

SITE 9.6 : Cappagh Waste Recycling Facility, The Willows, Riverside Way, SW17

1) PROPOSED DEVELOPMENT

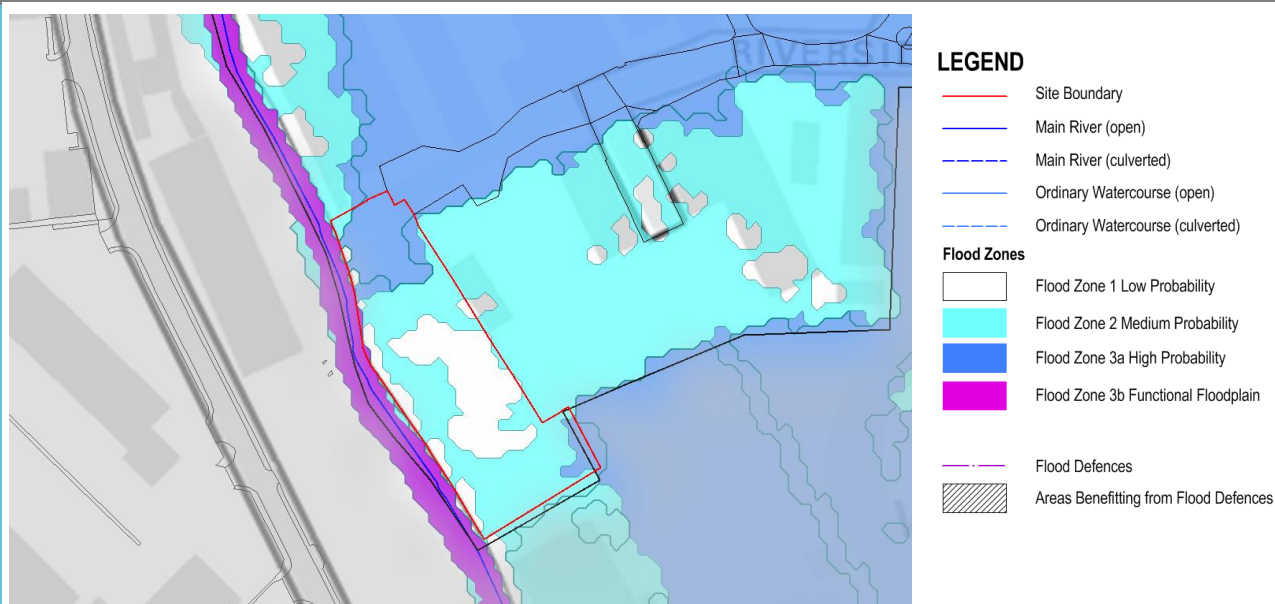
Site ID	9.6
Site Address	Cappagh waste recycling facility, The Willows, Riverside Way, SW17
Site Area	0.57 ha
Current Use	B2 use, the handling of construction and demolition waste.
Allocated Use	Waste Recycling Facility
Vulnerability	Less Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is bordered to the west by the River Wandle which flows from south to north.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	1%	20%	47%	32%	0 %



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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	High Risk 1 in 30 year (3.33% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	9 Internal	0	0

SITE 9.6 : Cappagh Waste Recycling Facility, The Willows, Riverside Way, SW17

3) LEVEL 2 ASSESSMENT

The fluvial hazard, depth and velocity outputs used in the Level 2 SFRA assessment and mapped below are based on the Environment Agency modelling of the River Wandle (2015) and are provided for the 1% AEP plus Climate Change event.

Flood Hazard Rating



LEGEND

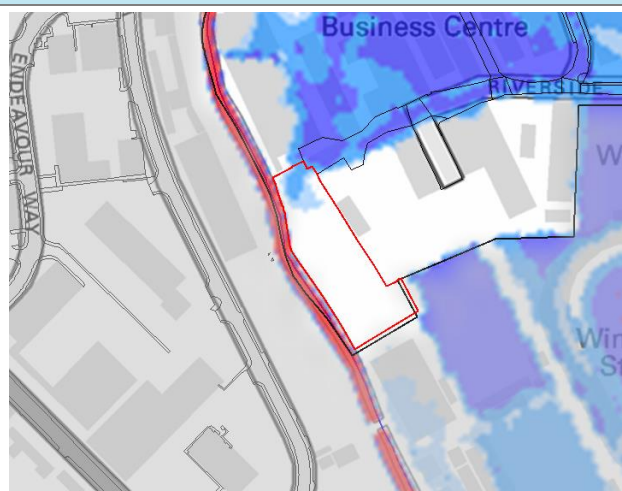
- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Hazard Rating 1% AEP plus Climate Change

- No Hazard
- Low Hazard
- Moderate Hazard
- Significant Hazard
- Extreme Hazard

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Maximum Flood Depth



LEGEND

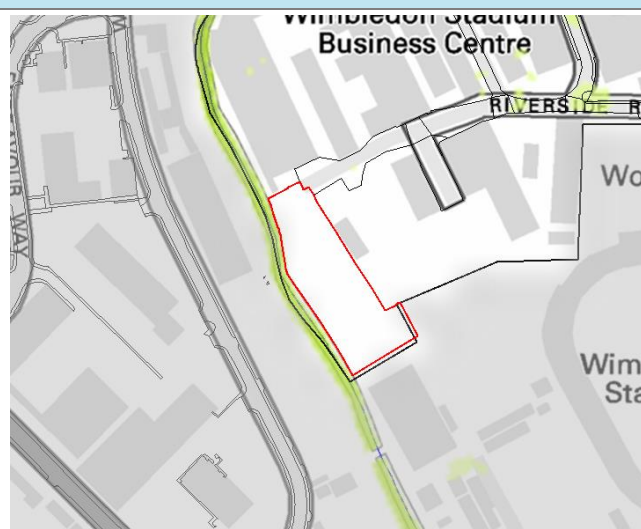
- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Flood Depth (m) % AEP plus Climate Change

