							SITE ASSESSMENT - Joh	n Lewis	(North	West)				
Address: Horse Fa	ir, Kingston	. KT1 1TE		Area:	0.69	На								_
	, 0			Site Reference: SA 029			Current Risk Summary							
					Fluvial / Tidal			Groundwater						
	Current Use			Proposed Use			]	FZ2	81.5	% of Site	<25	0	%	
									FZ3a	23.6	% of Site	25-50	0	%
Commercial			Mixed Use (Residential, Commercial) - 93 residential units					FZ3b	3.7	% of Site	50-75	100	%	
								Surface Water		>75	0	%		
				^ 				-	1 in 30	0	% of Site		Artificial	
Current Vul	Current Vulnerability Classification			Proposed Vulnerability Classification			]	1 in 100	0	% of Site	Reservoir	Y	A	
									1 in 1000	0.2	% of Site	Canal	Ν	A
Less Vulnerable			More Vulnerable				Sewer Flooding			Town Centre				
							No. Inc	idents	65	Y/N	Ŷ			
								-						
							FLUVIAL	/ TIDAL						
Ris	sk Assessme	ent (Defend	ed)											
Parameter	FZ3b	FZ3a	*FZ3a+CC	3a+CC Units Description of Flood Mechanism		]	Site Access / Egress							

Parameter	FZ3b	FZ3a	*FZ3a+CC	Units				
Speed of inundation	N/D	N/D	N/D	Hrs				
Min. Depth	0.241	0.0093	0.1924	m				
Max. Depth	0.7709	1.3963	2.6923	m				
Max. Velocity	0	0.2463	0.7293	m/s				
Max Flood Level	6.1519	7.0492	9.5366	m AOD				
Max Ground Level	10.67	10.67	10.67	m AOD				
Min Ground Level	4.96	4.96	4.96	m AOD				
Max Flood Hazard	1.2043	1.8291	3.9563	N/A				
Duration of Flood	N/D	N/D	N/D	Hrs				
* The +35% Climate Change All	owance event (c	entral allowance	is reviewed	1				
Risk Asse								
Parameter	FZ3a	*FZ3a+CC	Units					
Speed of inundation	N/D	N/D	Hrs					
Min. Depth	0.0009	N/D	m					
Max. Depth	1.9359	N/D	m					
Max. Velocity	0.3421	N/D	m/s					
Max. Hazard	2.3159	N/D	N/A					
Duration of Flood	N/D	N/D	Hrs					

**Risk Assessment** 

\*The 1 in 1000 annual probability extent represents the potential climate change adjusted impact of current risk

**Description of Flood Mechanism** 

• Vicarage Road to the north of the site is predicted to be at risk from

• Climate change is predicted to increase the flood extent, velocity,

1 in 100

0

0

0

0

1 in 1000

0.00-0.15

0.60-0.90

1.00-2.00

1.25-2.00

Units

m

m

m/s

N/A

1 in 30

0

0

0

0

• The site is currently at low risk of surface water flooding.

surface water flooding in the 1 in 1000 year event.

Description of Flood Mechanism • The site is at risk of flooding from the River

Thames, immediately west of the site. • The predicted flood risk extent for climate change scenario for the River Thames covers most of the site area other than a small area in the south east section of the site. Climate change is predicted to increase the flood extent, as well as the flood depth, hazard, and velocity.

• In the undefended scenario, flood extent, depth, velocity and hazard is increased in the 1 in 100 year flood event.

\*Note: EA are due to update River Thames model\*

Site Access / Egress

Figure 1 - Fluvial Flood Depth Map

# SURFACE WATER

# **Mitigation - Flood Risk Requirements** • Development should be directed away from the western edge of the site. • See SFRA - Level 2 Report mitigation requirement numbers 4.2, 4.4, 4.5 and 4.6 for further development stipulations.

Figure 4 - RoFSW Flood Hazard Map

• Safe access / egress routes

should be identified (see SW

• Safe refuge areas must be

change on the site.

provided on site to account for

the predicted impact of climate

Figure 2 - Fluvial Flood Hazard Map

section).

Safe egress routes should be directed
towards Horse Fair to the south east of the
Safe egress routes should be directed towards Horse Fair to the south east of the site where there is a lower risk of flooding.

