	requiremen	t number	4.4 for furt	her develop	ment	
Desc	ription of F	lood Mecha	nism				s	stipulations					
 The site is at medium 	n risk of su	rface water f	looding, pa	rticularly									
along Reigate Road an	d surround	ling the exist	ing building	to the									
north east of the site.													
 Climate change will i 				-			L						
maximum velocity and	1 maximum	bazard of cu	rfaco wato	r flooding		igure 3 - RoFSW Flood Depth Map	-			od Hazard N	100		





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Esso Express, 26 Reigate Road	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
• The site falls within a postcode area where there are 20	• The site is classified as having 25-50% susceptibility to groundwater	 This site is not at risk of flooding from reservoirs.
eported flood incidents from sewer flooding.	flooding.	
• The site is assumed to be served by a foul sewer network, given	• The site is underlain by Thanet formation bedrock geology to the west and	
their proximity to the site.	Lewes Nodular Chalk, Seaford Chalk and Newhaven Chalk to the east.	
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
 Applicant must consult with TWUL to confirm if the development site 	• Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	• If there is a potential level of impact, mitigation actions must be proposed.	
• Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change conside	Safety of Development	
		attenuation. Green drainage infrastructure should be prioritised to provide wide
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Ne C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is covered by impermeable areas and some green space. This Development must mitigate any increase in impermeable area to the 	ew Local Plan.	
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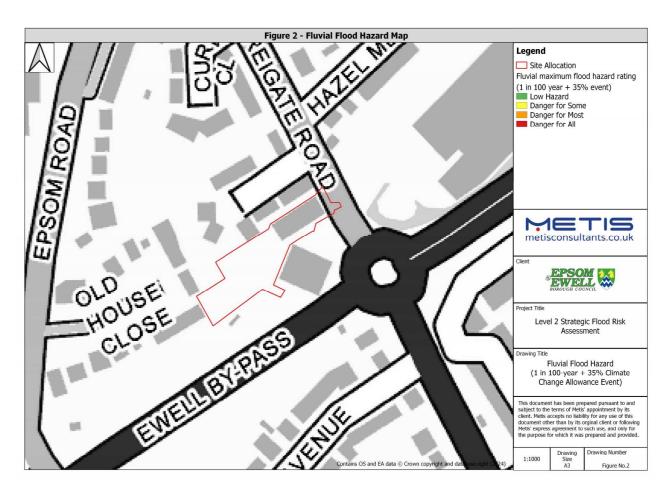
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E. Will developm

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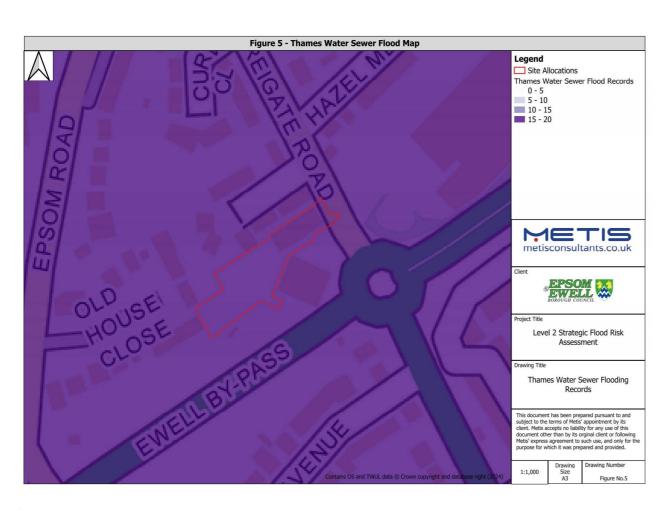


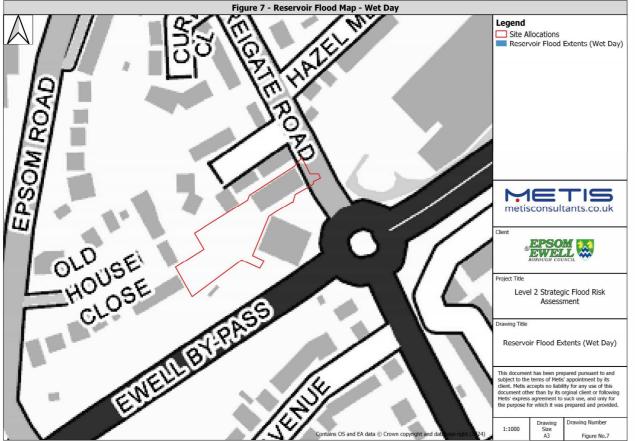


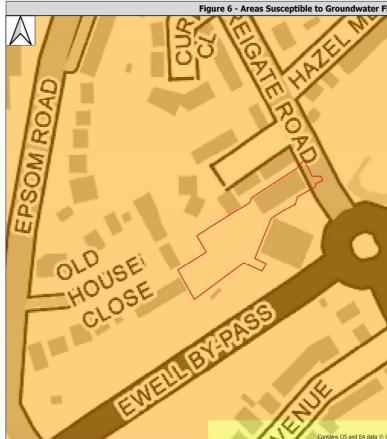














ooding Map			
	Legend		
	Site Allo	ocations	
	Groundwate	er Flood I	Risk
	< 25%		
		% <50%	
		% <75%	
	>= 75%	/0	
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			such use, and only for prepared and provided.
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Address: E	psom, KT19 9	911	I F	Area:		Ha				a			
			Jl	Site Refere	nce:	LAA7				Current Ris	· · · ·		-
	6	_				December of the			uvial / Tic			iroundwat	
	Current Use	5				Proposed Use		FZ2	0	% of Site	<25	0	% of 9
	Car Park					Decidential		FZ3a FZ3b	0	% of Site % of Site	25-50 50-75	0	% of 9
						Residential		I	rface Wa		>75	100	% of 9
								1 in 30*	8.19	% of Site		Artificial	
Current Vu	Inerability C	lassification	.		Propos	ed Vulnerability Classification		1 in 100*	10.65	% of Site		Artificial	
Current vu					110003	ed vullerability classification		1 in 100*	15.41		Reservoir	NO	At ris
1	ess Vulnerab	he				More Vulnerable		1 11 1000	15.41	-	looding		
L								No Inci	dents wit	hin the pred		strode	14
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							JVIAL / TIDAL	return period					
Ri	sk Assessme	nt (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism	n	Site	Access / E	gress	1		М
Speed of inundation	N/A	N/A	N/A	Hrs		N/A - No fluvial / tidal risk is predicted		N/A - No flu		-	1	N/A - No f	
Min. Depth	N/A	N/A	N/A	m		this site.	-	predicted at	-				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	, N/A	N/A	, N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	N/A	N/A	N/A	Hrs									
[•] The +35% Climate Change A	llowance event is	s reviewed	• •										
Risk Asse	essment (Un	defended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A			Figure 1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard M	<u>ap</u>		
Duration of Flood	N/A	N/A	Hrs										
						SUI	RFACE WATER						
	Risk Ass												-
Parameter	1 in 30		1 in 1000	Units		Site Access / Egress			<u> </u>	Flood Risk F	•		
Min. Depth	0.00 - 0.15			m		Safe access and egress routes should	be	Developm			,		
Max. Depth	0.15 - 0.30			m		directed to the north west of the site		central area					
Max. Velocity	0.00 - 0.25			m/s		towards Hollymore Lane where there	is a	there is high			-		
Max. Hazard	0.50 - 0.75	0.75 - 1.25	0.75 - 1.25	N/A		lower risk of flooding.		See also S				-	
*The 1 in 1000 annual probability				d impact of currer	ıt risk			requiremen		4.4 for furt	ner develop	ment	
	cription of Fl							stipulations					
•The site is at high ris			ing, particul	arly along									
Somerset Close at the				_									
•Climate change will i													
water depth and max	imum hazaro	d of surface	water flood	ing.		1							1





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Garages at Somerset Close & Westmorla	nd Close
SEWER	GROUNDWATER	ARTIFIC
Risk Assessment	Risk Assessment	Risk Assess
 The site falls within a postcode area where there are 14 reported flood incidents from sewer flooding. The site is assumed to be served by separate surface water and foul sewer networks, given their proximity to the site. 	 The site is classified as having >75% susceptibility to groundwater flooding. The site is underlain by River Terrace superficial deposits and London Clay bedrock geology. 	• This site is not at risk of flooding from re
Figure 5 - Thames Water Sewer Flood Map Mitigation Requirements	Figure 6 - Areas Susceptible to Groundwater Flooding Map Mitigation Requirements	<u>Figure 7 - Outline Reservoir Flood Map</u> Mitigation Requ
 Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections. Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development. 	 Applicant should carry out a screening study (as a minimum) to establish if there are any subterranean flood risk issues that may require further investigation. If there is a potential level of impact, mitigation actions must be proposed. Must be prepared by a chartered professional or specialist. 	N/A - No reservoir risk is predicted at this site.
	PLANNING CONSIDERATIONS	
	Safety of Development	

A. Can the development be future proofed for climate change considerations?

• Yes. See SFRA - Level 2 Report mitigation requirement numbers 4.4 and 4.9 for the flood resistant / resilient building stipulations and required finished floor levels.

B. Can the development be designed safe throughout its lifetime without increasing flood risk elsewhere?

• Yes. The development must use surface water drainage techniques to manage surface water runoff onsite through above ground SuDS and / or below ground attenuation. Green drainage infrastructure should be prioritised to provide wider ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's New Local Plan.

C. What is the cumulative impact of the development land use change and will flood risk increase?

• The development land use is changing from the 'Less vulnerable' to the 'More vulnerable' classification, as residential uses have been proposed.

• The site is mostly covered by impermeable areas with little green space. This offers an opportunity to improve flood attenuation through the new development.

D. How can the development reduce risk overall?

• Direct development away from central area of the site along Somerset Close.

• Safe access routes should be directed to the north west of the site towards Hollymore Lane where there is a lower risk of flooding.

• Ensure that there is no net increase in surface water runoff and include SuDS or an alternative sustainable approach to manage surface water to comply with Policy S15 in EEBC's draft Local Plan. • By complying with SFRA - Level 2 Report mitigation requirement numbers 4.3, 4.4, 4.5 and 4.9.

E. Will development require a flood risk permit/watercourse consent?

• No. The site is not located near a Main River or Ordinary Watercourse.

F. Can the site pass the Exception Test?

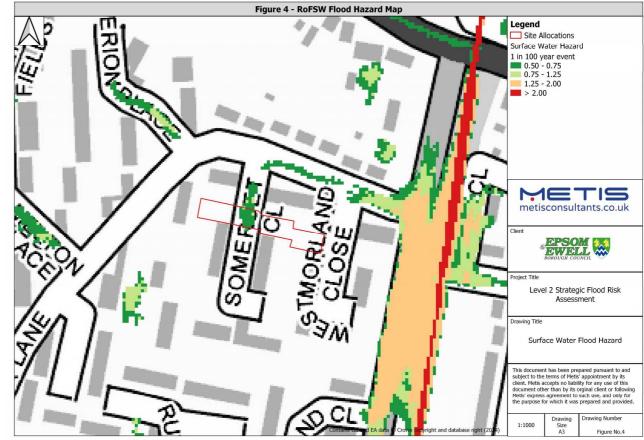
• The Exception Test is not required as the site is not located within Flood Zone 3a.



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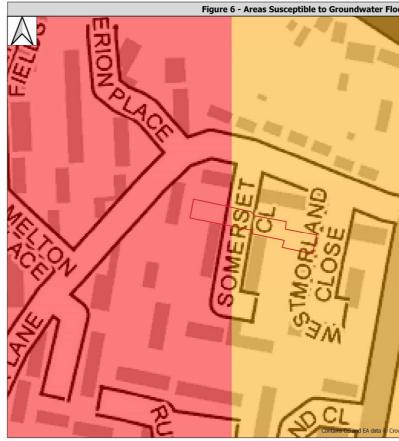














oding Map		
	Legend	
	Site Allocations	
	Groundwater Flood Risk	
	< 25%	
	>= 25% <50%	
	>= 50% <75%	
	>= 75%	
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	Areas Susceptible to Gr Flooding	oundwater
	Flooding	
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	KI4/EI			Sile Refere		AAO	ŀ		uvial / Tid			Groundwa	tor
	Current Us	9				Proposed Use	ŀ	FZ2		% of Site	<25	100	% of Sit
	current 03	E					ŀ	FZ3a	0	% of Site	25-50	0	% of Sit
	Residentia	l				Residential	ŀ	FZ3b	0	% of Site	50-75	0	% of Sit
	nesidentia					hesidentiai	H		rface Wat		>75	0	% of Sit
								1 in 30*	0	% of Site		Artificia	
Current Vul	nerability (Classification	n		Proposed V	ulnerability Classification	F	1 in 100*	0	% of Site			
	,				•		F	1 in 1000*	10.28	% of Site	Reservoir	NO	At risk
M	ore Vulnera	ble			Ν	Nore Vulnerable	f			Sewer F			1
							t t	No. Inci	dents with	nin the pred	-	stcode	0
							L			tial flood event		-	-
						FLUVIAL / T							
Ris	k Assessme	ent (Defend	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism	Г	Site	Access / E	gress			Miti
ed of inundation	N/A	N/A	N/A	Hrs	N/#	A - No fluvial / tidal risk is predicted at	t t	N/A - No flu		-		N/A - No	fluvial / tio
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Max. Depth	N/A	N/A	N/A	m				•					
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
ax Ground Level	N/A	N/A	N/A	m AOD									
lin Ground Level	N/A	N/A	N/A	m AOD									
x Flood Hazard	N/A	N/A	N/A	N/A									
ration of Flood	N/A	N/A	N/A	Hrs									
+35% Climate Change All	lowance event i	s reviewed											
Risk Asse	ssment (Un	defended)											
Parameter	FZ3a	*FZ3a+CC	Units										
ed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s				L				l		
Max. Hazard	N/A	N/A	N/A		Fig	ure 1 - Fluvial Flood Depth Map	_	Figure 2 - Fl	uvial Floo	d Hazard Ma	р		
uration of Flood	N/A	N/A	Hrs										
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		essment					-						-
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress	ļ		-	Flood Risk R	-		-
Min. Depth	N/A		0.00 - 0.15	m		e access and egress routes should be		•		d be directe			
Max. Depth	N/A		0.30 - 0.60	m		ected to Shadbolt Close to the north				southern ea			
Max. Velocity	N/A		0.50 - 1.00	m/s		st where there is a lower risk of			here is hig	gher risk of s	surface wat	er	
Max. Hazard	N/A	N/A	0.75 - 1.25	N/A	floo	oding.		flooding.					
e 1 in 1000 annual probability e				impact of curre	nt risk					el 2 Report S		-	
	•	lood Mecha								4.4 for furth	ner develop	ment	
The site is at low risk fron isting building.	n surrace wate	er flooding, esp	ecially at the n	orth of the				stipulations					
Climate change will increa	ase the minim	um and maxim	num depth, ma	ximum									
locity and maximum haza													
							L			1			
					El an	ure 3 - RoFSW Flood Depth Map		Figure 4 D		d Hazard M	~ ~		