- <0.1m
- 0.1m - 0.25m
- 0.25m - 0.5m
- 0.5m - 1m
- 1m - 1.5m
- >1.5m

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Maximum Velocity



LEGEND

- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Flood Velocity 1% AEP plus Climate Change

- <0.5 m/s
- 0.1 m/s - 1.5 m/s
- 1.5 m/s - 2.5 m/s
- 2.5 m/s - 3.5 m/s
- 3.5 m/s - 4.5 m/s
- >4.5 m/s

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SITE 9.6 : Cappagh Waste Recycling Facility, The Willows, Riverside Way, SW17

4) RECOMMENDATIONS AND POLICIES

In accordance with the NPPF, subject to the exclusion of hazardous waste materials or oils on the site, **the proposed use is classified as Less Vulnerable and is therefore appropriate within Flood Zone 2 and 3a without the need for the Exception Test.** However, given the risk of fluvial and surface water flooding to the area surrounding the site, the principles of the Exception Test can still be considered when developing on this site, namely:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

The following information and recommendations are therefore provided for consideration.

Development Layout and Sequential Approach	The northern part of the site is at greatest risk of flooding. Elements of the site with greater vulnerability to flooding should be steered away from this area and located in the southern part of the site. All development should be set back at least 8m from the River Wandle frontage. A Flood Risk Activity Permit is required for works within this 8m zone i.e. riverside path/pier. Consideration should be made of the potential for the mobilisation of waste material in the event of a flood. The modelling for the 1% AEP event including an allowance for climate change show approximate depths of 0.25 -0.5m in the northern part of the site. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Safe Access/Egress	Access to the site is assumed to be from the north of the site via Riverside Road. This area is modelled to experience notable depths of flooding (~1m) and is rated as Significant hazard. The suitability of this route should be further investigated during the preparation of a site specific FRA for the site.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) must be prepared for the site, detailing how flood warning will be provided how the safety of occupants and access to/from the development will be ensured and what will be done to protect the material on the site. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'River Wandle at Wimbledon'. The managing occupants of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Lola Jones Hall & Tooting Leisure Centre on Greaves Place. This is located 1.1km to the east. There is also an emergency rest centre in London Borough of Merton that is in slightly closer proximity, but given its location on the opposite bank of the River Wandle this may be a less practical option. Further assessment should be undertaken during the preparation of the FWEP.	Section 9.14
Surface Water Management	Current risk of flooding The site is located within Critical Drainage Area (CDA) Group7_018, which is an area with localised flooding issues. The potential development must not increase flood risk to other areas in the CDA. The uFMfSW indicates that the site and surrounding area is at high risk of surface water flooding. Wandsworth Council have six historic surface water flood records in this location. The site is within Drainage Catchment 2, which is within the London Borough of Wandsworth and drains much of Clapham Junction. The potential development must not increase flood risk to other areas in the Drainage Catchment.	
	Indicative existing runoff rate: 2.5 l/s (1 in 1 year), 9.5 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unsuitable. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems.	Section 10.3 and 10.9

SITE 9.6 : Cappagh Waste Recycling Facility, The Willows, Riverside Way, SW17

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

SITE 9.7: Gypsy and Traveller site, Trewint Street, SW18

1) PROPOSED DEVELOPMENT

Site ID	9.7
Site Address	Gypsy and Traveller site, Trewint Street, SW18
Site Area	0.23 ha
Current Use	A Council managed and safeguarded Gypsy and Traveller Site.
Allocated Use	Retain protection as designated Gypsy and Traveller site.
Vulnerability	Highly Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The River Wandle flows along the eastern boundary of the site. Access to the site is across the River Wandle channel.

Proportion of potential development site within Flood Zone	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	1%	0%	1%	98%	0 %



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Flood risk from all other sources			Limitations
Risk of flooding to the potential development site and surrounding area	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

Historic records of flooding from each source within a 100m radius of potential development site	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	1 Internal 2 External	0	0

SITE 9.7: Gypsy and Traveller site, Trewint Street, SW18

3) LEVEL 2 ASSESSMENT

The fluvial hazard, depth and velocity outputs used in the Level 2 SFRA assessment and mapped below are based on the Environment Agency modelling of the River Wandle (2015) and are provided for the 1% AEP plus Climate Change event.

Flood Hazard Rating



LEGEND

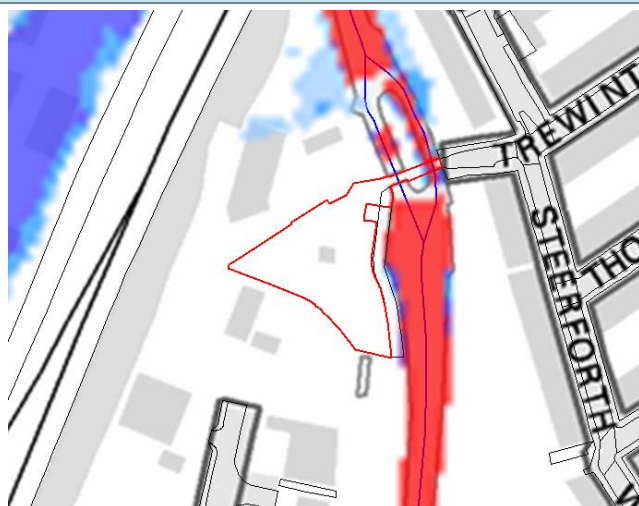
- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Hazard Rating 1% AEP plus Climate Change