Figure 3 - RoFSW Flood Depth Map

Parameter

Min. Depth

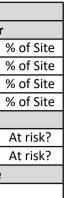
Max. Depth

Max. Velocity

Max. Hazard

depth, and hazard.





# Flood Defences

This site is not in an area benefitting from flood defences.

### Flood Warning Area

The EA Flood Warning Service is available at this site.

#### **Mitigation / FRA Requirements**

• Only water compatible or essential uses (subject to the Exception Test) are permitted in FZ3b (the western edge of the site). There can be no increase in residential units in FZ3b. Development in this area which is located above the design flood level is still designated as functional floodplain.

• Self-contained basement dwellings and bedrooms are not permitted in FZ2 (the majority of the site). See SFRA Level 2 Report mitigation requirement number 4.10 for additional basement stipulations. • A FRA must be submitted as part of a planning application.

• Include appropriate flood resistance or resilience measures to address predicted flood depths.

• See SFRA Level 2 Report mitigation requirement numbers 4.2, 4.3, 4.4, 4.5 and 4.6 for further development stipulations.

• Develop a Flood Emergency and Evacuation Plan for the site.

• Site users should be signed up to EA's Flood Warning Service.

### Mitigation - Surface Water Drainage

• A Kingston SuDS Proforma must be submitted with the planning application. • Developments should apply the Sustainable Drainage Hierarchy set out in Policy SI13 of the London Plan.

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

	SITE ASSESSMENT - John Lewis (North West)	
SEWER	GROUNDWATER	
Risk Assessment	Risk Assessment	
<ul> <li>The site falls within a postcode area where there are 65 reported flood incidents from sewer flooding.</li> <li>The site is served by separate surface water and foul sewer networks.</li> </ul>	<ul> <li>The site is classified as having &gt;=50% &lt;75% susceptibility to groundwater flooding.</li> <li>The site is underlain by London Clay bedrock geology.</li> </ul>	<ul> <li>This site is at risk of flooding from Bourne Ditch, Chertsey Settling, Ha Island Barn, King George VI, Queen Walton (Bessborough and Knight), a</li> <li>The reservoir extent map predicts will be at high-risk of flooding.</li> </ul>
Figure 5 - Thames Water Sewer Flood Map	Figure 6 - Areas Susceptible to Groundwater Flooding Map	Figure 7 - Outline Reservoir F
Mitigation Requirements	Mitigation Requirements	N
<ul> <li>Applicant must consult with TWUL to confirm if the development site has historically flooded. TWUL must agree to any proposed sewer connections.</li> <li>Where historic flooding has occurred, the applicant must show how this risk will be managed for the lifetime of the development.</li> </ul>	<ul> <li>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.</li> <li>If there is a potential level of impact, mitigation actions must be proposed.</li> <li>Must be prepared by a chartered professional or specialist.</li> </ul>	<ul> <li>Propose appropriate and prop</li> <li>A suitable emergency respons warning system in the event of</li> <li>Local Authority Emergency Pla reservoir failure emergency and</li> </ul>
	PLANNING CONSIDERATIONS	
	Safety of Development	
<ul> <li>B. Can the development be designed safe throughout its lifetime without in e Yes. The development must use surface water drainage techniques to many per London Plan Policy SI 13.</li> <li>See SFRA - Level 2 Report mitigation requirement number 4.5 for compensate.</li> <li>C. What is the cumulative impact of the development land use change and e The development land use is changing from the 'Less Vulnerable' to the 'Me The site is already covered by impermeable surfaces, therefore flood risk is D. How can the development reduce risk overall?</li> <li>Directing development away from the western edge of the site.</li> <li>Include SuDS to manage surface water runoff and reduce run-off rates to car By complying with SFRA - Level 2 Report mitigation requirement number 4.8 for Main</li> <li>F. Is the Exception Test required?</li> <li>No 'Less', 'More' or 'Highly Vulnerable' development is permitted along the The Exception Test is required for 'More Vulnerable' development in Flood</li> <li>This can be passed by making the site safe throughout its lifetime without i Surface Water Drainage and Mitigation - Flood Risk Requirements boxes).</li> <li>G. What are the delivery challenges in developing at this site in terms of para</li> </ul>	age surface water runoff onsite through above ground SuDS and / or below ground attenuation. Green dr. atory flood storage stipulations, and number 4.6 for voids mitigation specification. <b>will flood risk increase?</b> ore Vulnerable' classification as residential uses have been proposed as well as commercial use. likely to be similar. omply with Policy DM 4 in Kingston's Core Strategy. 1.2, 4.3, 4.4, 4.5 and 4.6. In River stipulations. e western edges in Flood Zone 3b. There can be no increase in residential units in Flood Zone 3b. Zone 3a (the northern and western edges of the site). ncreasing flood risk elsewhere (see questions A, B, and C). The site could also reduce flood risk overall with <b>ssing the Exception Test?</b> evelopment towards the main river is allowed as this may lead to a potential increase in flood risk, and the ensation and voids will be required.	h appropriate SuDS and flood storage co