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - 46 The Avenue, Worcester Park	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
The site is not predicted to be at sewer flood risk.	 The site is classified as having <25% susceptibility to groundwater flooding. 	 This site is not at risk of flooding from reservoirs.
The site falls within a postcode area where there are 0	The site is underlain by River Terrace superficial deposits and London Clay	
eported flood incidents from sewer flooding.	Formation bedrock geology.	
The site is assumed to be served by separate surface water and		
oul sewer networks, given their proximity to the site.		
	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
N/A - No sewer flood risk is predicted at this site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
	are any subterranean flood risk issues that may require further investigation.	
	• If there is a potential level of impact, mitigation actions must be proposed.	
	 Must be prepared by a chartered professional or specialist. 	
	PLANNING CONSIDERATIONS	
	Safety of Development	
 The development land use is not changing. It is proposed to be used The site is covered partially by impermeable areas, but there are also Development must mitigate any increase in impermeable area to the nanaged properly. 	for residential uses.	e area coverage on site will increase surface water runoff and flood risk if not
 The development land use is not changing. It is proposed to be used The site is covered partially by impermeable areas, but there are also Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? 	for residential uses. o gardens and green spaces throughout the site. e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	e area coverage on site will increase surface water runoff and flood risk if not
 The development land use is not changing. It is proposed to be used The site is covered partially by impermeable areas, but there are also Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from northern eastern and southern easter 	for residential uses. o gardens and green spaces throughout the site. e site with runoff storage to prevent any increase in flood risk. An increase in impermeable ern areas of the site where there is higher risk of surface water flooding.	e area coverage on site will increase surface water runoff and flood risk if not
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 The development land use is not changing. It is proposed to be used in the site is covered partially by impermeable areas, but there are also in the bevelopment must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from northern eastern and southern easter is Safe access routes should be directed to Shadbolt Close to the north ensure that there is no net increase in surface water runoff and inclue. By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent. No. The site is not located near a Main River or Ordinary Watercourse. 	for residential uses. o gardens and green spaces throughout the site. e site with runoff storage to prevent any increase in flood risk. An increase in impermeable ern areas of the site where there is higher risk of surface water flooding. west. ide SuDS or an alternative sustainable approach to manage surface water to comply with I hbers 4.3, 4.4, 4.5 and 4.9.	
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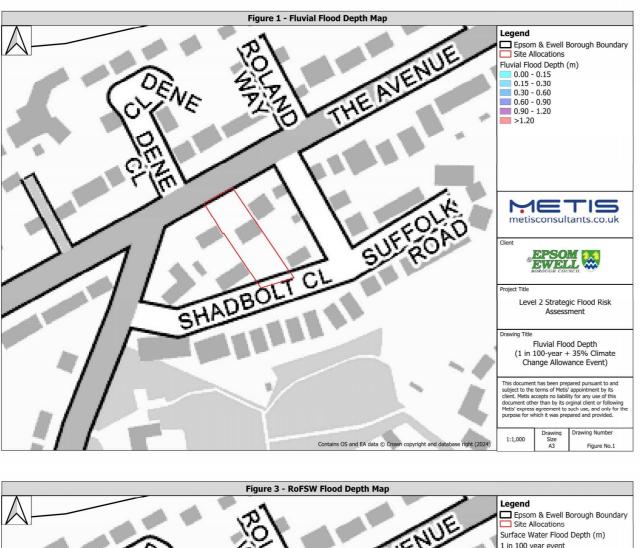
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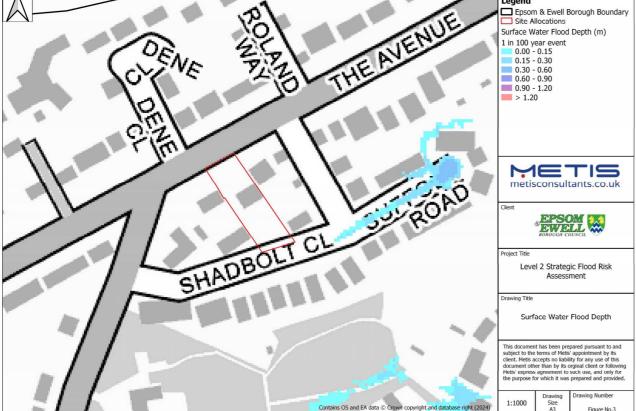
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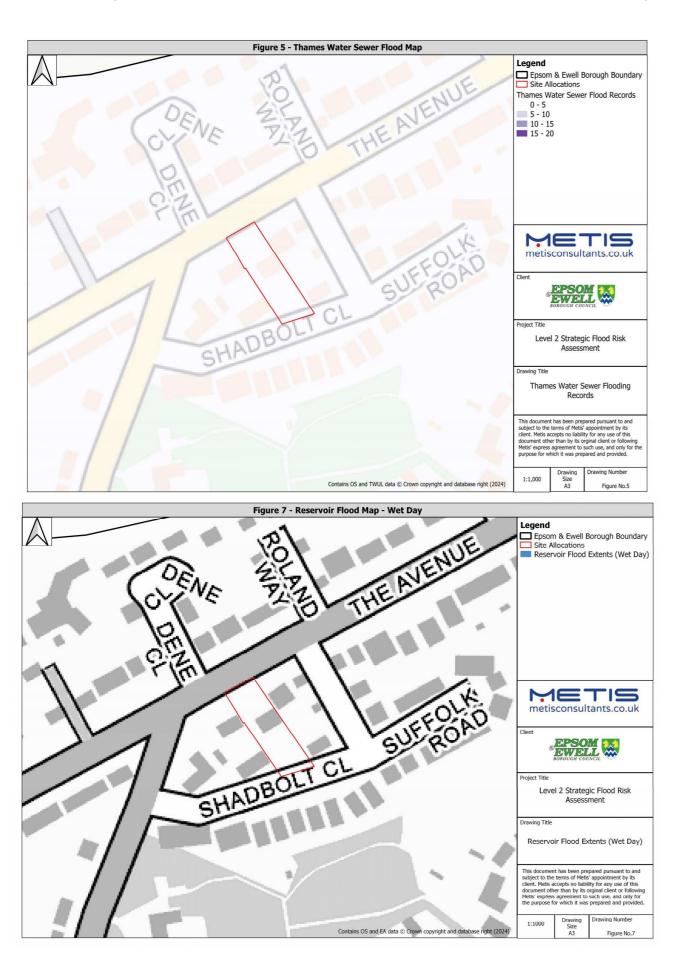


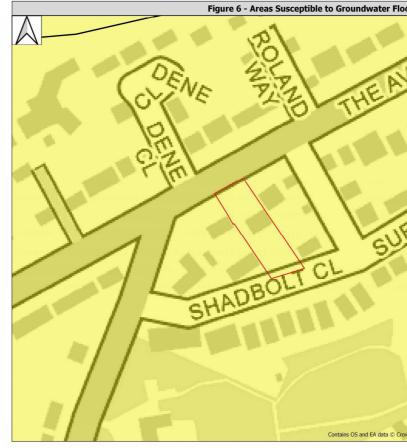






lap			
AVENUE	Site Al Fluvial mai (1 in 100 y Low H Dange Dange	location ximum floo /ear + 35%	e
UEFOLK BOAD	Client		tants.co.uk
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© Crown copyright and database right (2024)	1:1000	Drawing Size A3	Drawing Number Figure No.2







ooding Man			
OUTENUE	Groundwa < 25% >= 25	locations ter Flood F % % <50% % <75%	Borough Boundary Risk
FFOLK ROAD	Client	CONSULT CONSUL	ic Flood Risk
	This documen subject to the client. Metis a document oth Metis' express the purpose fo	Flood t has been pret terms of Metis ccepts no liabil er than by its c agreement was or which it was Drawing	to Groundwater ing pared pursuant to and appointment by its ity for any use of this such use, and only for prepared and provided. Drawing Number
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						SITE ASSESSMENT - H	latch Fu	urlong Nu	rsey				
Address: Castle	Nay, Ewell, K	T17 2PG		Area:	0.52 Ha								
				Site Refere	ence: NO	N004				Current Ris	k Summary	1	
								Fi	uvial / Tid	lal	6	Groundwat	ter
	Current Use	2			F	Proposed Use		FZ2	0	% of Site	<25	0	% of
								FZ3a	0	% of Site	25-50	100	% of
Brov	vnfield/Gree	nfield				Residential		FZ3b	0	% of Site	50-75	0	% of
									rface Wat		>75	0	% of
							-	1 in 30*	8.25	% of Site		Artificial	
Current Vu	Inerability C	lassificatio	n		Proposed Vu	Inerability Classification	_	1 in 100*	12.18	% of Site	4		
								1 in 1000*	33.95	-	Reservoir	NO	At r
L	ess Vulnerab	le			M	ore Vulnerable				Sewer F			-
										nin the pred		stcode	2
								* return perio	ds for poten	tial flood even	ts		
		. 15	N			FLUVIAL	L / TIDAL						
	sk Assessme	-					-				1		
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism	-		Access / E	-	4		N
Speed of inundation	N/A	N/A	N/A	Hrs		- No fluvial / tidal risk is predicted at		N/A - No flu		i risk is		N/A - No f	fluvial /
Min. Depth	N/A	N/A	N/A	m	this	site.		predicted at	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard Duration of Flood	N/A N/A	N/A N/A	N/A N/A	N/A Hrs									
The +35% Climate Change A		,	N/A	1115									
	essment (Und												
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation		N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		Figur	re 1 - Fluvial Flood Depth Map	_	Figure 2 - Fl	uvial Floo	d Hazard Ma	<u>ap</u>		
Duration of Flood	N/A	N/A	, Hrs										
		-				SURFACI	E WATER						
	Risk Asse	essment											
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk F	Requiremer	nts	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.00 - 0.15	m	Safe	access and egress routes should be		Developm	ent shoul	d be directe	d away from	n the	1
Max. Depth	0.30 - 0.60	0.30 - 0.60	0.60 - 0.90	m	direc	ted to the south of the site towards		northern ar	eas of the	site where	there is hig	her risk of	
Max. Velocity	0.50 - 1.00	0.50 - 1.00	1.00 - 2.00	m/s	Chea	m Road and the Ewell By-Pass where		surface wat	er floodin	g.			
Max. Hazard	1.25 - 2.00	1.25 - 2.00	> 2.00	N/A	there	e is a lower risk of flooding.		• See also S	FRA - Leve	el 2 Report S	Section 4 mi	tigation	
The 1 in 1000 annual probability	extent represents th	he potential clima	te change adjuste	d impact of currer	nt risk			requiremen	t number	4.4 for furth	ner develop	ment	
Des	cription of Fl	ood Mecha	nism					stipulations					
• The site is at high ri	sk of surface	water flood	ding in the n	orthern									
areas of the site.													
 Climate change will 													
naximum velocity an	d maximum l	hazard of su	urface water	flooding.									
						e 3 - RoFSW Flood Depth Map		Figure 4 - Re					





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

Start Assessment Call Column Answer • The dial base infining a postcode areas, KT17.1 where there are 2 regressife allow directs from server flooding and KT21 where there are 9 reported flood incidents. • The disk assessment is the disk assessment is under law to susceptibility or gourneemics. Selved Chaik Formation and Novakeer Active Law Exact Selved Chaik Exact Selved Chaik Formation and Novakeer Active Law Exact Selved Chaik E		SITE ASSESSMENT - Hatch Furlong Nursey	
 The site fails within a postcode areas kT(27) where there are 20 opcoted flood incidents from week flooding and KT(27) where there are 20 opcoted flood incidents. The site is is closefiled as having 25-30% susceptibility to produke from the control incidents from the control incidents. The site is is associated to be served by separate surface water and foul sever flood incidents. The site is is associated to be served by separate surface water and foul sever flood incidents. Applied must consist with TWL1 to confirm if the development site is incident flood incidents. Applied must consist with TWL1 to confirm if the development site is incident flood incidents. Applied must consist with TWL1 to confirm if the development site is incident flood incidents. Applied must consist with TWL1 to confirm if the development site is incident flood incidents. Applied must consist with TWL1 to confirm if the development site is incident flood incidents. Applied must consist with TWL1 to confirm if the development site is a protected site of the development is any proposed site of the applicant must floor incidents. Affection Requirements. Affection Requirements. Affection Requirements is a protected for climate change considerations? Acan the development be future proofed for climate change considerations? Acan the development be designed and throughout its lifetime without increasing flood risk is prevent any increasing flood risk is prevent any increasing flood risk is prevent any increase surface water runding as continge to the surface and provide site of the development. Cont the development must use surface water damage to the site on the site on the site is an apport of the floor levels. Cont the development is use surface water damage tof the site with rundif storinge to prevent any increase in flo	SEWER	GROUNDWATER	ARTIFICIAL
20 regreted flood incidents from sever flooding and KT121 where the are store separated flood incidents. • The site is assumed to be served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the readout of the set is assumed to be served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the properties of a served by separate surface water and to discuss the served to served by separate surface water and to discuss the served to served by separate surface water and to discuss the served of sevel served to served by separate surface water and to discuss the served to served by separate served as a served	Risk Assessment	Risk Assessment	Risk Assessment
where there are 2 reported fload incidents. In the site is assumed to be served by separate surface water and fold sever networks, given here proximity to the site. Figure 5. Tharnes Water Sever Fload Map Figure 6. Areas Susceptible to Groundwater Floading Map Figure 6. Areas Susceptible to Groundwater Floading Map Figure 7. Outline Reservoir Fload Map Figure 6. Areas Susceptible to Groundwater Floading Map Figure 6. Areas Susceptible to Groundwater Floading Map Figure 7. Outline Reservoir Fload Map Figure 7. Outline Reser	e site falls within a postcode areas KT17 1 where there are	• The site is classified as having 25-50% susceptibility to groundwater flooding.	This site is not at risk of flooding from reservoirs.
where there are 2 reported flood incidents. Image: Ima	eported flood incidents from sewer flooding and KT17 1	The site is underlain by Lewes Nodular Chalk Formation, Seaford Chalk Formation	
The take is assumed to be served by separate surface water and four issuer networks, given their proximity to the ste. Figure 5 - Amass SurrentPlie to Groundwater FloodIng Mag Figure 5 - More Security for the stepensor the has bioncilly flooded. TWUL must agree to any proposed sever remenctions. Where bloods flood group of the stepensor the has bioncilly flooded. TWUL must agree to any proposed sever remenctions. Where bloods flood group of the stepensor the sevent flood floo		and Newhaven Chalk Formation bedrock geology.	
Figure 5 - Thames Water Sever Flood Map Figure 6 - Areas Susceptible to Groundwater Flooding Map Figure 5 - Thames Water Sever Flood Map Mitigation Requirements * Applicant nucl consult with TWU to confirm (the development site has backed) Model. With must greate any proposed sever concellos. * Applicant should carry out a screening Wulk (as a minimum) to establish if there is a potential level of impact, mitigation actions must be proposed. Figure 7 - Outline Reservoir Flood Map * Where historic flooding has occurred, the applicant must show how this nok will be managed for the lifetime of the development. * Attacted professional or specials: Figure 7 - Outline Reservoir Flood Map * Must be prepared by a chartered professional or specials: * Applicant Should carry out a screening Wulk assues that may require third invest specials: Figure 7 - Outline Reservoir flood Map * More historic flooding has occurred, the applicant must show how this nok will be managed for the lifetime of the development. * Materiation actions must be proposed. Figure 6 - Areas Susceptible to Groundwater Flooding Map * Vess. Fide evelopment be future proofed for climate change considerations? * Can the development must use surface water for fide most should in the fide stable of the opposed. * See StRA - Level 2 Report mitigation requirement numbers 4.4 and 4.9 for the flood resistant / resilient building stipulations and required finished floor levels. 8. Can the development the designed safe throughout its lifetime without increasing flood risk screasese? * See StRA - Level 2 Rep			
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	an the site pass the Exception Test?		
		ood Zone 3a.	
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A. Can the developmen

B. Can the developmen

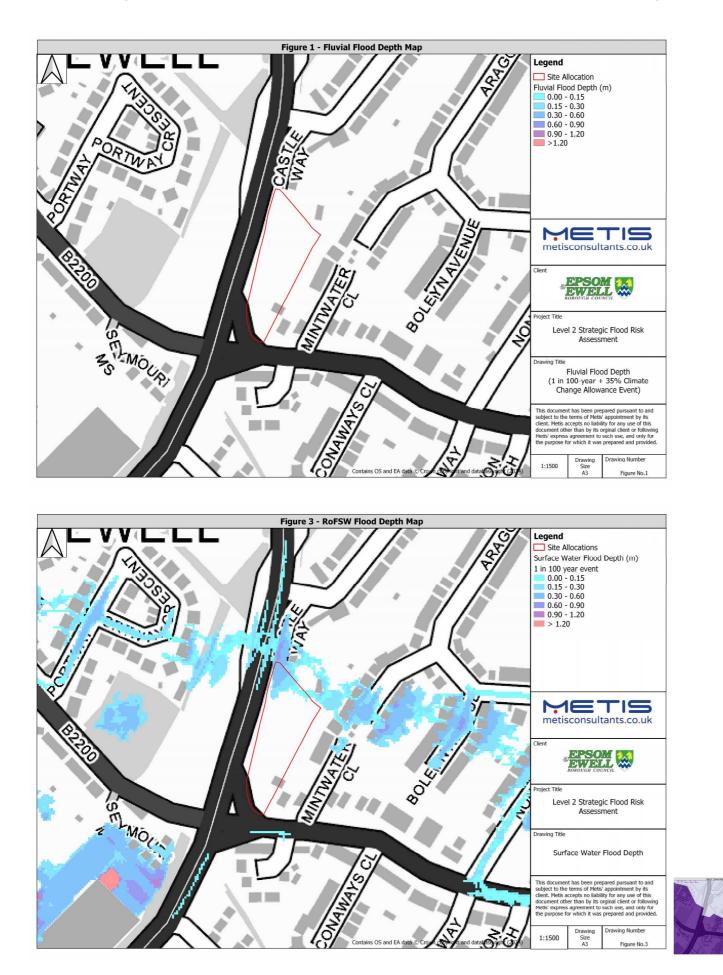
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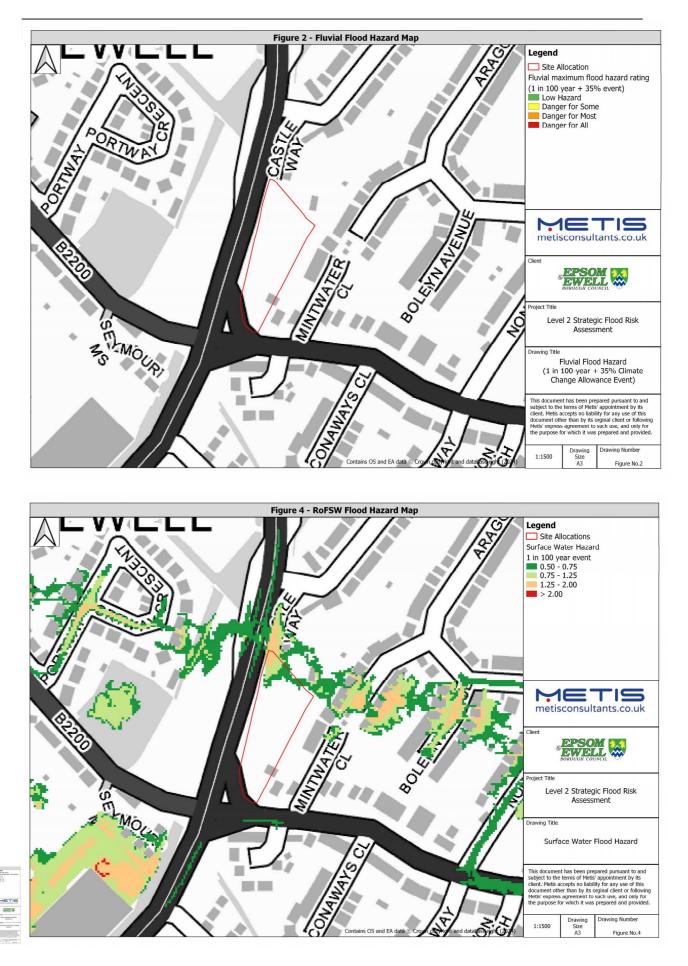
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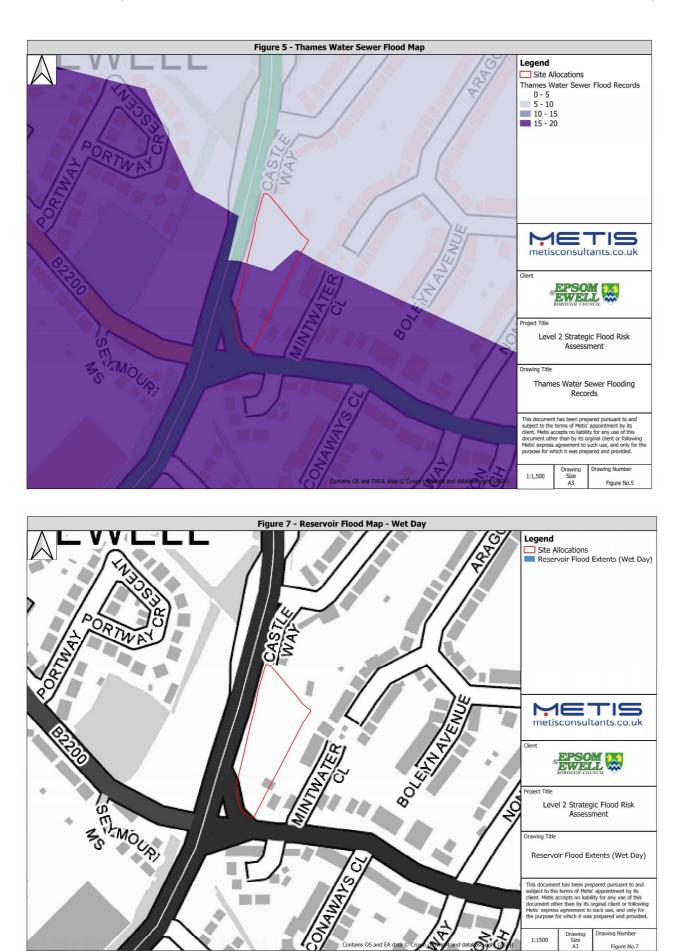
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ter Flooding Map			
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A CONTRACTOR OF	Client	consul	TISS Lants.co.uk
Cliffer and Cliffe		EPSO EWEI	
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ata © Crown convergint and database right (2024)	1:1500	Drawing Size A3	Drawing Number Figure No.6