- No Hazard
- Low Hazard
- Moderate Hazard
- Significant Hazard
- Extreme Hazard

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Maximum Flood Depth



LEGEND

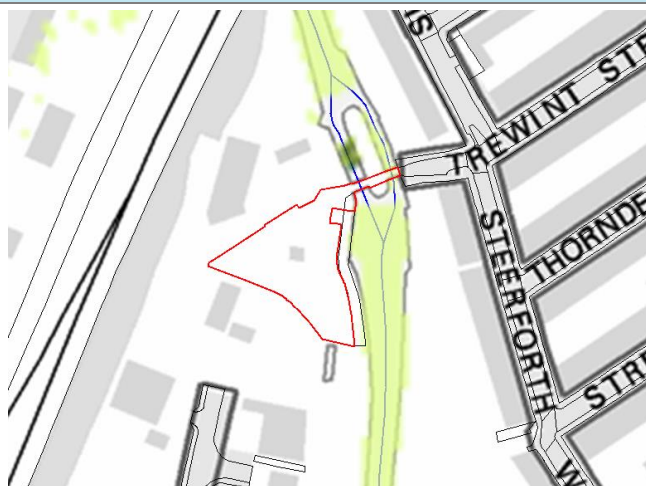
- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Flood Depth (m) % AEP plus Climate Change

- <0.1m
- 0.1m - 0.25m
- 0.25m - 0.5m
- 0.5m - 1m
- 1m - 1.5m
- >1.5m

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Maximum Velocity



LEGEND

- Site Boundary
- Main River (open)
- Main River (culverted)
- Ordinary Watercourse (open)
- Ordinary Watercourse (culverted)
- Flood Defences

Flood Velocity 1% AEP plus Climate Change

- < 0.5 m/s
- 0.1 m/s - 1.5 m/s
- 1.5 m/s - 2.5 m/s
- 2.5 m/s - 3.5 m/s
- 3.5 m/s - 4.5 m/s
- > 4.5 m/s

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SITE 9.7: Gypsy and Traveller site, Trewint Street, SW18**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The majority of the site is within Flood Zone 1 Low Probability of flooding from the River Wandle. However the River Wandle flows along the eastern edge of the site and access to the site in the north eastern part of the site crosses the River Wandle channel. On the eastern edge of the site, all development or location of temporary accommodation will need to be set back a minimum of 8m from the River Wandle. Given the vulnerability of the proposed accommodation, a greater set back distance is advised.	Section 9.2
Finished Floor Levels	The majority of the site is not shown to be at flood hazard, corresponding to flood depths of <0.1m during the 1% AEP plus climate change scenario. Where the River Wandle crosses the site flood depths are greater than 1.5m. Travellers' sites are classed as Highly Vulnerable and it is essential that any development in this area is set back from the river's edge.	Section 9.3
Flood Resistance	It is recommended that flood resistant construction methods should be considered where risk of flooding is up to 0.6m. This includes the use of construction materials with low permeability, raising property thresholds, using landscaping to manage surface water and fluvial floodwater.	Section 9.4
Flood Resilience	It is recommended that flood resilient measures should also be considered on the site. These measures are appropriate where modelled flood depths are greater than 0.6m ¹ . Rather than seeking to resist flood water, this strategy involves implementing careful design in order to minimise damage and allow rapid re-occupancy.	Section 9.5
Safe Access/Egress	Access to the site is provided via Trewint Street, to the east of the site across the channel of the River Wandle. In the event of widespread flooding associated with River Wandle, dry routes out of the local area to safe places of refuges may be limited. There is potential that the site could be cut-off from the egress route. Should the proposed use for traveller accommodation be considered further on this site, it will be essential to prepare a Flood Warning and Evacuation Plan (FWEP).	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) must detail how flood warning will be provided to users of the site, how the safety of occupants and access to/from the development will be ensured and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'River Wandle at Wandsworth'. Occupants of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is Earlsfield Library, 276 Magdalen Road, approximately 400m north of the site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 8, which is within the London Borough of Wandsworth. The potential development must not increase flood risk to other areas in the Drainage Catchment. There are no reported incidents of flooding held by Wandsworth Council in this location. The uFMfSW indicates that the site and surrounding area is at medium risk of surface water flooding.	
	Indicative existing runoff rate: 1.0 l/s (1 in 1 year), 3.8 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is 'unknown' for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds.	Section 10.3 and 10.9

¹ Department for Communities and Local Government (2007) Improving the flood performance of new buildings, Flood resilient construction.

SITE 9.7: Gypsy and Traveller site, Trewint Street, SW18

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³. Infiltration trench £55-65 /m³. Infiltration basin £10-15 /m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk" and*
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall".*

The proposed use is classed as Highly Vulnerable. Whilst the majority of the site itself is defined as Flood Zone 1 low probability of flooding from the River Wandle, the proposed access route to the site is across the channel of the River Wandle and river follows the eastern boundary of the site. In order to determine whether the Exception Test can be satisfied for this site, careful consideration should be made regarding the safety of the occupants of the site, and the availability of alternative access/egress routes for the site in the event of flooding associated with the River Wandle. These elements will need to be specified in a detailed FWEP for the site to demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of the users. It will also be necessary to demonstrate that the proposed access route to the site across the River Wandle does not result in any loss of floodplain storage, to ensure that the flood risk is not increased elsewhere. Careful consideration should also be made for the effective surface water drainage of the site, to reduce the flood risk from runoff wherever possible.