#### ARTIFICIAL

#### **Risk Assessment**

from a number of reservoirs including the Barwell Court Lake, g, Hampton (Distributing, Grand Junction, Stain Hill and Sunnyside), ueen Elizabeth II, Queen Mother, Staines (North and South), ght), and Wraysbury.

edicts that if any of these reservoirs breach on a wet day, the site

# oir Flood Map

#### **Mitigation Requirements**

proportionate risk management measures.

ponse plan should be put in place, including an emergency at of a reservoir flooding incident.

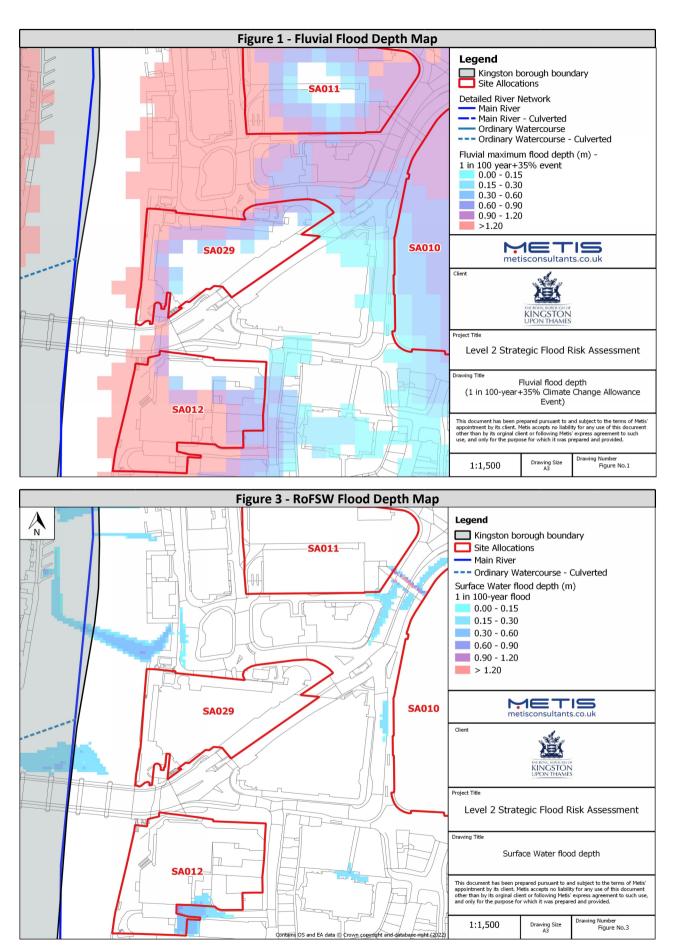
cy Planning Officers must be consulted to create a