Address: Ep		отц		Area:	<u>م د</u>	9 Ha						
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				Sile Kelele	nce.	100001+100022+100055		uvial / Tic		, ,	iroundwa	tor
	Current Use	<u>م</u>				Proposed Use	FZ2		% of Site		0	% of
	current 030	E					FZ3a	0	% of Site		0	% of
Mixed use	(Housing ar	nd Services)			Mixed u	se (Housing, Leisure, Commercial)	FZ3b	0	% of Site	50-75	100	% of
Winked use	(1100311)5 01				i i i i ka cu u			Irface Wat		>75	0	% of
							1 in 30*	5.65	% of Site		Artificia	
Current Vu	Inerability C	Classificatio	n		Propo	sed Vulnerability Classification	1 in 100*	13.09	% of Site			
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Μ	ore Vulnera	ble				More Vulnerable				looding		-
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Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism	Site	Access / E	gress	1		N
beed of inundation	N/A	N/A	N/A	Hrs		N/A - No fluvial / tidal risk is predicted at	N/A - No flu		-	1	N/A - No	
Min. Depth	N/A	N/A	N/A	m		this site.	predicted a	-				- 1
Max. Depth	N/A	N/A	N/A	m			ľ					
Max. Velocity	, N/A	N/A	, N/A	m/s								
Max Flood Level	, N/A	N/A	N/A	m AOD								
/lax Ground Level	N/A	N/A	N/A	m AOD								
/lin Ground Level	N/A	N/A	N/A	m AOD								
Aax Flood Hazard	N/A	N/A	N/A	N/A								
Ouration of Flood	N/A	N/A	N/A	Hrs								
e +35% Climate Change A	lowance event i	s reviewed										
Risk Asse	ssment (Un	defended)										
Parameter	FZ3a	*FZ3a+CC	Units									
beed of inundation	N/A	N/A	Hrs									
Min. Depth	N/A	N/A	m									
Max. Depth	N/A	N/A	m									
Max. Velocity	N/A	N/A	m/s									
Max. Hazard	N/A	N/A	N/A			Figure 1 - Fluvial Flood Depth Map	Figure 2 - Fl	uvial Floo	d Hazard Ma	ap		
Duration of Flood	N/A	N/A	Hrs									
						SURFACE WA	TER					
	Risk Ass	essment										_
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress	Mi	tigation -	Flood Risk F	Requiremen	its	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.00 - 0.15	m		Safe access and egress routes should be	 Developm 	nent shoul	d be directe	ed away fror	n the	
	0.60 - 0.90			m		directed to the northeast of the site	western are	eas of the	site where t	here is high:	er risk of	
Max. Velocity	1.00 - 2.00	1.00 - 2.00) > 2.00	m/s		towards East Street where there is a lower	surface wat		•			
Max. Hazard	1.25 - 2.00	1.25 - 2.00) > 2.00	N/A		risk of flooding.	 See also S 	FRA - Leve	el 2 Report S	Section 4 mi	tigation	
e 1 in 1000 annual probability	extent represents t	the potential climation	ate change adjuste	d impact of curren	t risk		requiremer	nt number	4.4 for furth	her develop	ment	
Desc	ription of F	lood Mecha	anism				stipulations	-				
The site is at high ris	k of surface	water floo	ding, particu	larly in								
ne western parts of t	he site.											
Climate change will	increase the	e maximum	depth, maxi	mum								
elocity and maximun	n hazard of s	surface wat	er flooding.									
						Figure 3 - RoFSW Flood Depth Map	Figure 4 - R		d Hazard M	120		_





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - SGN + Depot Road + 20 Hook Ro	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
• The site falls within a postcode area where there are 20	• The site is classified as having 50-75% susceptibility to groundwater	This site is not at risk of flooding from reservoirs.
reported flood incidents from sewer flooding.	flooding.	
• The site is assumed to be served by separate surface water and	• The site is underlain by River Terrace superficial deposits and Lambeth	
foul sewer networks, given their proximity to the site. There are	Group bedrock geology.	
also combined sewers nearby the site.		
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	• If there is a potential level of impact, mitigation actions must be proposed.	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change conside	Safety of Development	
 Development must mitigate any increase in impermeable area to the managed properly. 	e and will flood risk increase?	
D. How can the development reduce risk overall?		
• Direct development away from western areas of the site.		
 Safe access routes should be directed to the northeast of the site tow 	C C	
Ensure that there is no net increase in surface water runoff and inclus	ne suus or an alternative sustainable annroach to manage surtace water to comply with	Policy S15 in EEBU's draft Local Plan.
 By complying with SFRA - Level 2 Report mitigation requirement num 		
	bers 4.3, 4.4, 4.5 and 4.9.	
E. Will development require a flood risk permit/watercourse consent	bers 4.3, 4.4, 4.5 and 4.9.	
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 E. Will development require a flood risk permit/watercourse consent No. The site is not located near a Main River or Ordinary Watercourse F. Can the site pass the Exception Test? 	abers 4.3, 4.4, 4.5 and 4.9.	
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 E. Will development require a flood risk permit/watercourse consent No. The site is not located near a Main River or Ordinary Watercourse F. Can the site pass the Exception Test? 	abers 4.3, 4.4, 4.5 and 4.9.	

A. Can the develop

B. Can the develop

C. What is the cumu

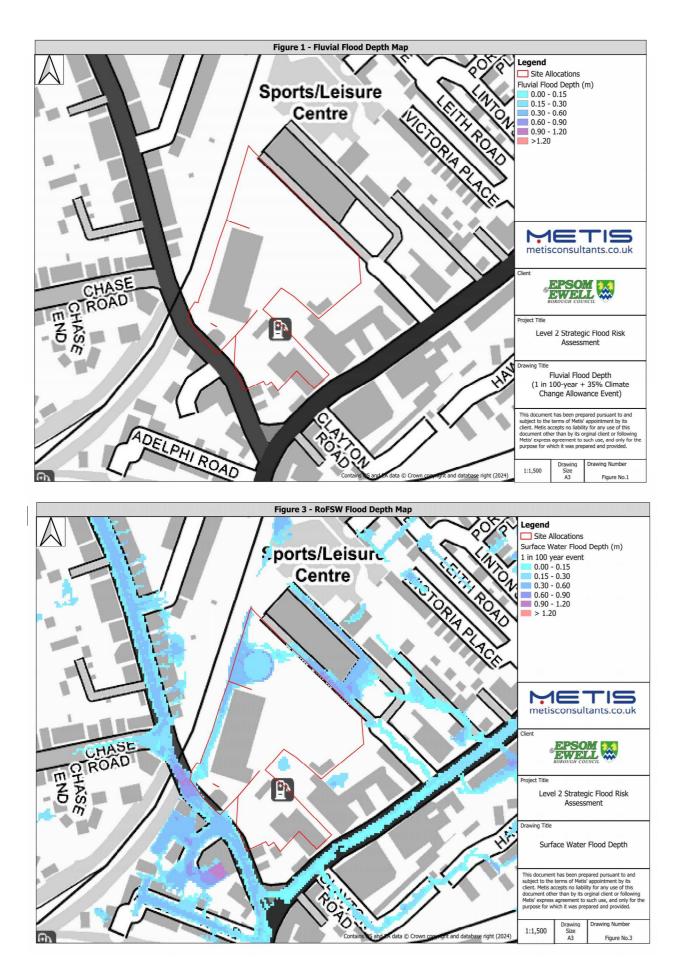
D. How can the dev

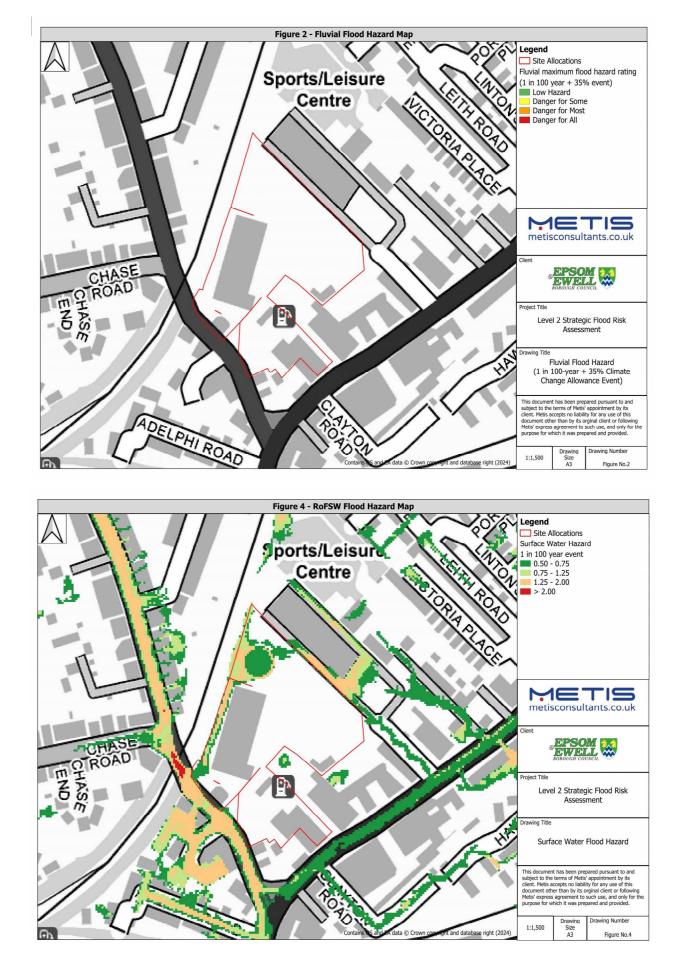
- Ensure that there
- By complying with

E. Will developmen

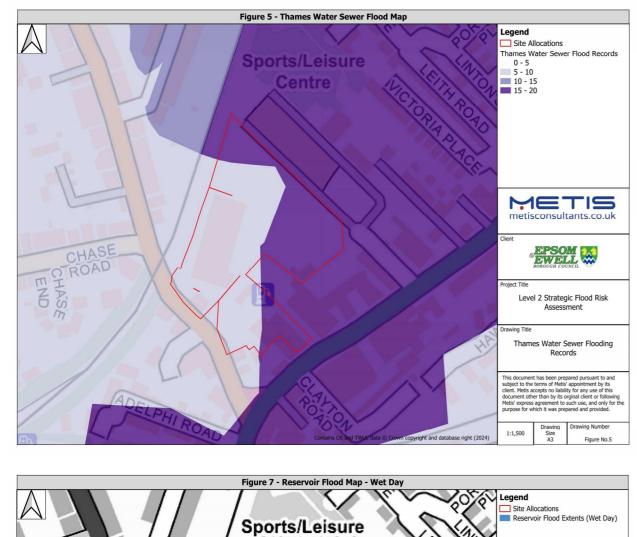
F. Can the site pass



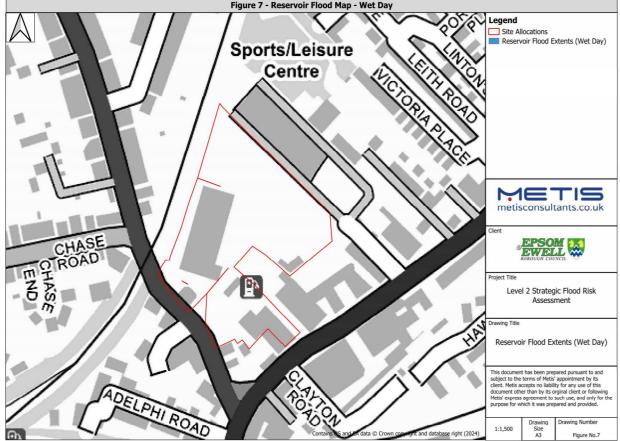














Flooding Map			
	Legend		
2 2 X	Site Al	locations	
	Groundwa		Risk
	< 25%	6 % <50%	
A YOU YA		% <30%	
the Val Vy	>= 75		
CALLAL VALLA			
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	client. Metis a	ccepts no liabili	ty for any use of this
	Metis' express	agreement to	rginal client or following such use, and only for the
/ /	purpose for w	hich it was prej	pared and provided.
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© Crown copyright and database right (2024)	1:1,500	Size A3	Figure No.6

ddress: Depot Re	oad, Epsom,	KT17 4RN		Area:	1.24 Ha						
				Site Refere	:: TOW004			(Current Ris	k Summary	/
							FI	uvial / Tida	al	6	Groundw
	Current Use	e			Proposed Use		FZ2	0	% of Site	<25	0
							FZ3a	0	% of Site	25-50	100
	Car Park				Residential and decked car	park	FZ3b	0	% of Site	50-75	0
							Su	rface Wate	er	>75	0
							1 in 30*	0	% of Site		Artifici
Current Vu	Inerability C	lassification	ı		Proposed Vulnerability Classi	fication	1 in 100*	0.06	% of Site	Reservoir	No
							1 in 1000*	15.38	% of Site		
L	ess Vulnerab	le			More Vulnerable				Sewer F		
									-	ominant po	ostcode
							* return perio	ds for potenti	ial flood even	ts	
						FLUVIAL / TIDAL					
	sk Assessme	<u> </u>	· · · · · · · · · · · · · · · · · · ·	11						1	
Parameter	FZ3b	FZ3a	*FZ3a+CC		· · · ·	f Flood Mechanism		Access / Eg		4	
eed of inundation	N/A	N/A	N/A	Hrs		dal risk is predicted at	N/A - No flu	-	risk is		N/A - N
Min. Depth	N/A	N/A	N/A	m	this site.		predicted at	l chis site.			
Max. Depth	N/A N/A	N/A	N/A	m m/c							
Max. Velocity Max Flood Level	N/A N/A	N/A N/A	N/A N/A	m/s m AOD							
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1in Ground Level	N/A N/A	N/A N/A	N/A N/A	m AOD							
Nax Flood Hazard	N/A	N/A	N/A	N/A							
Duration of Flood	N/A	N/A	N/A	Hrs							
e +35% Climate Change A	,		,								
Risk Asse	essment (Un	defended)									
Parameter	FZ3a	*FZ3a+CC	Units								
eed of inundation	N/A	N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m								
Max. Velocity	N/A	N/A	m/s								
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flo	ood Depth Map	Figure 2 - Fl	uvial Flood	Hazard Ma	<u>ap</u>	
Duration of Flood	N/A	N/A	Hrs								
						SURFACE WATER					
		essment	4 : 4000			1-					
Parameter	1 in 30		1 in 1000	Units		cess / Egress		-		Requiremen	
Min. Depth		0.00 - 0.15 0.15 - 0.30		m	J J	ress routes should be	Developm northern an				
Max. Depth Max. Velocity		0.15 - 0.30			Street where there	stern part of Upper High	there is high				
Max. Hazard		0.75 - 1.25				ould not be directed	See also S			-	
1 in 1000 annual probability	ļ					n part of Upper High	requiremen		-		-
	cription of Fl	-			Street.		stipulations				Jinene
203	•			orthern							
he site is at low ris			•								
he site is at low ris d south western ar											
d south western ar			-								
d south western ar at high risk of sur	pper High St	ieel is also a					L				
The site is at low ris d south western ar e at high risk of surf e eastern part of U Climate change is pa			-	lood	Figure 3 - RoFSW Fl	lood Depth Map	Figure 4 - Re	<u>oFSW</u> Flood	<u>d Ha</u> zard M	ар	



% of Site
% of Site
% of Site
% of Site
At risk?
6

Flood Defences There are no flood defences

in the vicinity of the site.