SITE 9.10 : 259-311 Battersea Park Road, SW11

1) PROPOSED DEVELOPMENT

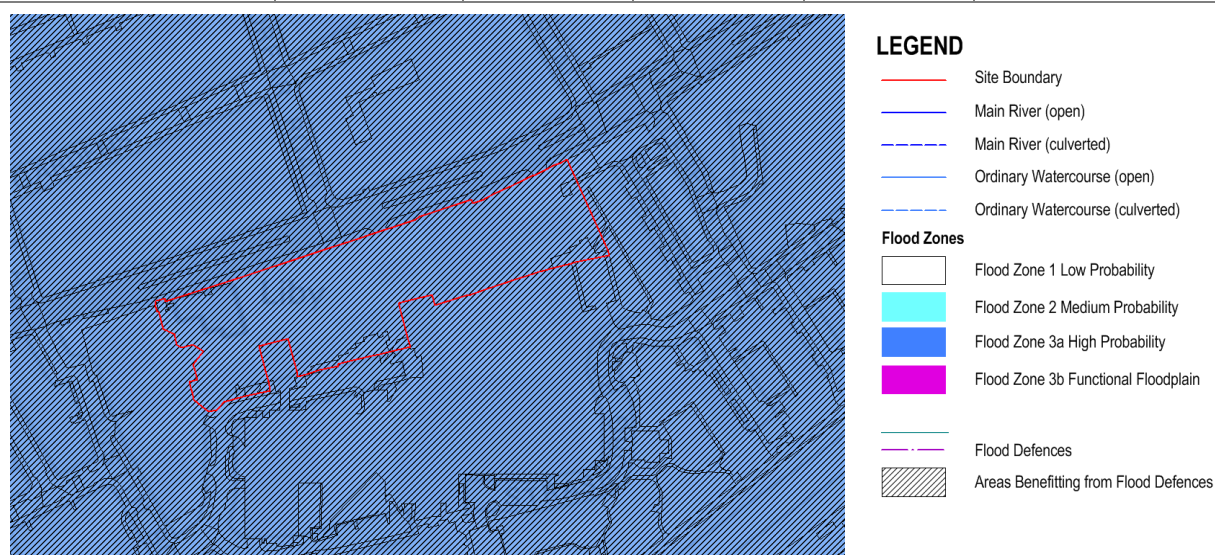
Site ID	9.10
Site Address	259-311 Battersea Park Road, SW11
Site Area	1.25 ha
Current Use	Retail and community use.
Allocated Use	Mixed use including residential, community uses, including health and retail.
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The closest watercourse to the site is the River Thames, located approximately 1km north of the site.

Proportion of potential development site within Flood Zone	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources

			Limitations
Risk of flooding to the potential development site and surrounding area	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

Historic records of flooding from each source within a 100m radius of potential development site	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	1	0	6 Internal 1 External	0	0

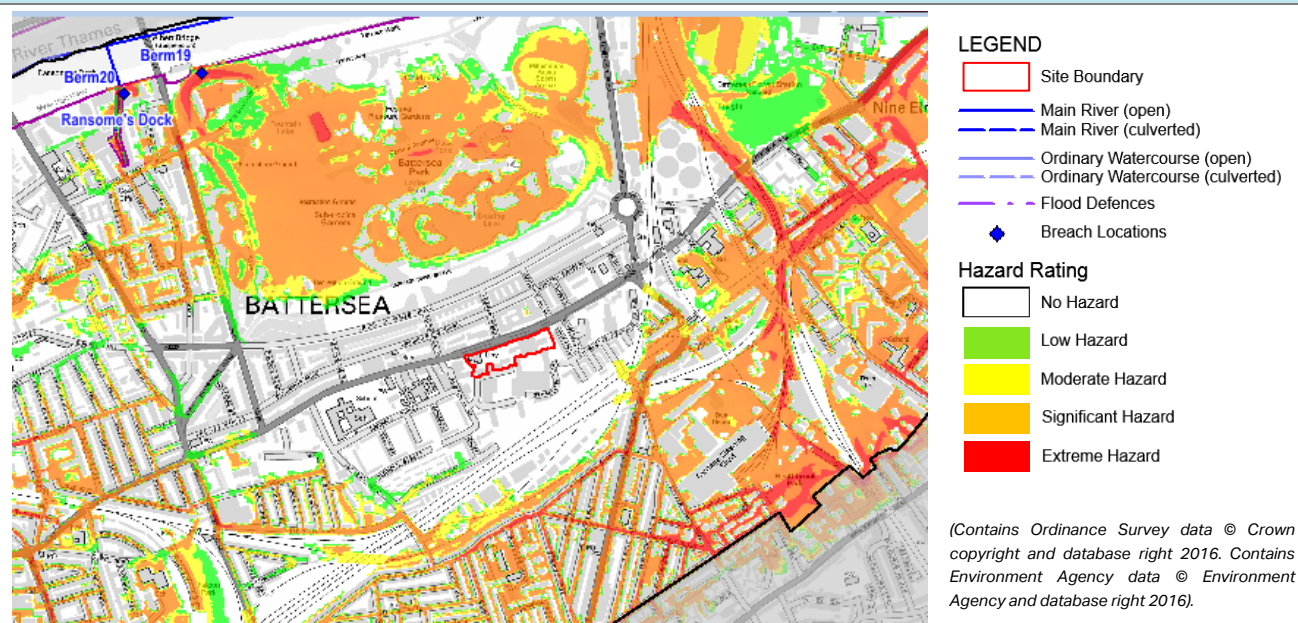
SITE 9.10 : 259-311 Battersea Park Road, SW11