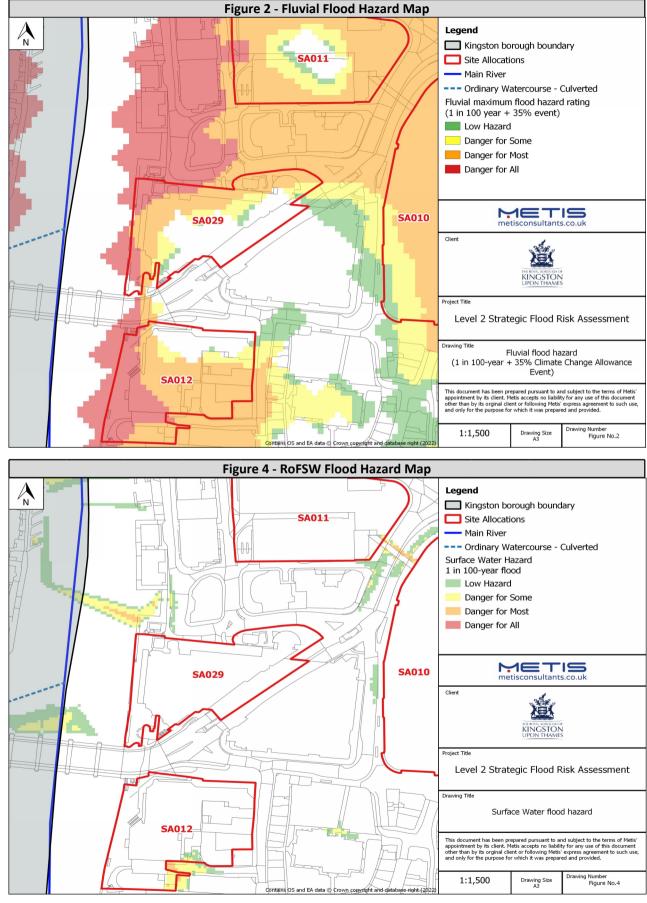
and evacuation plan.

ritised to provide wider ecological / biodiversity benefits as

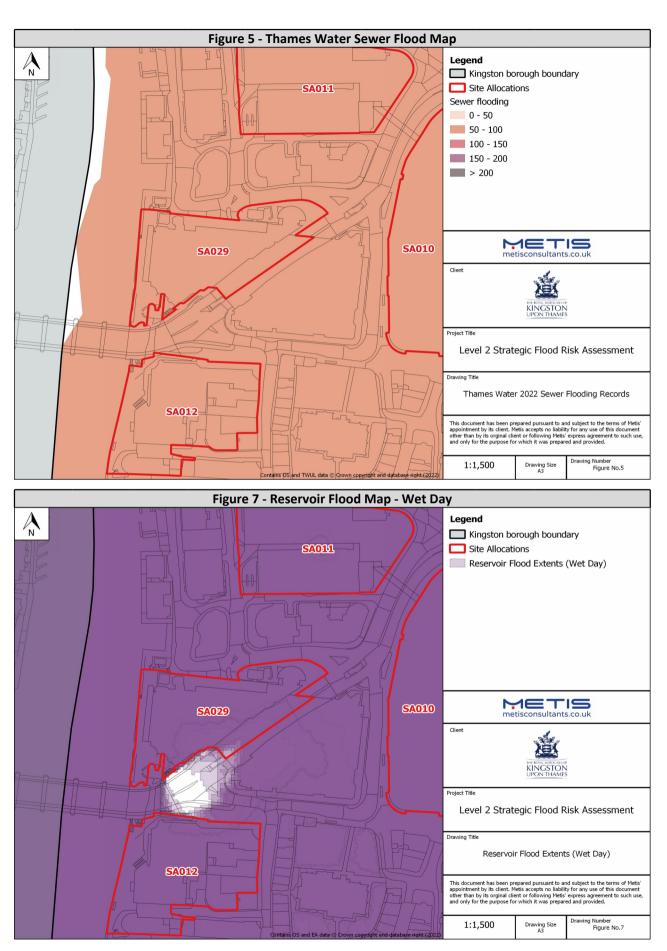
ge compensation measures implemented (see Mitigation -

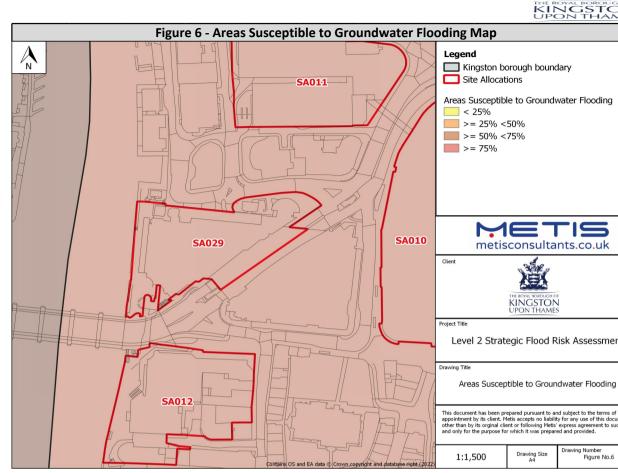
Test (see mitigation requirement 4.8).













Level 2 Strategic Flood Risk Assessment Areas Susceptible to Groundwater Flooding

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