Flood Warning Area The EA Flood Warning

Service is not available at this site

Mitigation / FRA Requirements

vial / tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

• All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).



networks.

connections.

SITE ASSESSMENT - Depot Rd and Up

GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment
• The site is classified as having >=25% <50% susceptibility to groundwater	 This site is not risk of flooding from reservoirs.
flooding.	
 The site is underlain by Thanet Formation - Sand bedrock geology. 	
Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements
Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
are any subterranean flood risk issues that may require further investigation.	
• If there is a potential level of impact, mitigation actions must be proposed.	
Must be prepared by a chartered professional or specialist.	
PLANNING CONSIDERATIONS	
Safety of Development	
ns?	
acreasing flood risk elsewhere? age surface water runoff onsite through above ground SuDS and / or below gr al Plan.	ound attenuation. Green drainage infrastructure should be prioritised to provide wic
will flood rick increase?	
will flood risk increase? o 'More Vulnerable' as residential uses have been proposed. een space. This offers an opportunity to improve flood attenuation through the with runoff storage to prevent any increase in flood rick. An increase in imperi	
b 'More Vulnerable' as residential uses have been proposed. en space. This offers an opportunity to improve flood attenuation through the	e new development. neable area coverage on site will increase surface water runoff and flood risk if not
o 'More Vulnerable' as residential uses have been proposed. een space. This offers an opportunity to improve flood attenuation through the	
b 'More Vulnerable' as residential uses have been proposed. en space. This offers an opportunity to improve flood attenuation through the with runoff storage to prevent any increase in flood risk. An increase in impern we site where there is a higher risk of surface water flooding. per High Street. Egress should not be directed to the eastern part of Upper Hi	neable area coverage on site will increase surface water runoff and flood risk if not gh Street.
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A. Can the development be future proofed for climate change consid

SEWER **Risk Assessment**

• The site falls within a postcode area where there are 6

• The site is served by separate surface water and foul sewer

Mitigation Requirements • Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer

• Where historic flooding has occurred, the applicant must show how

this risk will be managed for the lifetime of the development.

reported flood incidents from sewer flooding.

Figure 5 - Thames Water Sewer Flood Map

• Yes. See SFRA - Level 2 Report mitigation requirement numbers 4.4

B. Can the development be designed safe throughout its lifetime wit

• Yes. The development must use surface water drainage techniques ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's N

C. What is the cumulative impact of the development land use change

• The development land use is moving from classification 'Less Vulneration'

• The site is currently a brownfield site with hardstanding areas and lit

• Development must mitigate any increase in impermeable area to the managed properly.

D. How can the development reduce risk overall?

• Direct development away from the northern and south western area

• Safe access and egress routes should be directed to the western part

• Ensure that there is no net increase in surface water runoff and inclu

• By complying with SFRA - Level 2 Report mitigation requirement nur

E. Will development require a flood risk permit/watercourse consen

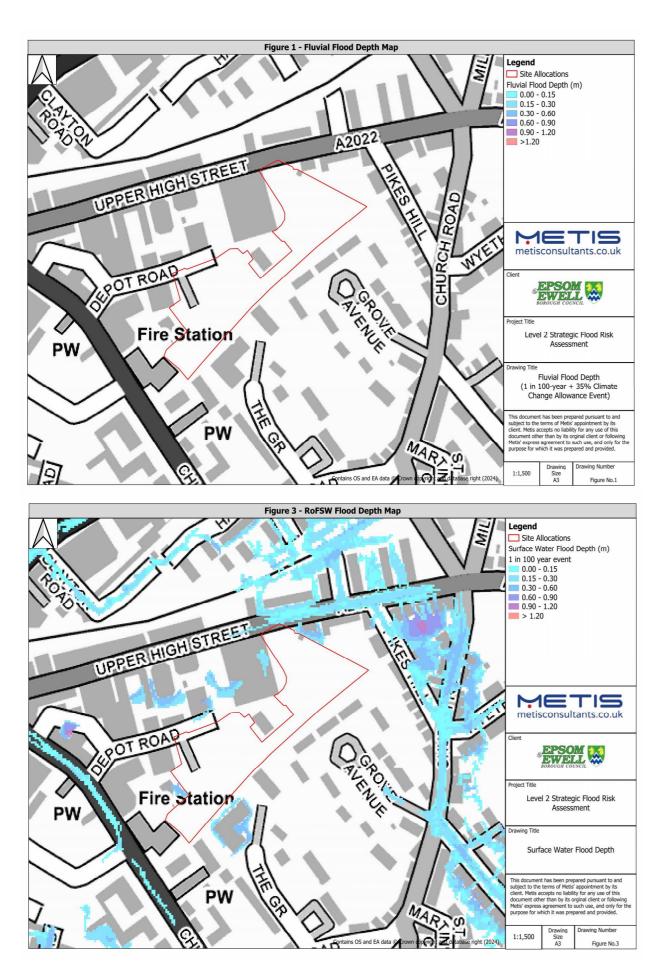
• No. The site is not located near a Main River or Ordinary Watercours

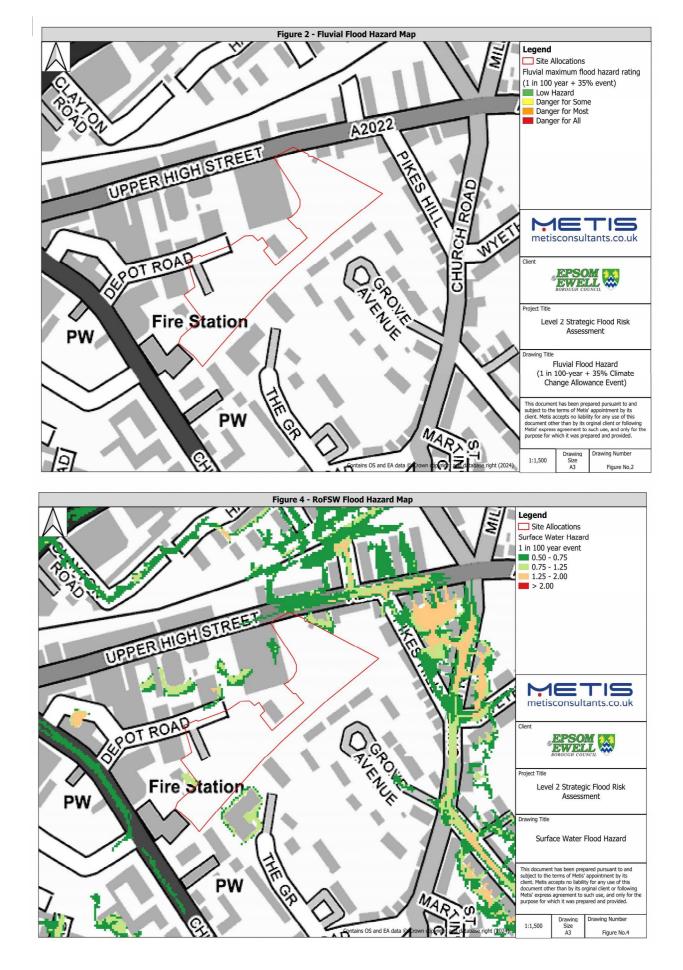
F. Can the site pass the Exception Test?

• Exception test not required as site is not located in Flood Zone 3a.











Reservoir Flood Extents (Wet Day)

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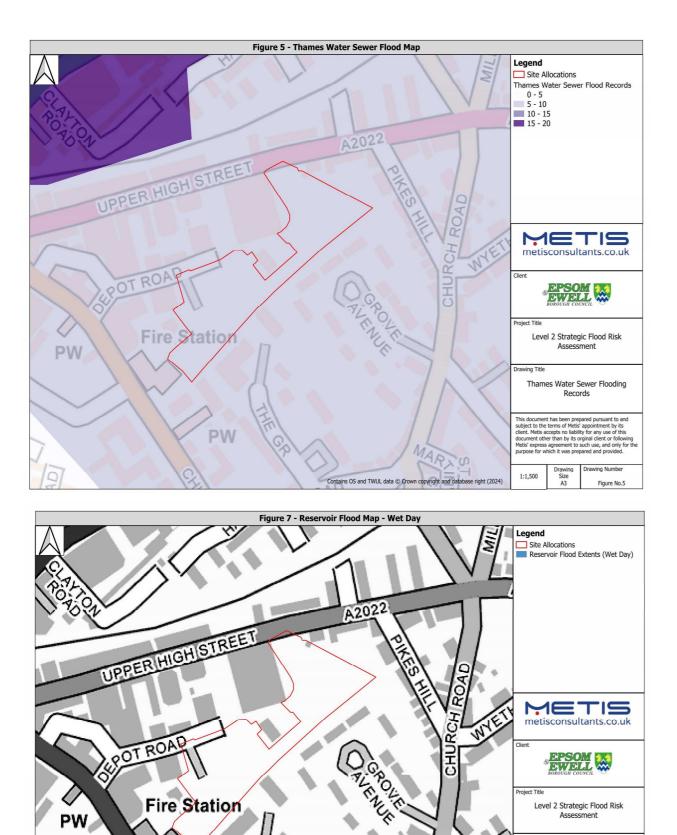
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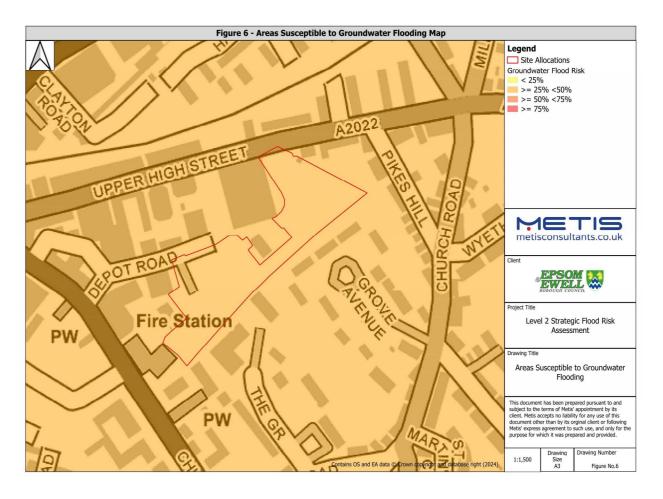
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Contains OS and EA data 📀

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						SITE ASSESSI	MENT - Swa	ail House					
Address: 15 Ashley	Road Ensor	n KT185A7		Area:	1.05 Ha								
	10000, 2000	II, KI 10 5AZ		Site Refere)10				Current Ris	k Summarv	1	
			I					Fl	uvial / Tid			Groundwa	ter
	Current Us	e			Pro	oposed Use		FZ2	0	% of Site	<25	0	% of S
						•		FZ3a	0	% of Site	25-50	0	% of S
	Services				R	esidential		FZ3b	0	% of Site	50-75	100	% of S
								Su	rface Wat	ter	>75	0	% of S
								1 in 30*	7.69	% of Site		Artificia	1
Current Vu	Inerability C	Classification	1		Proposed Vuln	erability Classification		1 in 100*	16.49	% of Site			
								1 in 1000*	53.78	% of Site	Reservoir	NO	At ris
I	ess Vulneral	ble			Mor	e Vulnerable				Sewer F	looding		
								No. Inci	dents witl	nin the pred	ominant po	ostcode	1
								* return period	ds for poten	tial flood even	ts		
						FLU	JVIAL / TIDAL						
	isk Assessme										1		
Parameter	FZ3b	FZ3a	*FZ3a+CC			escription of Flood Mechanism			Access / E	•	1		Mit
Speed of inundation	-	N/A	N/A	Hrs		No fluvial / tidal risk is predicted	dat	N/A - No flu		l risk is		N/A - No	fluvial / t
Min. Depth	N/A	N/A	N/A	m	this sit	е.		predicted at	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard	N/A N/A	N/A	N/A	N/A									
Duration of Flood The +35% Climate Change		N/A	N/A	Hrs									
	essment (Un			1									
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation		N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s	1									
Max. Hazard	N/A	N/A	N/A	1	Figure	1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard M	ap		
Duration of Flood	N/A	N/A	, Hrs	1								I	
	· ·	•		·		SUI	RFACE WATER						
	Risk Ass	essment			_								_
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk F	Requiremer	nts	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.15 - 0.30	m	Safe ad	ccess and egress routes should	be	Developm	ent shoul	d be directe	d away from	m the	
Max. Depth	> 1.20	> 1.20	> 1.20	m	directe	ed to the southeast of the site		central and	northern	areas of the	site where	there is	
Max. Velocity	0.50 - 1.00	1.00 - 2.00	> 2.00	m/s	toward	ls Heathcote Road where there	e is a	higher risk o			-		
Max. Hazard	1.25 - 2.00	> 2.00	> 2.00	N/A	lower	risk of flooding.		See also S					
*The 1 in 1000 annual probability				d impact of currer	nt risk			requiremen		4.4 for furt	her develop	ment	
	cription of F							stipulations					
 The site is at high r 													
the central and north	ern areas of	the site. Ash	nley Road is	at high									
risk of flooding.													
 Climate change wil 	increase ma	iximum velo	city of surfa	ace water									
flooding.						3 - RoFSW Flood Depth Map		Figure 4 - Ro					





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

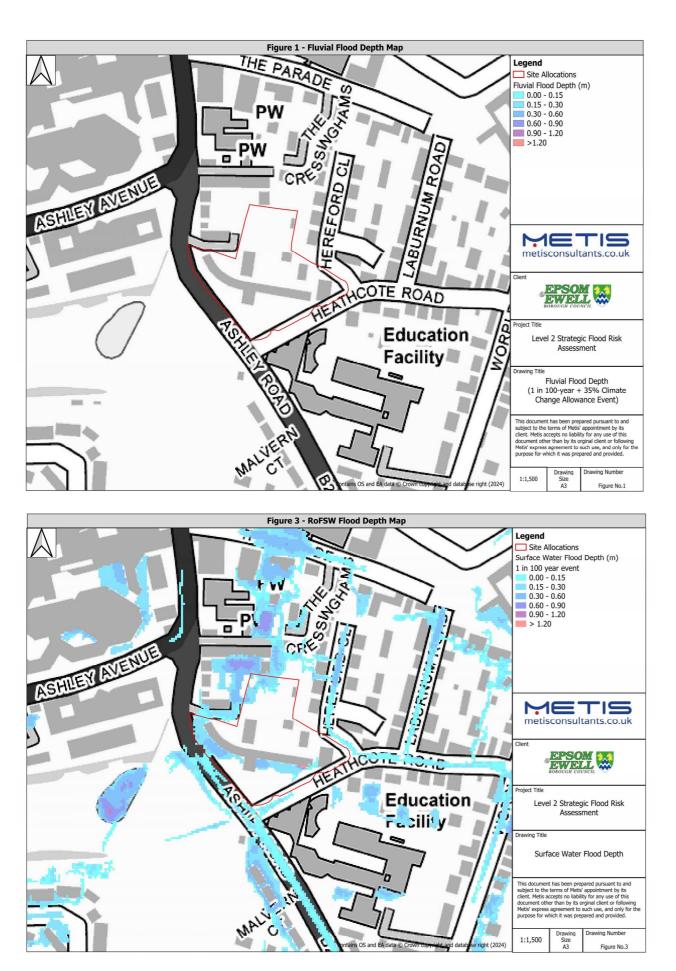
Mitigation - Surface Water Drainage

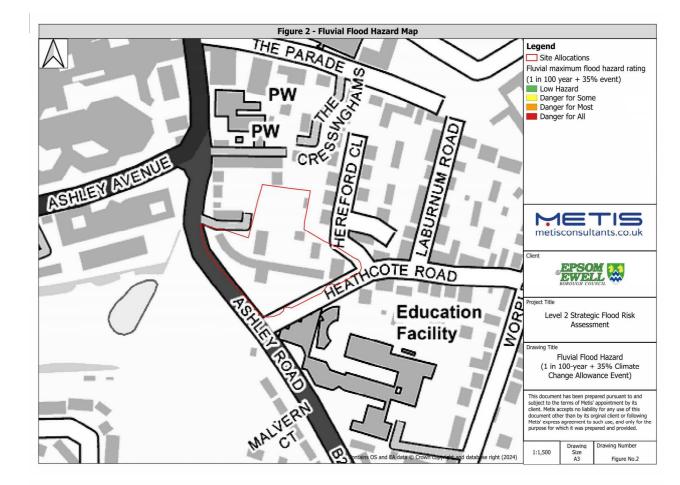
 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