3) LEVEL 2 ASSESSMENT

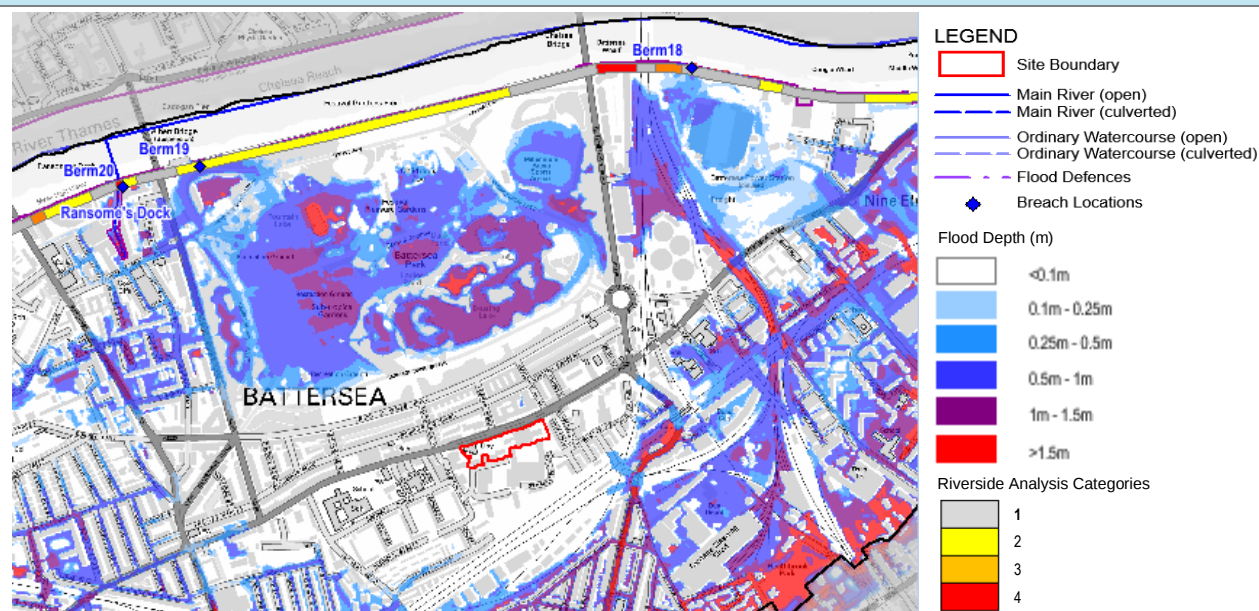
The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined results for all of the breach scenarios that were modelled. The mapping shows that the site is not affected by floodwaters as a result of a breach in the defences in the locations considered. However, large parts of the area surrounding the site are affected.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

There are 3 breach locations in close proximity to the site which provides an indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage in proximity to the site to vary between Category 1 – Category 4.

SITE 9.10 : 259-311 Battersea Park Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The development site is located within Flood Zone 3a associated with the River Thames; however it is protected from flooding by the presence of the Thames Tidal Defences. The site is not shown to be at residual risk of flooding as a result of a breach in the flood defences at any of the modelled locations. In areas of residual risk it is prudent to allocate Less Vulnerable uses at the ground floor level with More Vulnerable uses on the upper floors. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. For Less Vulnerable uses (community uses, health, retail), finished floor levels do not need to be raised with regards to policy; however, internal access must be provided to upper floors to provide safe refuge in a tidal breach flood event. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and consideration of surface water flow paths should be made when setting property thresholds.	Section 9.3
Safe Access/Egress	Access to the site is provided via Battersea Park Road, which borders the northern site boundary. In the event of widespread flooding associated with River Thames it is likely that dry routes out of the local area to safe places of refuges may be limited. Therefore it is necessary to prepare a Flood Warning and Evacuation Plan (FWEP), which is described below.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) must be prepared for the site, detailing how flood warning will be provided how the safety of occupants and access to/from the development will be ensured and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents and occupants of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is The Venue, approximately 300m east of the site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 1, which is completely within London Borough of Wandsworth, and drains the Battersea and Nine Elms area. The uFMfSW indicates that the site and surrounding area is at medium risk of surface water flooding.	
	Indicative existing runoff rate: 5.2 l/s (1 in 1 year), 19.6 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is uncertain for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems.	Section 10.3 and 10.9

SITE 9.10 : 259-311 Battersea Park Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4/m². Detention basin £15-50/m³. Concrete storage tank £449-518/m³. Infiltration trench £55-65 /m³. Infiltration basin £10-15 /m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

This development site is located within Flood Zone 3a associated with the tidal River Thames and is defended by the Thames Tidal Defences. The site is located approximately 1km south of the River Thames and is not shown to be at residual risk of flooding during a breach in the flood defences at any of the modelled locations. However there is potential that due to flooding in the wider area, dry routes out of the local area to a safe place of refuge may be limited and it is therefore necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding. The potential impacts of flooding should be mitigated through careful building design and inclusion of safe places of refuge. The risk of surface water flooding should be managed through the incorporation of SuDS, to reduce the potential for increasing surface water flood risk elsewhere. Therefore, on this basis, it is likely that this site would pass the Exception Test.

SITE 10.1.1 : Ransomes Wharf Former Domus Tiles sites, Parkgate Road/Elcho Street, SW11

1) PROPOSED DEVELOPMENT

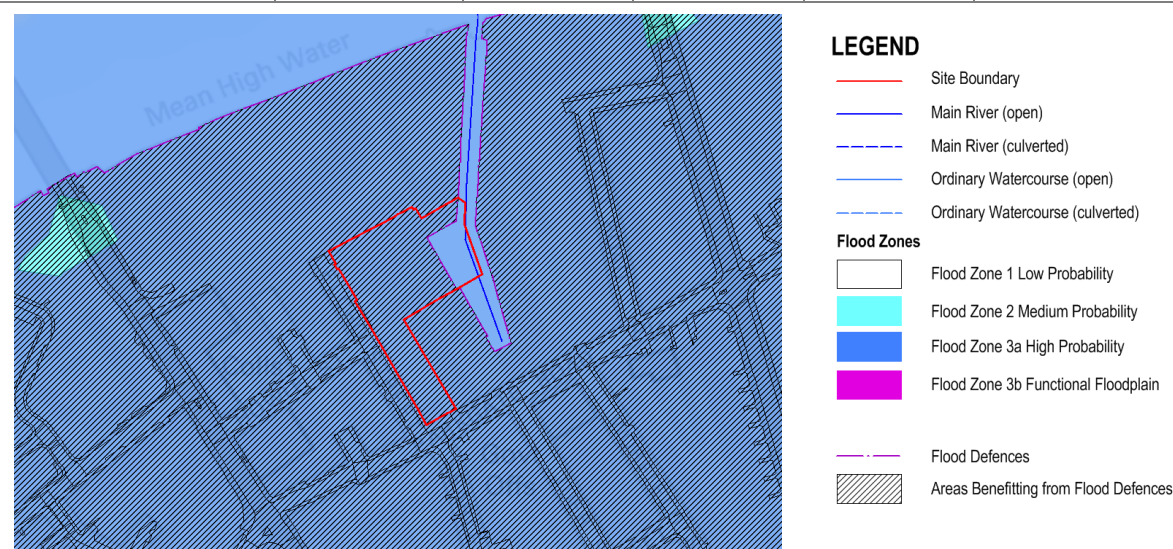
Site ID	10.1.1
Site Address	Ransomes Wharf Former Domus Tiles sites, Parkgate Road/Elcho Street, SW11
Site Area	0.6ha
Current Use	Main part of the site between Ransome's Dock and Elcho Street is occupied by a building in a variety of business and storage uses (B1/B8) which is vacant in some parts.
Allocated Use	Mixed use including residential, shops, restaurants, cafes and other commercial units, artists' studios, public piazza, dockside walkway, basement and surface car parking with associated access and landscaping.
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the tidal River Thames. Ransome's Dock forms the eastern boundary of the site.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100%	0%	0%	100%



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Flood risk from all other sources

Limitations

<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	High Risk Potential for groundwater flooding to occur at surface and historic records of groundwater flooding	

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	1	1 Internal	0	0

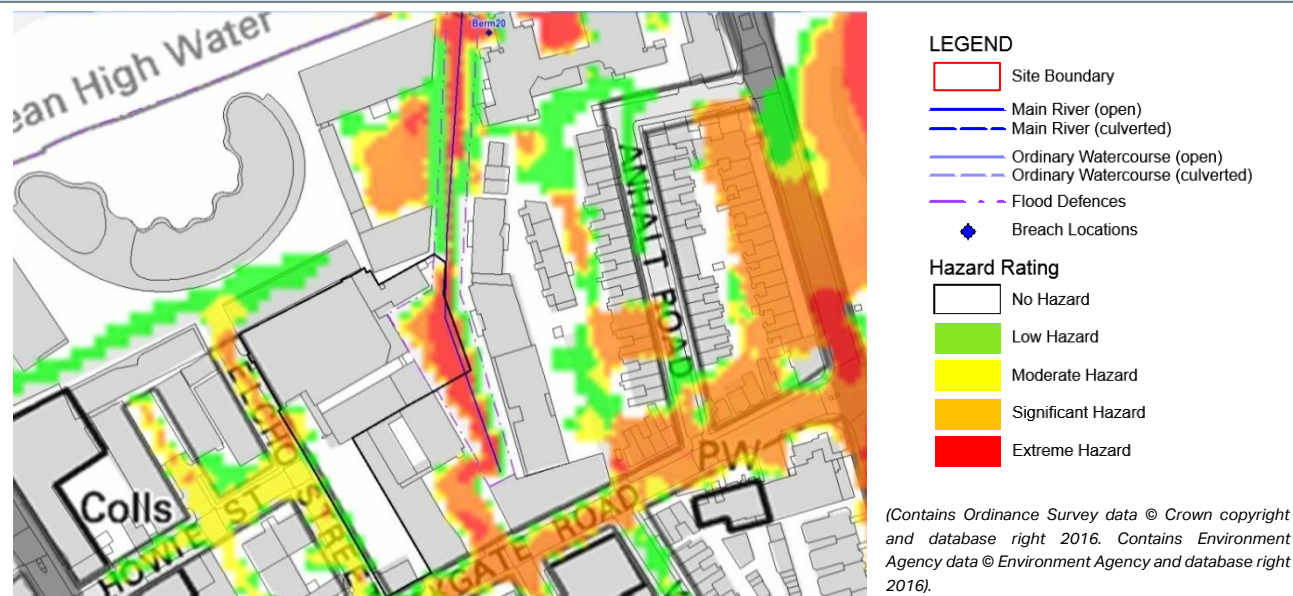
SITE 10.1.1 : Ransomes Wharf Former Domus Tiles sites, Parkgate Road/Elcho Street, SW11

3) LEVEL 2 ASSESSMENT

The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined results for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm20. The invert level was 3.96 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as:

Category 1, which is Assumed Breach Level of >5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0m.

Category 2, which is Assumed Breach Level 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0.5-0m.