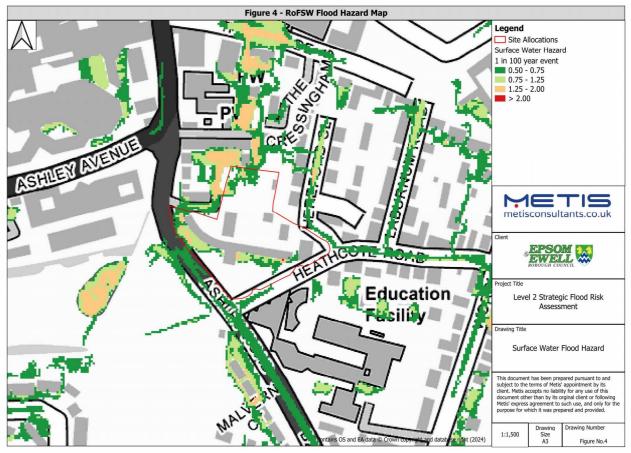
• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Swail House	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
The site falls within a postcode area where there is 1 reported	 The site is classified as having 50-75% susceptibility to groundwater 	 This site is not at risk of flooding from reservoirs.
ood incident from sewer flooding.	flooding.	
The site is assumed to be served by separate surface water and	• The site is underlain by River Terrace superficial deposits, Lambeth Group	
oul sewer networks, given their proximity to the site.	bedrock geology to the west of the site and Thanet Formation bedrock	
an sewer networks, given then proximity to the site.	geology to the east of the site.	
	geology to the east of the site.	
gure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
is historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
onnections.	• If there is a potential level of impact, mitigation actions must be proposed.	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
his risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
. Can the development be future proofed for climate change consic	Safety of Development	
3. Can the development be designed safe throughout its lifetime with Yes. The development must use surface water drainage techniques the cological / biodiversity benefits as per Policy S15 and S17 of EEBC's N	o manage surface water runoff onsite through above ground SuDS and / or below ground	l attenuation. Green drainage infrastructure should be prioritised to provide w
Yes. The development must use surface water drainage techniques to cological / biodiversity benefits as per Policy S15 and S17 of EEBC's N 2. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is covered by impermeable areas and green space. Development must mitigate any increase in impermeable area to the	to manage surface water runoff onsite through above ground SuDS and / or below ground ew Local Plan.	
Yes. The development must use surface water drainage techniques tecological / biodiversity benefits as per Policy S15 and S17 of EEBC's N C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is covered by impermeable areas and green space. Development must mitigate any increase in impermeable area to the nanaged properly.	to manage surface water runoff onsite through above ground SuDS and / or below ground ew Local Plan. ge and will flood risk increase? the 'More vulnerable' classification, as residential uses have been proposed.	
Yes. The development must use surface water drainage techniques to cological / biodiversity benefits as per Policy S15 and S17 of EEBC's N . What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is covered by impermeable areas and green space. Development must mitigate any increase in impermeable area to the hanaged properly.	to manage surface water runoff onsite through above ground SuDS and / or below ground ew Local Plan. ge and will flood risk increase? the 'More vulnerable' classification, as residential uses have been proposed. e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	
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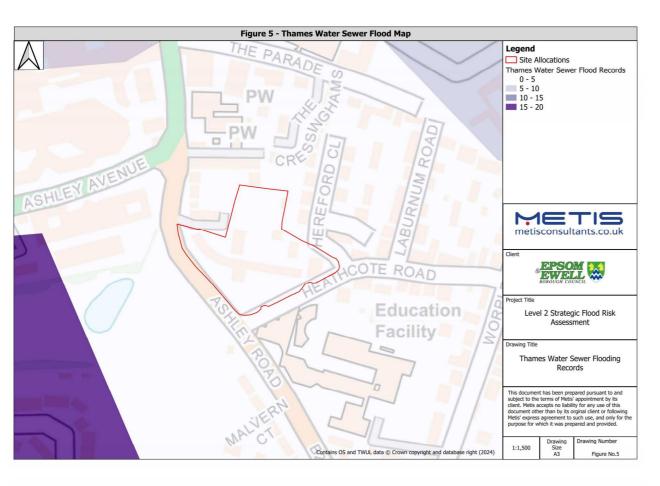


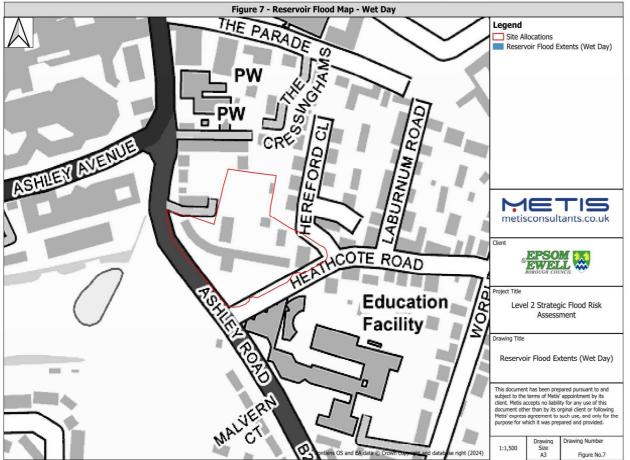


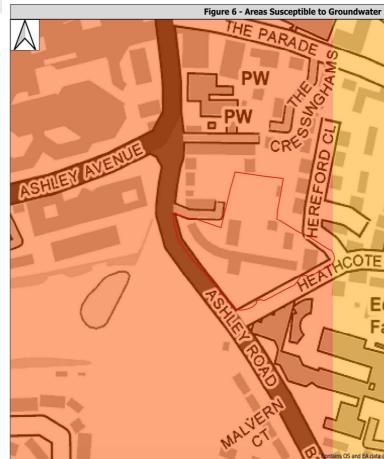














er Flooding Map	
	Legend
\sim	Site Allocations
	Groundwater Flood Risk
\sim	< 25%
	>= 50% <75%
	>= 75%
101	
X	
10	
15	
15	
IZL .	
12	
15	METIS
	metisconsultants.co.uk
	Client
ROAD	EPSOM
SAU	BOROUGII COUNCIL
Education	Project Title
a standard s	Level 2 Strategic Flood Risk Assessment
acility	Assessment
	Drawing Title
	Areas Susceptible to Groundwater
	Flooding
	This document has been prepared pursuant to and
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	Drawing Drawing Number
ta © Crown copyright and database right (2024)	1:1,500 Size
ta Crown copyright and database right (2024)	A3 Figure No.6

		VT10		A	0 4 2 11								
Address: 2-4 Ashle	y Road, Ep	som, K118	I F	Area:	0.12 Ha					Current Ris	k Cummon		
	5AX			Site Referen		DW020		r l	unial / Tie		· · · · ·		
	Current IIe	_				Drenegad Line			uvial / Tic	% of Site	<25	Groundwa	
	Current Us	e				Proposed Use		FZ2 FZ3a	0	% of Site	25-50	0	% of % of
	Services				Housin	g and commercial space		FZ3b	0	% of Site	50-75	100	% of
	Services				HOUSIN	g and commercial space			rface Wa		>75	0	% of
								1 in 30*	0	% of Site	215	Artificia	
Current Vul	nerability (Classificatior			Pronosed	Vulnerability Classification		1 in 100*	11.96	% of Site			<u> </u>
								1 in 1000*	15.66	_	Reservoir	NO	Ati
le	ess Vulnera	ble				More Vulnerable		2 11 2000	20100	-	looding		
								No Inci	dents wit	hin the pred		strode	T
								* return perio					
						FLUVIAL /	TIDAL	return perio					
Ris	k Assessm	ent (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism		Site	Access / E	gress	1		ſ
peed of inundation	N/A	N/A	N/A	Hrs	N/	A - No fluvial / tidal risk is predicted at		N/A - No flu		•	1	N/A - No	
Min. Depth	N/A	N/A	N/A	m	I *	s site.		predicted at	-				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	, N/A	m AOD									
Min Ground Level	N/A	N/A	, N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	N/A	N/A	N/A	Hrs									
The +35% Climate Change Al	owance event	is reviewed											
Risk Asse	ssment (Ur	defended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		<u>Fig</u>	ure 1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard Ma	ap		
Duration of Flood	N/A	N/A	Hrs										
						SURFACE V	NATER						
		sessment											-
Parameter	1 in 30		1 in 1000	Units		Site Access / Egress			-	Flood Risk F	-		4
Min. Depth	N/A	0.15 - 0.30		m		fe access and egress routes should be		· ·		d be directe			
Max. Depth	N/A		0.30 - 0.60	m		ected to the south of the site towards		western are			nere is high	er risk of	
Max. Velocity	N/A	0.00 - 0.25		-		hley Avenue where there is a lower risk		surface wat		•			
Max. Hazard	N/A	0.75 - 1.25				flooding.		• See also S				-	
he 1 in 1000 annual probability e				l impact of current r	risk			requiremen stipulations		4.4 for furth	ier develop	ment	
The site is at medium long the west of the s Climate change will i	n risk of sur site.		looding, par					supulations					
vater flooding.													
					F 1-	ure 3 - RoFSW Flood Depth Map		Figure 4 - Ro		1			-





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

lood incident from sewer flooding.flooding• The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site.• The site Group be• igure 5 - Thames Water Sewer Flood MapFigure 6Mitigation Requirements• Applicant must consult with TWUL to confirm if the development site as historically flooded. TWUL must agree to any proposed sewer onnections.• Applicant must show howWhere historic flooding has occurred, the applicant must show how• Must be	GROUNDWATER Risk Assessment e is classified as having 50-75% susceptibility to groundwater e is underlain by River Terrace superficial deposits and Lambeth edrock geology. Areas Susceptible to Groundwater Flooding Map Mitigation Requirements at should carry out a screening study (as a minimum) to establish if there bterranean flood risk issues that may require further investigation. is a potential level of impact, mitigation actions must be proposed. prepared by a chartered professional or specialist.	ARTIFICIAL Risk Assessment • This site is not at risk of flooding from reservoirs. • This site is not at risk of flooding from reservoirs. Figure 7 - Outline Reservoir Flood Map Mitigation Requirements N/A - No reservoir risk is predicted at this site.
 The site falls within a postcode area where there is 1 reported lood incident from sewer flooding. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. The site is assumed to be served by separate surface water and oul sewer networks, given their proximity to the site. Figure 5 - Thames Water Sewer Flood Map Figure 6 Mitigation Requirements Applicant must consult with TWUL to confirm if the development site are any set on and proposed sewer If there on the storic flooding has occurred, the applicant must show how 	e is classified as having 50-75% susceptibility to groundwater e is underlain by River Terrace superficial deposits and Lambeth edrock geology. Areas Susceptible to Groundwater Flooding Map <u>Mitigation Requirements</u> at should carry out a screening study (as a minimum) to establish if there ibterranean flood risk issues that may require further investigation. is a potential level of impact, mitigation actions must be proposed.	This site is not at risk of flooding from reservoirs. <u>Figure 7 - Outline Reservoir Flood Map</u> <u>Mitigation Requirements</u>
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Where historic flooding has occurred, the applicant must show how Must be		
this risk will be managed for the lifetime of the development.		
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	PLANNING CONSIDERATIONS	
	Safety of Development	
C. What is the cumulative impact of the development land use change and will floor • The development land use is changing from the 'Less vulnerable' to the 'More vuln		
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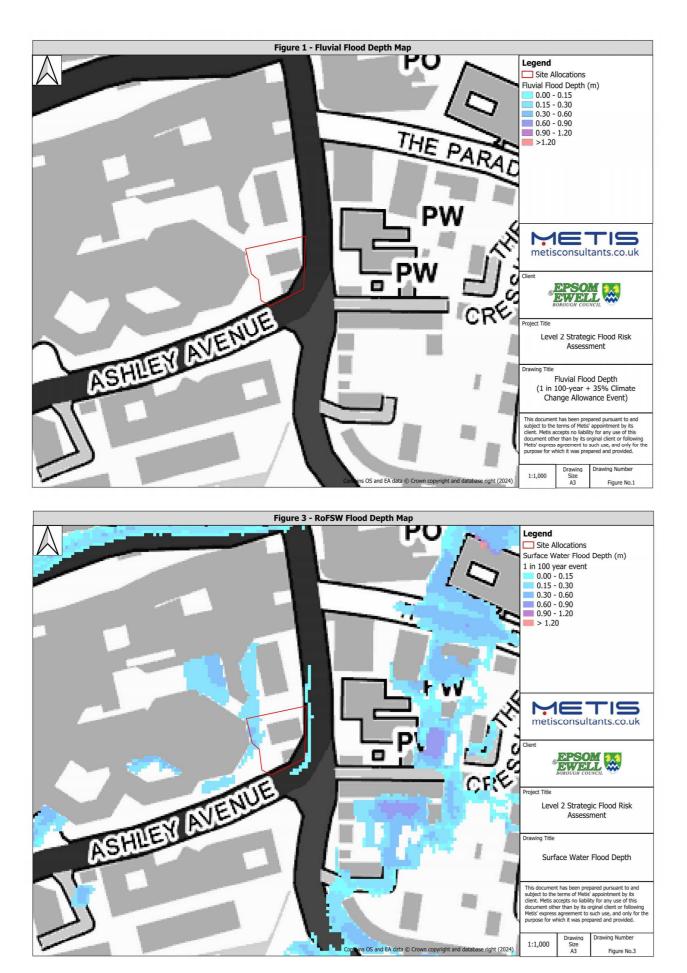
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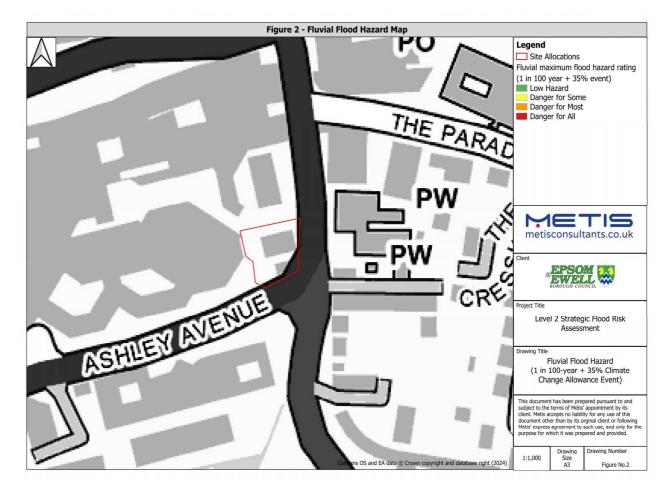
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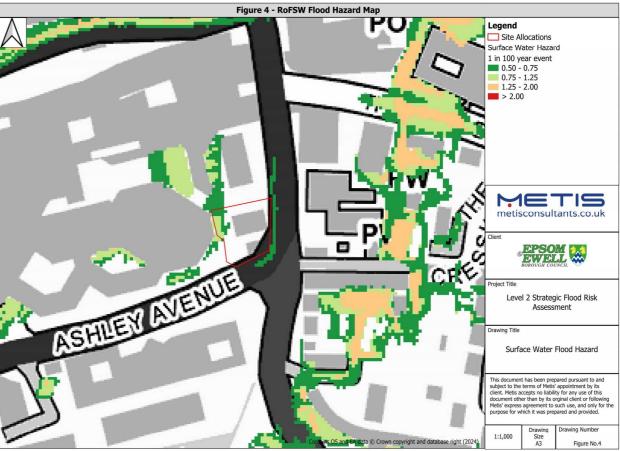
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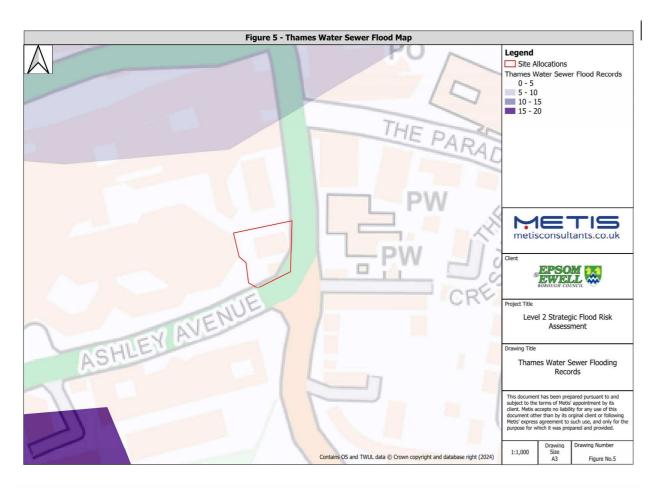