A breach assessment has been undertaken on the area identified as Category 4 at Ransome's Wharf.

SITE 10.1.1 : Ransomes Wharf Former Domus Tiles sites, Parkgate Road/Elcho Street, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The proposed development includes a variety of uses. Less Vulnerable uses (retail, restaurants, cafes, commercial uses and car parking) can be located at ground floor. More Vulnerable elements of the development including residential should be located at first floor level or above. Development should be set back 8m from the edge of Ransome's Dock. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. For Less Vulnerable uses (such as commercial development), finished floor levels do not need to be raised with regards to policy, however, internal access must be provided to upper floors to provide safe refuge in a tidal breach flood event. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	
Safe Access/Egress	Access to the site is provided via Elcho Street, which borders the western site boundary. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, a dry route to a safe place of refuge may be limited. Therefore it is necessary to prepare a Flood Warning and Evacuation Plan (FWEP), which is described below.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) must be prepared for the site, detailing how flood warning will be provided how the safety of occupants and access to/from the development will be ensured and what will be done to protect development and contents. The FWEP should consider arrangements for the evacuation of basement car parks. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is Dimson Lodge, approximately 500m east.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 1, which is completely within London Borough of Wandsworth, and drains the Battersea and Nine Elms area. The uFMfSW indicates that the site and surrounding area is at medium risk of surface water flooding.	
	Indicative existing runoff rate: 2.8 l/s (1 in 1 year), 10.6 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unsuitable for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems.	Section 10.3 and 10.9

SITE 10.1.1 : Ransomes Wharf Former Domus Tiles sites, Parkgate Road/Elcho Street, SW11

	Drainage Strategy and Approvals Merton Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³. Infiltration trench £55-65 /m³. Infiltration basin £10-15 /m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

The proposed use for the site incorporates a range of vulnerability classifications including More Vulnerable development. Modelling of a breach at the entrance to Ransome's Dock immediately to the north east of the site shows that the site is not inundated by floodwater, however the areas surrounding the site including the egress routes are at risk of flooding. It is therefore necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. More Vulnerable uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. If possible the use of SuDS should be applied to reduce the spread of flooding risk to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

SITE 10.2 : 110 York Road, Battersea (Former Prices Candles factory), SW11

1) PROPOSED DEVELOPMENT

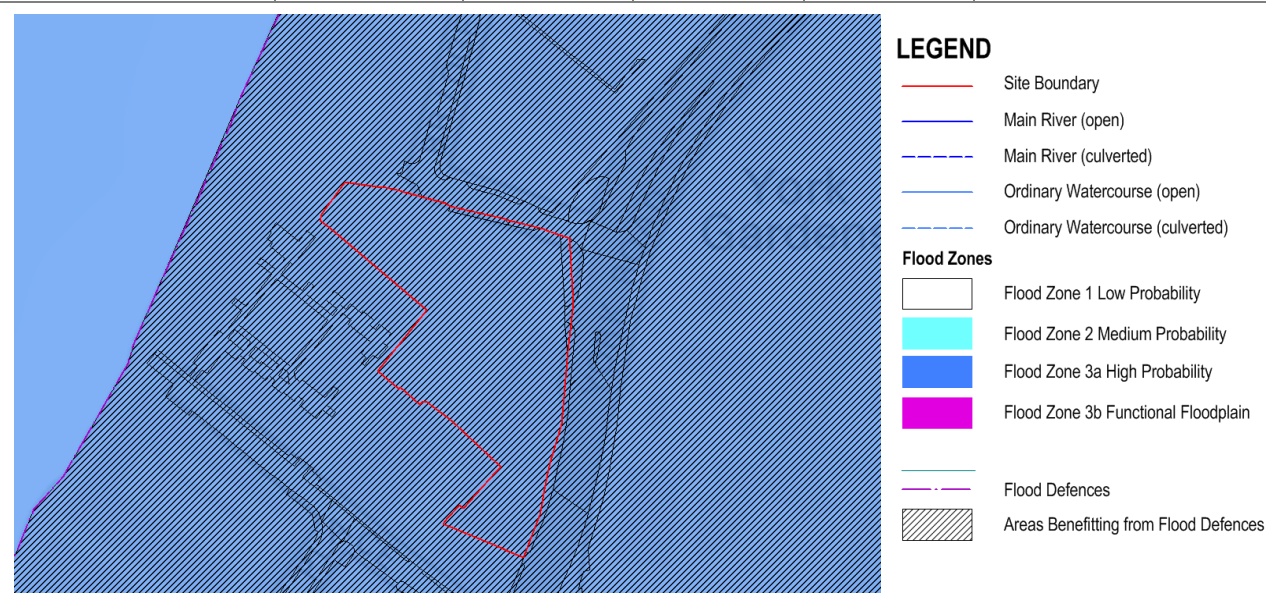
Site ID	10.2
Site Address	110 York Road, Battersea (Former Prices Candles factory), SW11
Site Area	0.79ha
Current Use	Car park and candle shop.
Allocated Use	Residential
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the River Thames.