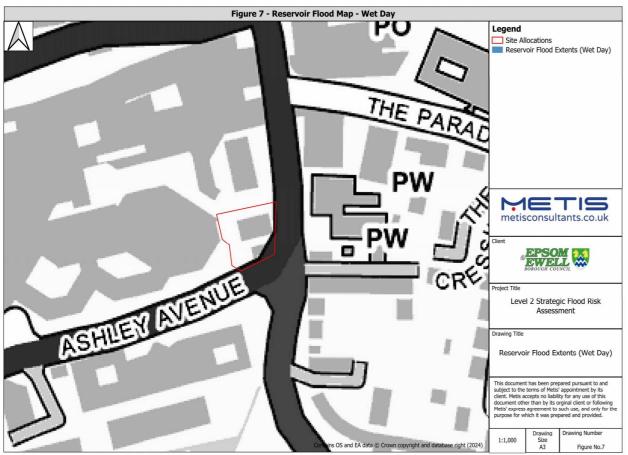


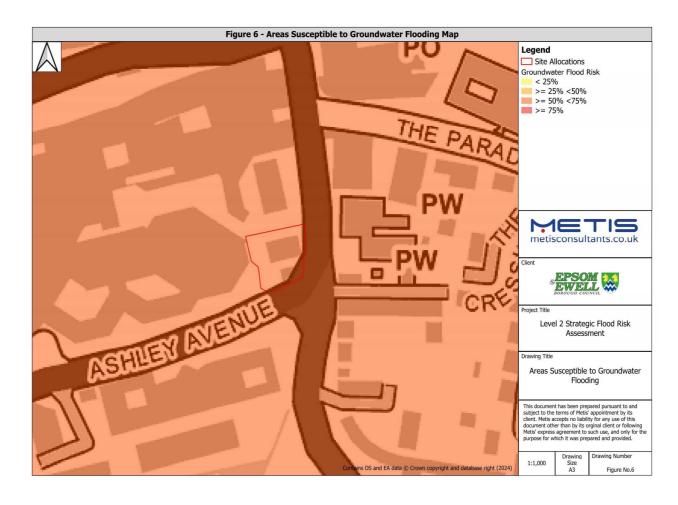














						SITE ASSESSM	ENT - To	wn Hall					
Address: The P	arade, Epsom	KT19 5BY		Area:	0.74 Ha								
				Site Refere	nce: TOW021					Current Ris	k Summary	,	
			-					FI	uvial / Tid	al	6	Groundwa	ter
	Current Us	e			Propose	d Use		FZ2	0	% of Site	<25	0	% of 9
					-			FZ3a	0	% of Site	25-50	0	% of 9
	Town Hall				Reside	ntial		FZ3b	0	% of Site	50-75	100	% of 9
								Su	rface Wat	er	>75	0	% of 9
							_	1 in 30*	19.16	% of Site		Artificia	i i
Current	/ulnerability (Classification	า		Proposed Vulnerabi	lity Classification		1 in 100*	37.02	% of Site			
								1 in 1000*	53.8	% of Site	Reservoir	NO	At ris
	Less Vulnera	ble			More Vul	nerable				Sewer I	looding		
								No. Inci	dents with	nin the pred	lominant po	stcode	1
								* return perio	ds for poten	tial flood even	its		
						FLUVIA	AL / TIDAL						
	Risk Assessme	ent (Defende	ed)										
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Descri	otion of Flood Mechanism		Site	Access / E	gress	1		М
Speed of inundatio	n N/A	N/A	N/A	Hrs	N/A - No flu	vial / tidal risk is predicted at		N/A - No flu	ıvial / tida	l risk is	1	N/A - No	fluvial /
Min. Depth	N/A	N/A	N/A	m	this site.			predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
, Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Leve		N/A	N/A	m AOD									
Min Ground Level		N/A	N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	-	N/A	N/A	Hrs									
The +35% Climate Chang	Allowance event	is reviewed											
Risk As	sessment (Un	defended)											
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	n N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	N/A	N/A	m										
Max. Velocity	N/A	N/A	m/s										
Max. Hazard	N/A	N/A	N/A		Figure 1 - Flu	uvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard M	ap		
Duration of Flood	N/A	N/A	Hrs										1
						SURFAC	CE WATER						
	Risk Ass	sessment											
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk I	Requiremen	nts	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.00 - 0.15	m	Safe access	and egress routes should be		Developm	nent shoul	d be directe	ed away fror	n the	7
Max. Depth	> 1.20	> 1.20	> 1.20	m	directed to t	the east of the site towards		western an	d northerr	n areas of th	e site where	e there is	
Max. Velocity	1.00 - 2.00	1.00 - 2.00	> 2.00	m/s	Dulshott Gre	een where there is a lower ris	k	higher risk o	of surface	water flood	ling.		
Max. Hazard	1.25 - 2.00	1.25 - 2.00	> 2.00	N/A	of flooding.			See also S	FRA - Leve	el 2 Report S	Section 4 mi	tigation	
The 1 in 1000 annual probabi	ity extent represents	the potential clima	te change adjuste	d impact of curren	trisk			requiremen	it number	4.4 for furt	her develop	ment	
De	scription of F	lood Mecha	nism					stipulations					
• The site is at high	risk of surface	water flood	ling, particu	larly along									
west and north of t			-	5									
	ill increase the	e maximum v	velocity and	1 I				1					
 Climate change w 													
 Climate change w maximum hazard o 													





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

Nitigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

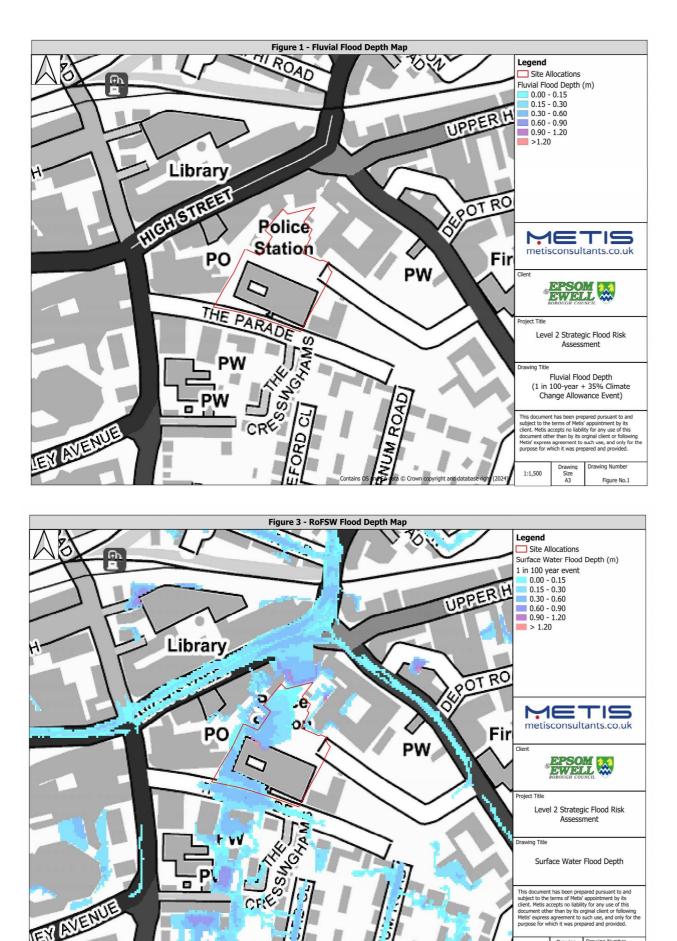
• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Town Hall	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
The site falls within a postcode area where there is 1 reported	 The site is classified as having 50-75% susceptibility to groundwater 	 This site is not at risk of flooding from reservoirs.
lood incident from sewer flooding.	flooding.	
The site is assumed to be served by separate surface water and	• The site is underlain by River Terrace superficial deposits and Lambeth	
oul sewer networks, given their proximity to the site.	Group bedrock geology.	
igure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
as historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	NYA - No reservoir risk is predicted at this site.
onnections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
his risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
. Can the development be future proofed for climate change consid	Safety of Development	
Yes. The development must use surface water drainage techniques t	to manage surface water runoff onsite through above ground SuDS and / or below ground	attenuation. Green drainage infrastructure should be prioritised to provide with
Yes. The development must use surface water drainage techniques to cological / biodiversity benefits as per Policy S15 and S17 of EEBC's N A. What is the cumulative impact of the development land use chang The development land use is changing from the 'Less vulnerable' to The site is mostly covered by impermeable areas with little green sp Development must mitigate any increase in impermeable area to the	to manage surface water runoff onsite through above ground SuDS and / or below ground lew Local Plan.	nt.
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's NC. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the site is mostly covered by impermeable areas with little green sp Development must mitigate any increase in impermeable area to the managed properly. 	to manage surface water runoff onsite through above ground SuDS and / or below ground lew Local Plan. ge and will flood risk increase? the 'More vulnerable' classification, as residential uses have been proposed. ace. This offers an opportunity to improve flood attenuation through the new development	nt.
Yes. The development must use surface water drainage techniques to cological / biodiversity benefits as per Policy S15 and S17 of EEBC's N 2. What is the cumulative impact of the development land use chang The development land use is changing from the 'Less vulnerable' to the The site is mostly covered by impermeable areas with little green sp Development must mitigate any increase in impermeable area to the nanaged properly.	to manage surface water runoff onsite through above ground SuDS and / or below ground lew Local Plan. ge and will flood risk increase? the 'More vulnerable' classification, as residential uses have been proposed. ace. This offers an opportunity to improve flood attenuation through the new development e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	nt.
 Yes. The development must use surface water drainage techniques tecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Network is the cumulative impact of the development land use change. The development land use is changing from the 'Less vulnerable' to the site is mostly covered by impermeable areas with little green specified properly. Development must mitigate any increase in impermeable area to the nanaged properly. Development away from western and northern areas of the site is a specified properly. 	to manage surface water runoff onsite through above ground SuDS and / or below ground lew Local Plan. ge and will flood risk increase? the 'More vulnerable' classification, as residential uses have been proposed. ace. This offers an opportunity to improve flood attenuation through the new development e site with runoff storage to prevent any increase in flood risk. An increase in impermeable	nt.
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E. W

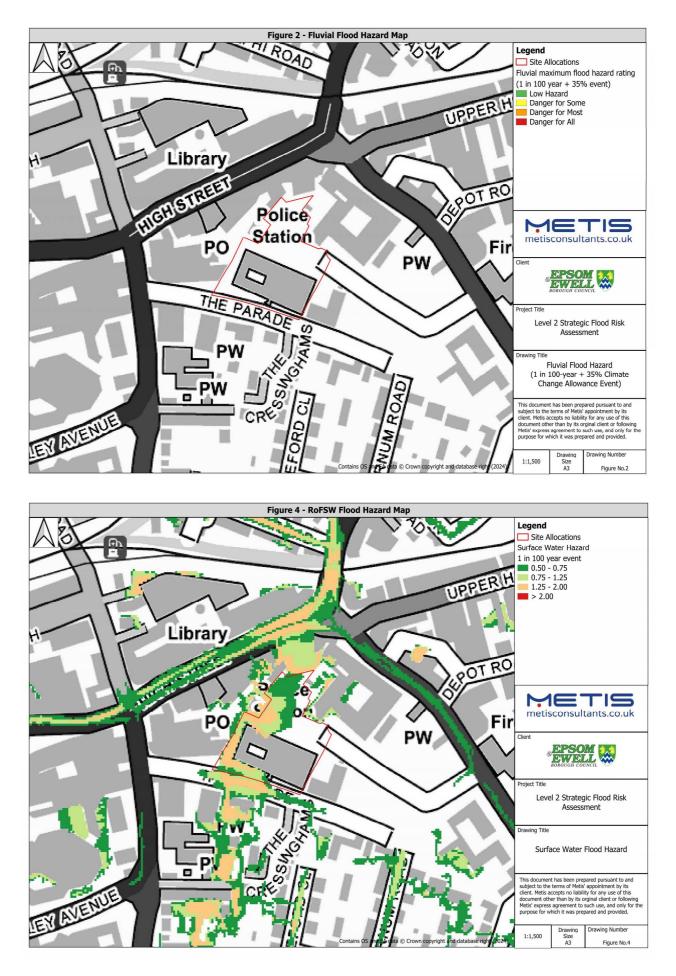
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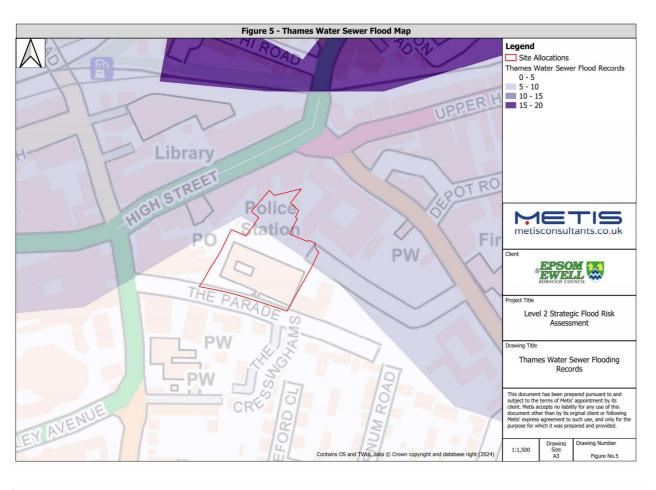


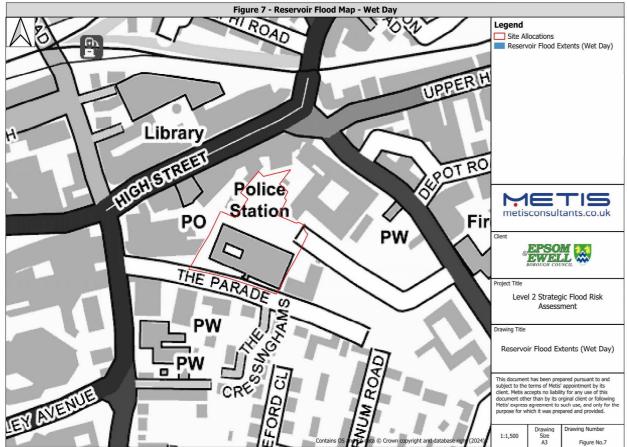
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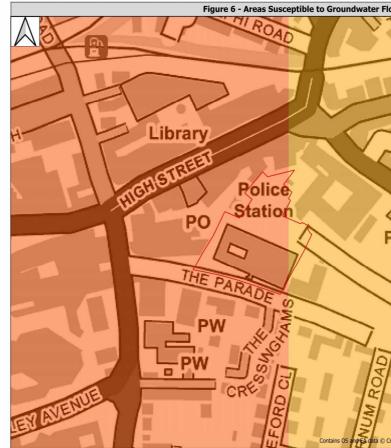
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ooding Map			
UPPERH		ter Flood F % 5% <50% 1% <75%	Risk
OFFOT RO	Client	consult	TIS tants.co.uk
Ś	Project Title	2 Strateg Assessi	ic Flood Risk
	This documen subject to the	Flood t has been prep terms of Metis'	pared pursuant to and appointment by its
rown copyright and database right (2024)	client. Metis a document oth Metis' express	ccepts no liabili er than by its o agreement to :	ty for any use of this rginal client or following such use, and only for the pared and provided. Drawing Number Figure No.6

Address: Ashley Re	oad, Epsom,	KT18 5 A B		Area:	2 10	Ha							
Address. Ashley N	Jau, Epsoni,	KI 10 JAD		Site Refere		TOW024				Current Ris	k Summarv	,	
]	Site Kelere	ince.	10//024		FI	uvial / Tid			iroundwa	tor
	Current Use	9				Proposed Use		FZ2	0	% of Site		0	% of Si
		-						FZ3a	0	% of Site	25-50	0	% of S
Mixed Use	e (including i	residential)			Mixe	ed Use (including residential)		FZ3b	0	% of Site	50-75	100	% of S
								Su	rface Wat	er	>75	0	% of S
								1 in 30*	3.22	% of Site		Artificia	1
Current Vu	Inerability C	Classification	า		Propos	sed Vulnerability Classification		1 in 100*	6.81	% of Site			
								1 in 1000*	11	% of Site	Reservoir	NO	At ris
M	ore Vulnera	ble				More Vulnerable				Sewer F	looding		
								No. Inci	dents with	nin the pred	lominant po	stcode	1
								* return perio	ds for poten	tial flood even	its		
						FLUVIAL / T	IDAL						
	sk Assessme	-									-		
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units		Description of Flood Mechanism			Access / E	-	4		Mi
Speed of inundation	N/A	N/A	N/A	Hrs		N/A - No fluvial / tidal risk is predicted at		N/A - No flu	-	l risk is		N/A - No	fluvial / t
Min. Depth	N/A	N/A	N/A	m		this site.		predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m									
Max. Velocity	N/A	N/A	N/A	m/s									
Max Flood Level	N/A	N/A	N/A	m AOD									
Max Ground Level	N/A	N/A	N/A	m AOD									
Min Ground Level	N/A	N/A	N/A	m AOD									
Max Flood Hazard	N/A	N/A	N/A	N/A									
Duration of Flood	N/A	N/A	N/A	Hrs									
The +35% Climate Change A	ssment (Un												
Parameter	FZ3a	*FZ3a+CC	Units										
Speed of inundation	N/A	N/A	Hrs										
Min. Depth	N/A	N/A	m										
Max. Depth	, N/A	N/A	m										
Max. Velocity	, N/A	N/A	m/s										
Max. Hazard	, N/A	N/A	N/A			Figure 1 - Fluvial Flood Depth Map		Figure 2 - Fl	uvial Floo	d Hazard Ma	ap		
Duration of Flood	N/A	N/A	Hrs								-	l	
	· · · ·	· · · · · · · · · · · · · · · · · · ·				SURFACE W	ATER						
	Risk Ass	essment											
Parameter	1 in 30	1 in 100	1 in 1000	Units		Site Access / Egress		Mi	tigation -	Flood Risk F	Requiremer	its	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.00 - 0.15	m		Safe access and egress routes should be		 Developm 	ent shoul	d be directe	ed away from	n areas of	:
Max. Depth	0.60 - 0.90	0.60 - 0.90	0.60 - 0.90	m		directed to the south of the site towards		the site at h	igh risk, p	articularly t	he southerr	and	
Max. Velocity	0.50 - 1.00	0.50 - 1.00	1.00 - 2.00	m/s		Ashley Avenue where there is a lower risk		eastern are	as.				
Max. Hazard	1.25 - 2.00	1.25 - 2.00	1.25 - 2.00	N/A		of flooding.		 See also S 	FRA - Leve	el 2 Report S	Section 4 mi	tigation	
The 1 in 1000 annual probability	extent represents t	the potential clima	te change adjuste	d impact of currer	nt risk			requiremen	t number	4.4 for furth	her develop	ment	
Desc	ription of F	lood Mecha	nism					stipulations					
 There are small area 													
 Climate change will 	increase the	e maximum '	velocity of s	urface									
water flooding.													
						Figure 3 - RoFSW Flood Depth Map		Figure 4 - R	oFSW/ Floo	d Hazard M	lan		





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

SEWER	
Risk Assessment	

• The site falls within a postcode area where there is 1 reported flood incident from sewer flooding.

• There is a combined sewer to the north east of the site. There are separate foul and surface water sewers in proximity to the site.

Figure 5 - Thames Water Sewer Flood Map

Mitigation Requirements

- Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections.
- Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development.

	SITE ASSESSMENT - Ashley Centre & Global Hou	se
	GROUNDWATER	ARTIFICIAL
	Risk Assessment	Risk Assessment
	• The site is classified as having 50-75% susceptibility to groundwater	This site is not at risk of flooding from reservoirs.
	flooding.	
	 The site is mostly underlain by Lambeth Group bedrock geology and River 	
	Terrace superficial deposits, however on its southern western side it is	
	underlain by London Clay bedrock geology.	
	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
	Mitigation Requirements	Mitigation Requirements
	 Applicant should carry out a screening study (as a minimum) to establish if there 	N/A - No reservoir risk is predicted at this site.
	are any subterranean flood risk issues that may require further investigation.	
	 If there is a potential level of impact, mitigation actions must be proposed. 	
	 Must be prepared by a chartered professional or specialist. 	
	PLANNING CONSIDERATIONS	
	Safety of Development	
ioi	ns?	
mi Th	will flood risk increase? xed use (including residential). is offers an opportunity to improve flood attenuation through the new develo /ith runoff storage to prevent any increase in flood risk. An increase in imperm	oment. eable area coverage on site will increase surface water runoff and flood risk if not
	e southern and eastern areas. By Avenue where there is a lower risk of flooding.	
hle Su[DS or an alternative sustainable approach to manage surface water to comply v I.3, 4.4, 4.5 and 4.9.	vith Policy S15 in EEBC's draft Local Plan.

A. Can the development be future proofed for climate change consideration

• Yes. See SFRA - Level 2 Report mitigation requirement numbers 4.4 and 4.

B. Can the development be designed safe throughout its lifetime without

• Yes. The development must use surface water drainage techniques to man ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's New Lo

C. What is the cumulative impact of the development land use change and

• The development land use is not changing. It is proposed to be used for m

• The site is mostly covered by impermeable areas with little green space. The site is mostly covered by impermeable areas with little green space.

• Development must mitigate any increase in impermeable area to the site managed properly.

D. How can the development reduce risk overall?

• Direct development away from areas of the site at high risk, particularly th

• Safe access routes should be directed to the south of the site towards Ash

- Ensure that there is no net increase in surface water runoff and include Su
- By complying with SFRA Level 2 Report mitigation requirement numbers

E. Will development require a flood risk permit/watercourse consent?

• No. The site is not located near a Main River or Ordinary Watercourse.

F. Can the site pass the Exception Test?

• The Exception Test is not required as the site is not located within Flood Zo

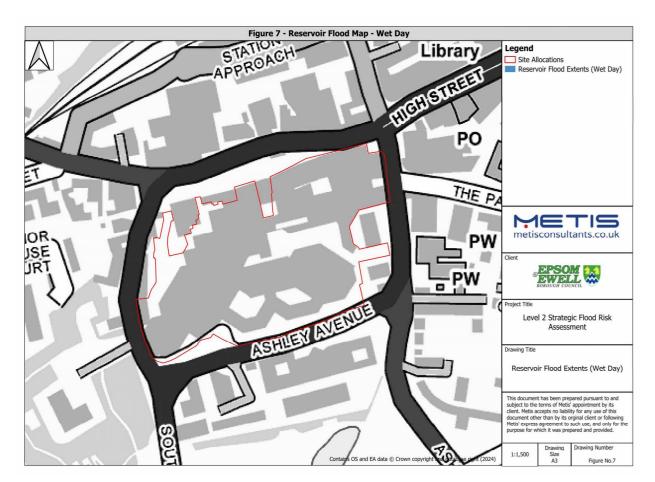


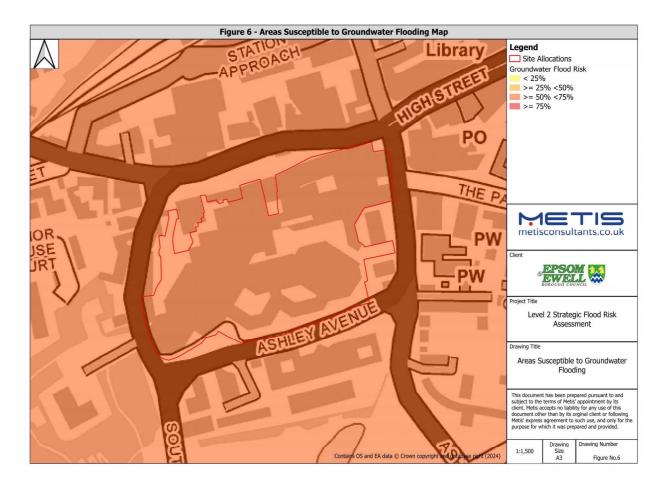














					SITE ASSESSMENT -						
Address: Kiln Lar	ne, Epsom, K	T17 1EG		Area:	0.67 Ha				-		
			J	Site Refere	ence: TOW058			Current Ris		•	
	6				Provide Autor		uvial / Tid			Groundwa	-
	Current Use	2			Proposed Use	FZ2 FZ3a	0	% of Site % of Site	<25 25-50	0	% of S % of S
	Commercial	1			Residential / Mixed / Employment	FZ3b	0	% of Site	50-75	0	% of S
	Commercial	I					Irface Wat		>75	0	% of S
						1 in 30*	0.03	% of Site	215	Artificia	
Current Vu	Inerability C	lassification	ı		Proposed Vulnerability Classification	1 in 100*	6.26	% of Site			
					· · · ·	1 in 1000*	31.4	% of Site	Reservoir	NO	At ris
L	ess Vulnerab	ole			More Vulnerable			Sewer F		1	
						No. Inc	dents with	nin the pred		ostcode	20
						* return perio	ds for poten	tial flood event	is .		
					FLUVIAL /	TIDAL					
Ri	sk Assessme	nt (Defende	ed)								
Parameter	FZ3b	FZ3a	*FZ3a+CC	Units	Description of Flood Mechanism	Site	Access / E	gress			Mit
Speed of inundation	N/A	N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted at	N/A - No flu	ıvial / tida	risk is		N/A - No	fluvial / ti
Min. Depth	N/A	N/A	N/A	m	this site.	predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m							
Max. Velocity	N/A	N/A	N/A	m/s							
Max Flood Level	N/A	N/A	N/A	m AOD							
Max Ground Level	N/A	N/A	N/A	m AOD							
Min Ground Level	N/A	N/A	N/A	m AOD							
Max Flood Hazard	N/A	N/A	N/A	N/A							
Duration of Flood	N/A	N/A	N/A	Hrs							
The +35% Climate Change A											
Parameter	essment (Uno FZ3a	*FZ3a+CC	Units								
Speed of inundation	N/A	N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m								
Max. Velocity	N/A	N/A	m/s								
, Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map	Figure 2 - F	uvial Floo	d Hazard Ma	ip		
Duration of Flood	N/A	N/A	Hrs		<u> </u>				-		
					SURFACE V	VATER					
	Risk Asso	essment									
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egress	Mi	tigation -	Flood Risk R	equireme	nts	
Min. Depth	0.00 - 0.15	0.00 - 0.15	0.00 - 0.15	m	Safe access and egress routes should be	Developm	nent shoul	d be directe	d away fro	m the	
Max. Depth	0.15 - 0.30	0.15 - 0.30	0.30 - 0.60	m	directed to the west of the site towards	southern ar	nd central	areas of the	site where	e there is	
Max. Velocity	0.00 - 0.25	0.50 - 1.00	1.00 - 2.00	m/s	Conifer Park or the north west of the site	higher risk (of surface	water floodi	ng.		
Max. Hazard	0.50 - 0.75	0.75 - 1.25	1.25 - 2.00	N/A	towards Weston Road where there is a	• See also S	FRA - Leve	el 2 Report S	ection 4 m	itigation	
The 1 in 1000 annual probability	extent represents t	he potential clima	te change adjuste	d impact of curre	nt risk lower risk of flooding.	requiremer	it number	4.4 for furth	er develop	oment	
	cription of Fl	ood Mecha	nism			stipulations					
• The site is at low to	increase the			-							
• The site is at low to • Climate change will			r .	r flooding							
The site is at low to Climate change will		hazard of su	irface water	noounig.		I					
The site is at low to		hazard of su	irface wate	noounig.	Figure 3 - RoFSW Flood Depth Map			d Hazard M			





Site is not in an area benefitting from flood defences.

Flood Warning Area

The EA Flood Warning Service is not available at this site.

itigation / FRA Requirements

tidal risk is predicted at this site.

Mitigation - Surface Water Drainage

 All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma.

• Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG).

	SITE ASSESSMENT - Wilsons (Site 3)	
SEWER	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
 The site falls within a postcode area where there are 20 reported flood incidents from sewer flooding. The site is assumed to be served by separate surface water and foul sewer networks, given the existence of foul sewers at the 	 The site is classified as having 25-50% susceptibility to groundwater flooding. The site is underlain by River Terrace superficial deposits on its north western side and Lambeth Group bedrock geology. 	• This site is not at risk of flooding from reservoirs.
site and the proximity of surface water sewers to the site.	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements		
 Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections. Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development. 	Mitigation Requirements • Applicant should carry out a screening study (as a minimum) to establish if there are any subterranean flood risk issues that may require further investigation. • If there is a potential level of impact, mitigation actions must be proposed. • Must be prepared by a chartered professional or specialist.	Mitigation Requirements N/A - No reservoir risk is predicted at this site.
	PLANNING CONSIDERATIONS	
	Safety of Development	
 ecological / biodiversity benefits as per Policy S15 and S17 of EEBC's Net C. What is the cumulative impact of the development land use change The development land use is changing from the 'Less vulnerable' to the The site is mostly covered by impermeable areas with little green spate. Development must mitigate any increase in impermeable area to the managed properly. D. How can the development reduce risk overall? Direct development away from southern and central areas of the site Safe access routes should be directed to the west of the site towards 	e and will flood risk increase? he 'More vulnerable' classification, as residential uses have been proposed. ce. This offers an opportunity to improve flood attenuation through the new development site with runoff storage to prevent any increase in flood risk. An increase in impermeable Conifer Park or the north west of the site towards Weston Road where there is a lower of de SuDS or an alternative sustainable approach to manage surface water to comply with bers 4.3, 4.4, 4.5 and 4.9.	nt. e area coverage on site will increase surface water runoff and flood risk if not isk of flooding.

A. Can the development be future proofed for climate

B. Can the development be designed safe througho

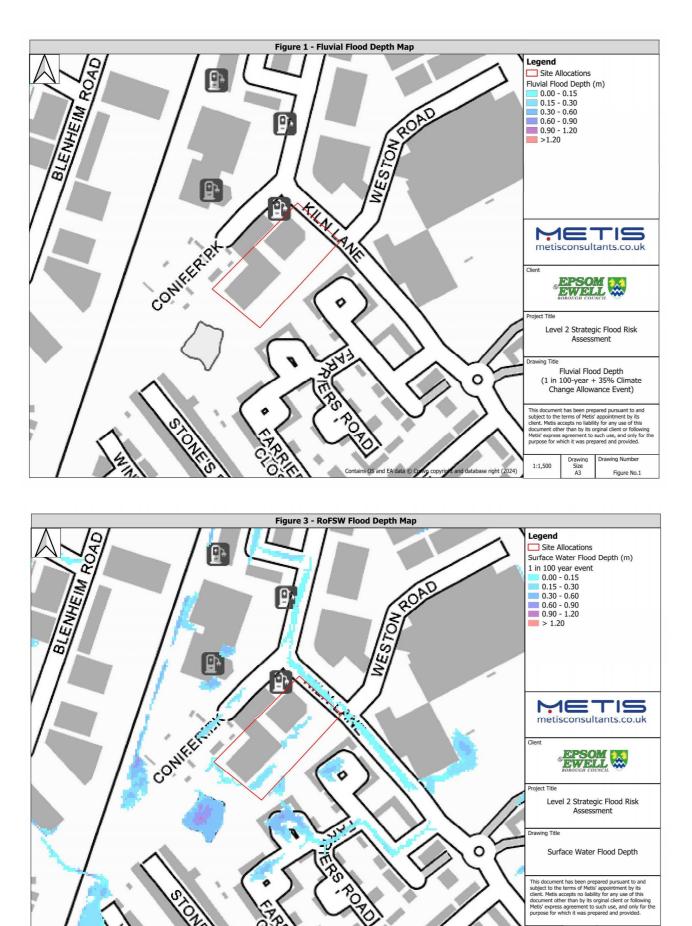
C. What is the cumulative impact of the developme

D. How can the development reduce risk overall?

E. Will development require a flood risk permit/wa

F. Can the site pass the Exception Test?



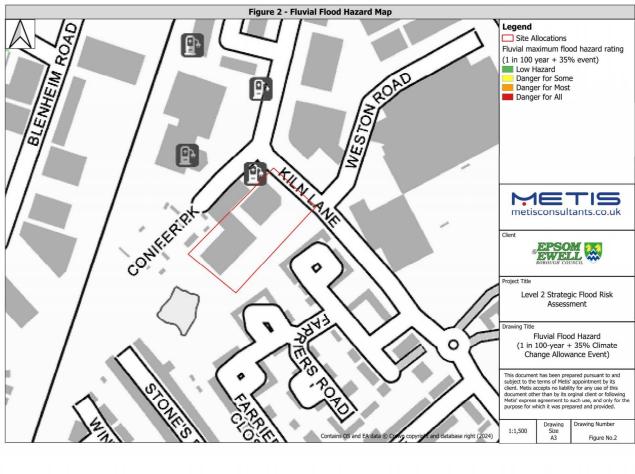


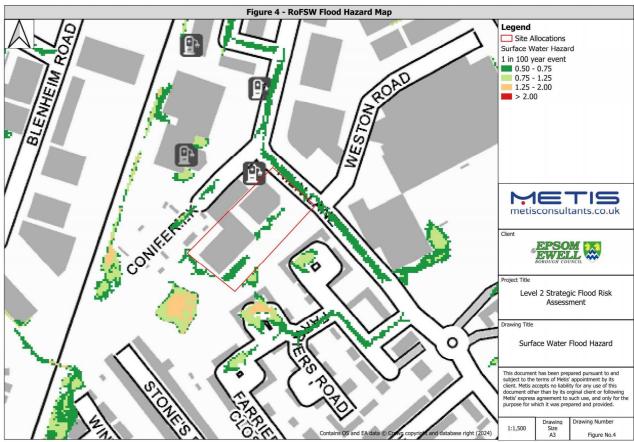
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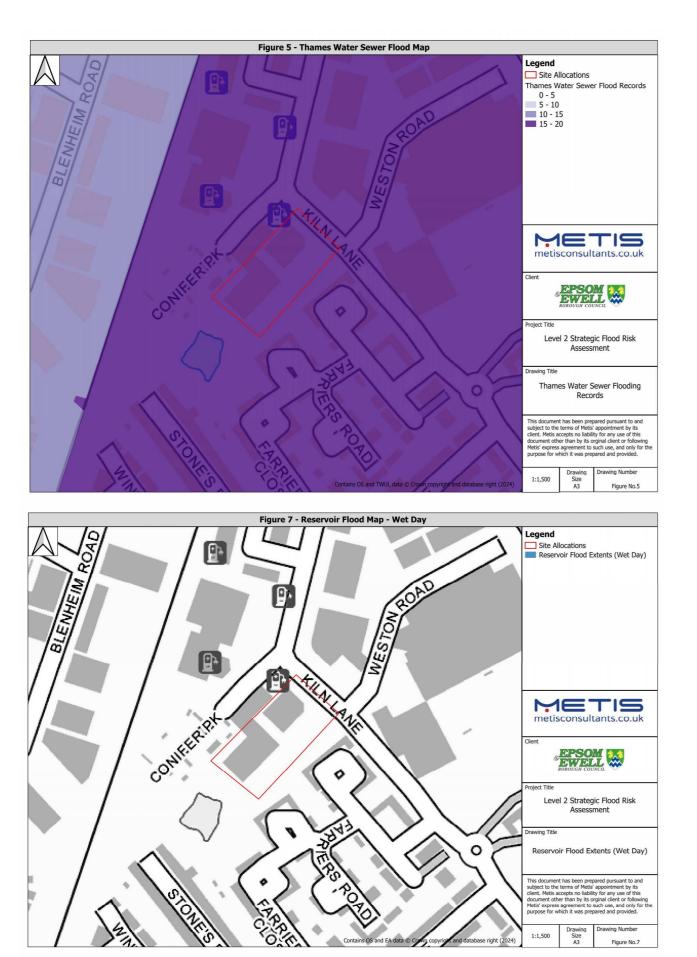
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looding Map					
DAD		ter Flood F % % <50% % <75%	Risk		
	Δ		TIS		
	Client	EPSO EWEL	tants.co.uk		
		l 2 Strateg Assess	ic Flood Risk ment		
NºF	Drawing Title Areas Susceptible to Groundwater Flooding				
	This document has been prepared pursuant to and subject to the terms of Netls' appointment by its client. Metia scepts no liability for any use of this document other than by its orginal client of rollowing Hetis' express agreement to such use, and only for het purpose for which it was prepared and provided.				
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ddress: Church St	reet, Epsom	, KT18 5AB		Area:	0.64 Ha						
			Site Reference:	TOW060 & TOW018		Current Risk Summary					
			1			FI	uvial / Tid	al	G	iroundwat	ter
	Current Us	9			Proposed Use	FZ2	0	% of Site	<25	0	% of S
						FZ3a	0	% of Site	25-50	100	% of S
Police & ambulance	e station (Cla	ss E & SuiGe	en), clinic	Residenti	al (Care home) - planning permission; residential	FZ3b	0	% of Site	50-75	0	% of S
						Su	irface Wat	er	>75	0	% of 9
						1 in 30*	0	% of Site		Artificial	
Current Vu	Inerability C	lassification	1		Proposed Vulnerability Classification	1 in 100*	10.54	% of Site	Reservoir	No	At ri
More Vulnerable			1 in 1000*	33.1	% of Site	INCSCI VOII	NO				
			More Vulnerable		Sewer Flooding						
									ominant po	stcode	6
						* return perio	ds for potent	ial flood even	ts		
					FLUVIAL / TIDA	L					
		ent (Defend							1		
Parameter	FZ3b	FZ3a	*FZ3a+CC		Description of Flood Mechanism		Access / E	-	4	N1/4	
eed of inundation	N/A	N/A	N/A	Hrs	N/A - No fluvial / tidal risk is predicted at this	N/A - No flu	-	risk is		N/A - No f	fluvial /
Min. Depth	N/A	N/A	N/A	m	site.	predicted a	t this site.				
Max. Depth	N/A	N/A	N/A	m							
Max. Velocity	N/A	N/A	N/A	m/s							
Max Flood Level	N/A	N/A	N/A	m AOD							
ax Ground Level	N/A	N/A	N/A	m AOD							
lin Ground Level	N/A	N/A N/A	N/A N/A	m AOD N/A							
lax Flood Hazard uration of Flood	N/A N/A	N/A N/A	N/A N/A	Hrs							
e +35% Climate Change A		-	N/A	1113							
	essment (Un]							
Parameter	FZ3a	*FZ3a+CC	Units								
eed of inundation	N/A	N/A	Hrs								
Min. Depth	N/A	N/A	m								
Max. Depth	N/A	N/A	m								
Max. Velocity	N/A	N/A	m/s								
Max. Hazard	N/A	N/A	N/A		Figure 1 - Fluvial Flood Depth Map	Figure 2 - Fl	uvial Flood	d Hazard Ma	ap		
uration of Flood	N/A	N/A	Hrs								
			l	1	SURFACE WAT	ER					
	Risk As	sessment									
Parameter	1 in 30	1 in 100	1 in 1000	Units	Site Access / Egress	Mi	Mitigation - Flood Risk Requirements				
Min. Depth	N/A	0.00 - 0.15	< 0.15	m	Safe access and egress routes should be directed	 Developm 	nent should	d be directe	d away fror	n the	
Max. Depth	N/A	0.30 - 0.60	0.30 - 0.60	m	to the south east of the site towards Worple	central and	southerna	areas of the	site where	there is	
Max. Velocity	N/A	0.50 - 1.00			Road where there is a lower risk of flooding.	higher risk o			•		
Max. Hazard	N/A	0.75 - 1.25	1.25 - 2.00	N/A	Egress should not be directed to Church Street			-	Section 4 mi	-	
IVIAX. Hazaru	-			d impact of current risk	and Laburnum Road as there is significant flood	requiremer		4.4 for furth	her develop	ment	
1 in 1000 annual probability	•	Flood Mecha			risk in this area.	stipulations					
1 in 1000 annual probability Des	ium risk of surf		-								
1 in 1000 annual probability Des e site is at low to med		I RUAD TO THE S		-							
1 in 1000 annual probability Des the site is at low to med thern areas of the com	plex. Laburnun	eet to the nort	II East is at its								1
1 in 1000 annual probability Des e site is at low to med hern areas of the com	plex. Laburnun	eet to the nort	ii east is at ior			I					
1 in 1000 annual probability	plex. Laburnun and Church Str			and velocity at	Figure 3 - RoFSW Flood Depth Map	Figure 4 - R					



Flood Defences There are no flood defences

in the vicinity of the site.

Flood Warning Area

The EA Flood Warning Service is not available at this site

Mitigation / FRA Requirements

luvial / tidal risk is predicted at this site.

Mitigation - Surface Water Drainage All planning applications need a flood risk assessment and/or drainage strategy with a completed SuDS/Drainage proforma. Developments should apply the Sustainable Drainage Hierarchy set out in the 'Flood Risk and Coastal Change' section of the Planning Practice Guidance (PPG). Ground investigations are required to confirm whether infiltration SuDS are suitable.

SEWER		
	GROUNDWATER	ARTIFICIAL
Risk Assessment	Risk Assessment	Risk Assessment
 The site falls within a postcode area where there are 6 	• The site is classified as having >=25% <50% susceptibility to groundwater	 This site is not risk of flooding from reservoirs.
reported flood incidents from sewer flooding.	flooding.	
• The site is served by separate surface water and foul sewer	 The site is underlain by Thanet Formation - Sand bedrock geology and 	
networks.	superficial River Terrace Deposits.	
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir Flood Map
Mitigation Requirements	Mitigation Requirements	Mitigation Requirements
Applicant must consult with TWUL to confirm if the development site	Applicant should carry out a screening study (as a minimum) to establish if there	N/A - No reservoir risk is predicted at this site.
has historically flooded. TWUL must agree to any proposed sewer	are any subterranean flood risk issues that may require further investigation.	
connections.	 If there is a potential level of impact, mitigation actions must be proposed. 	
Where historic flooding has occurred, the applicant must show how	 Must be prepared by a chartered professional or specialist. 	
this risk will be managed for the lifetime of the development.		
	PLANNING CONSIDERATIONS	
A. Can the development be future proofed for climate change consid	Safety of Development	
 Development must mitigate any increase in impermeable area to the 	ge and will flood risk increase? rable', as residential uses have been proposed. tle green space. This offers an opportunity to improve flood attenuation through the new	
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of 		
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of this area. 	e site where there is higher risk of surface water flooding. f the site towards Worple Road and Laburnum Road where there is a lower risk of flooding	g. Egress should not be directed to Church Street as there is significant flood risk i
this area.	e site where there is higher risk of surface water flooding. If the site towards Worple Road and Laburnum Road where there is a lower risk of flooding de SuDS or an alternative sustainable approach to manage surface water to comply with 1	g. Egress should not be directed to Church Street as there is significant flood risk i
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of this area. Ensure that there is no net increase in surface water runoff and inclu By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent 	e site where there is higher risk of surface water flooding. If the site towards Worple Road and Laburnum Road where there is a lower risk of flooding de SuDS or an alternative sustainable approach to manage surface water to comply with 1 hbers 4.3, 4.4, 4.5 and 4.9.	g. Egress should not be directed to Church Street as there is significant flood risk i
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of this area. Ensure that there is no net increase in surface water runoff and inclu By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent 	e site where there is higher risk of surface water flooding. If the site towards Worple Road and Laburnum Road where there is a lower risk of flooding de SuDS or an alternative sustainable approach to manage surface water to comply with 1 hbers 4.3, 4.4, 4.5 and 4.9.	g. Egress should not be directed to Church Street as there is significant flood risk i
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of this area. Ensure that there is no net increase in surface water runoff and inclu By complying with SFRA - Level 2 Report mitigation requirement num E. Will development require a flood risk permit/watercourse consent No. The site is not located near a Main River or Ordinary Watercourse 	e site where there is higher risk of surface water flooding. If the site towards Worple Road and Laburnum Road where there is a lower risk of flooding de SuDS or an alternative sustainable approach to manage surface water to comply with 1 hbers 4.3, 4.4, 4.5 and 4.9.	g. Egress should not be directed to Church Street as there is significant flood risk i
 D. How can the development reduce risk overall? Direct development away from the central and southern areas of the Safe access and egress routes should be directed to the south east of this area. Ensure that there is no net increase in surface water runoff and inclu 	e site where there is higher risk of surface water flooding. If the site towards Worple Road and Laburnum Road where there is a lower risk of flooding de SuDS or an alternative sustainable approach to manage surface water to comply with 1 hbers 4.3, 4.4, 4.5 and 4.9.	g. Egress should not be directed to Church Street as there is significant flood risk i

A. Can the development k

B. Can the development b

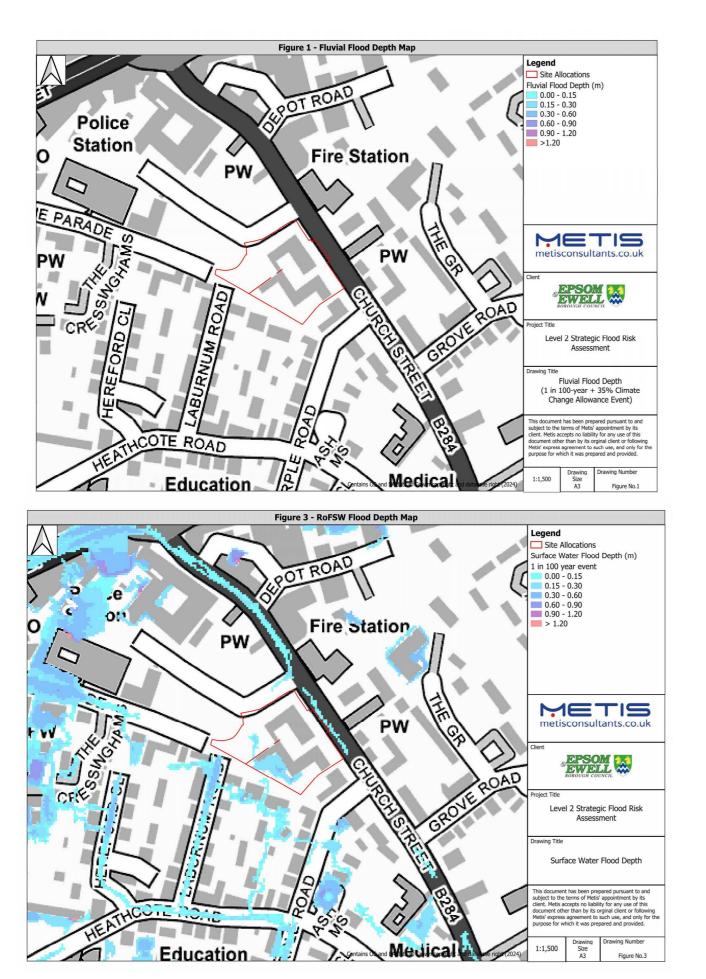
C. What is the cumulative

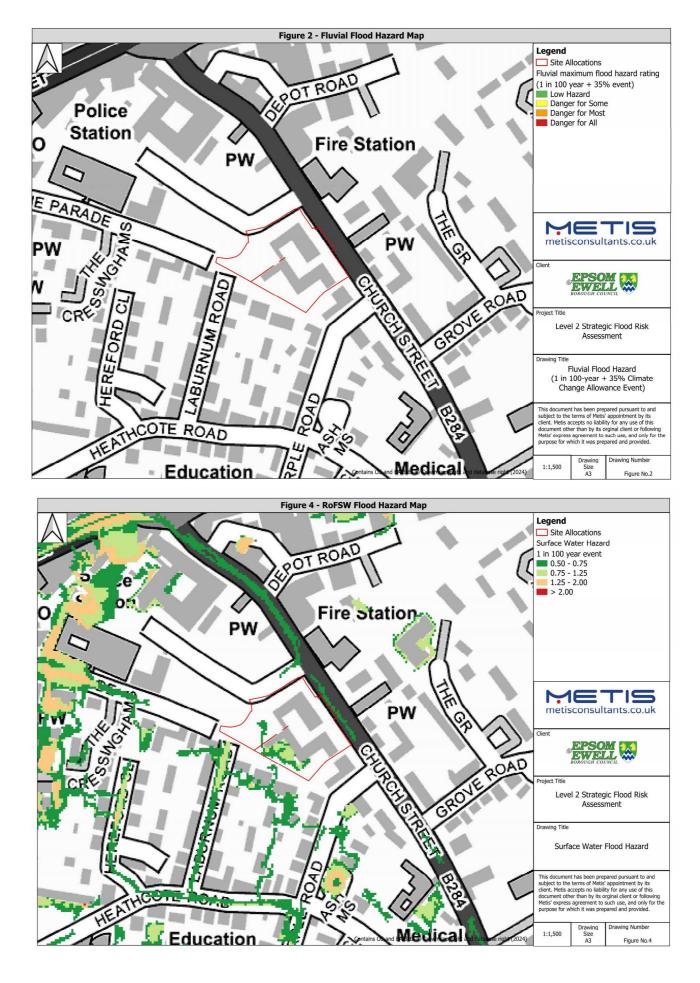
D. How can the developm

E. Will development requi

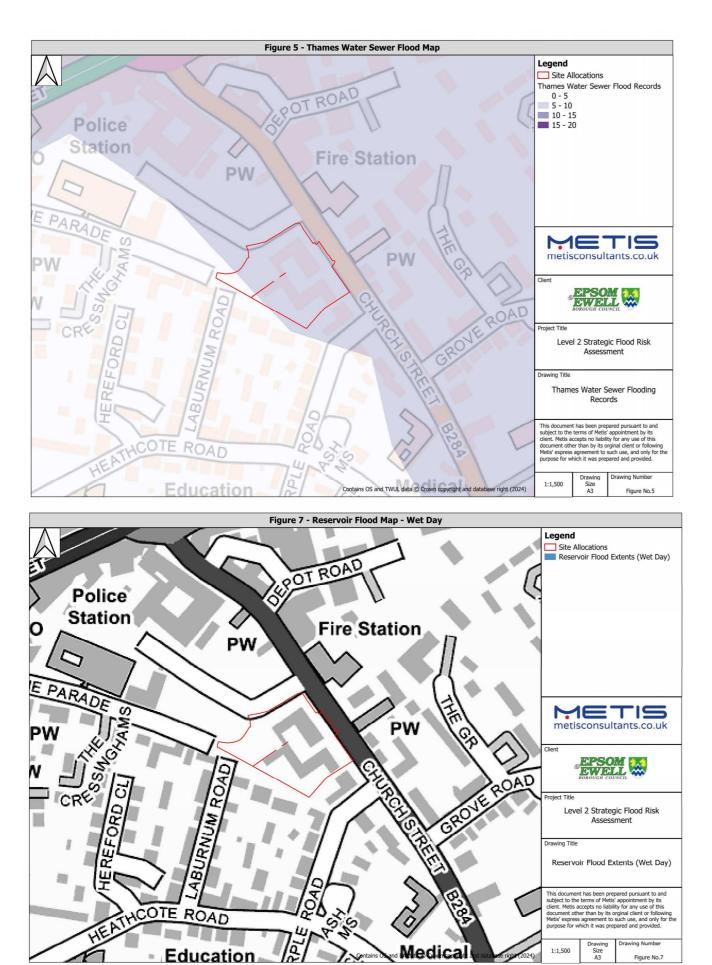
F. Can the site pass the Ex















ater Flooding Map						
ater nooung map						
on.	Legend Site Allocations Groundwater Flood Risk < 25% > = 25% <50% > = 50% <75% > = 75%					
W	metisconsultants.co.uk					
20AD						
GROVE ROAD	Project Title Level 2 Strategic Flood Risk Assessment					
1 Alexandre	Drawing Title Areas Susceptible to Groundwater Flooding					
	This document has been prepared pursuant to and subject to the terms of Metis' appointment by its client. Metis accepts no liability for any use of this document other than by its orginal client or following Metis' express ogreement to such use, and only for the purpose for which it was prepared and provided.					
A data C Grave countant and database right (2024)	1:1,500 Drawing Size A3 Figure No.6					