Proportion of potential development site within Flood Zone	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
Risk of flooding to the potential development site and surrounding area	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

Historic records of flooding from each source within a 100m radius of potential development site	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	1	0	3 Internal	0	0

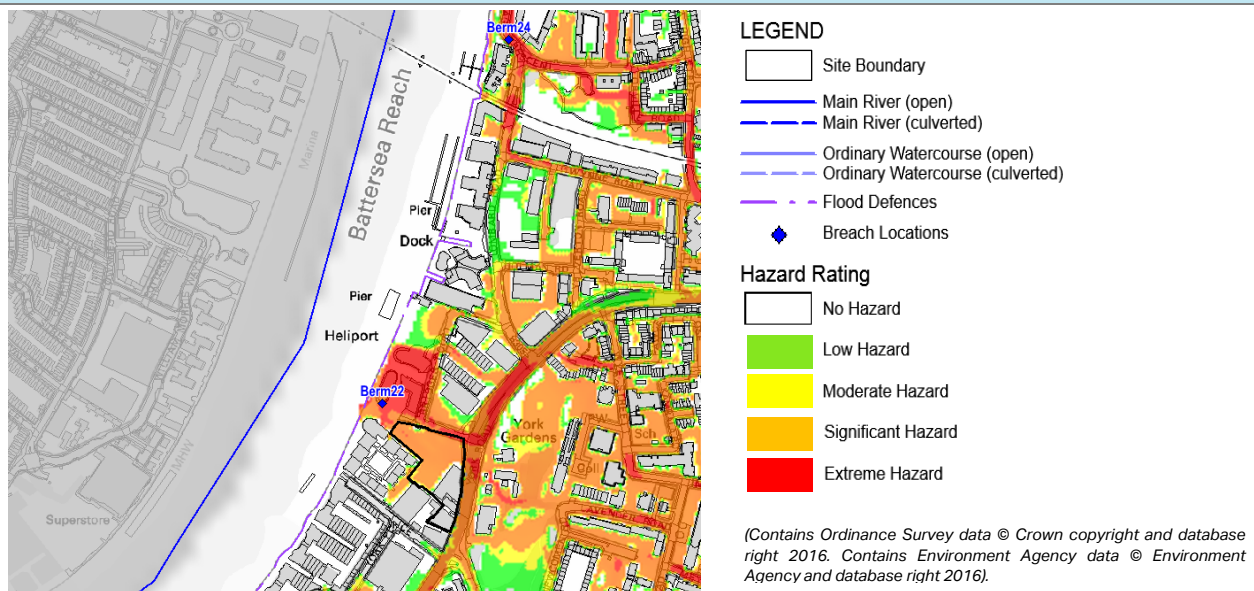
SITE 10.2 : 110 York Road, Battersea (Former Prices Candles factory), SW11

3) LEVEL 2 ASSESSMENT

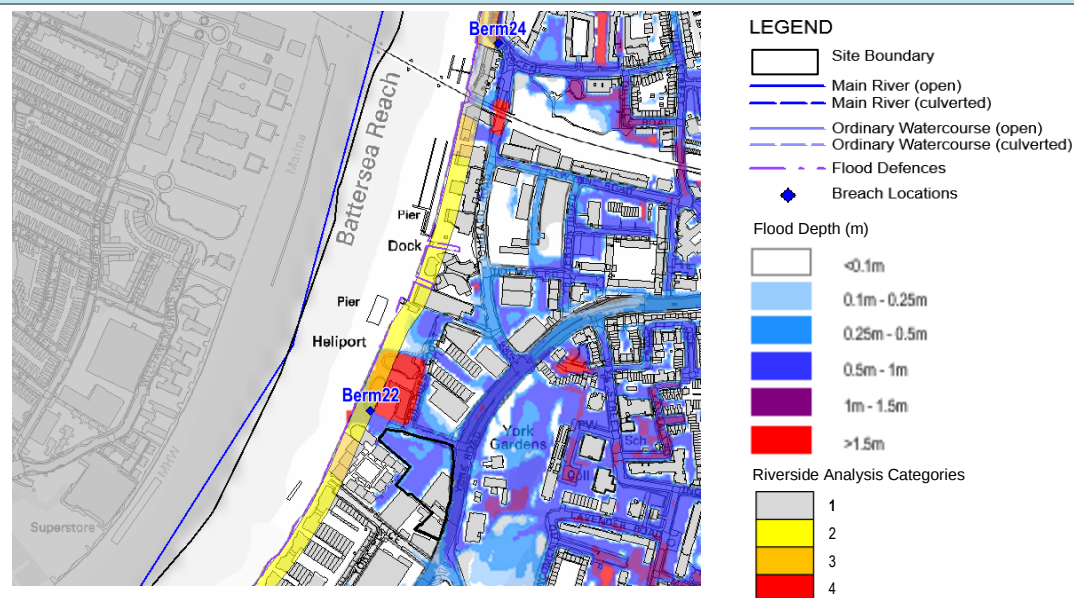
The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm22. The invert level was 4.66 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

There is a breach location (Berm 22) in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as:

Category 2, which has an Assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0.5-0m.

Category 3, which has an Assumed Breach Level of 4.3-4.8 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 1.0-0.5.

SITE 10.2 : 110 York Road, Battersea (Former Prices Candles factory), SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within defended Flood Zone 3a of the tidal River Thames. The northern half of the development site is at Significant Hazard; the southern half (where the existing candle shop is located) is defined as No Hazard. The proposed use of the site is residential which is classified as More Vulnerable. More Vulnerable uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via York Road to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the York Garden Library, 100m south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at high risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment. There is one previous recorded incident of surface water flooding and one groundwater flood incident recorded by Wandsworth Council in this location.	
	Indicative existing runoff rate: 3.5 l/s (1 in 1 year), 13.2 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unsuitable for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.2 : 110 York Road, Battersea (Former Prices Candles factory), SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

Modelling of a breach in the flood defences immediately adjacent to the site shows that the site and surrounding is at residual risk of flooding of approximately 1m depth. More Vulnerable uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level.

It is necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. If possible the use of SuDS should be applied to reduce the spread of flooding risk to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

SITE 10.4 : Homebase, York Road, SW11

1) PROPOSED DEVELOPMENT

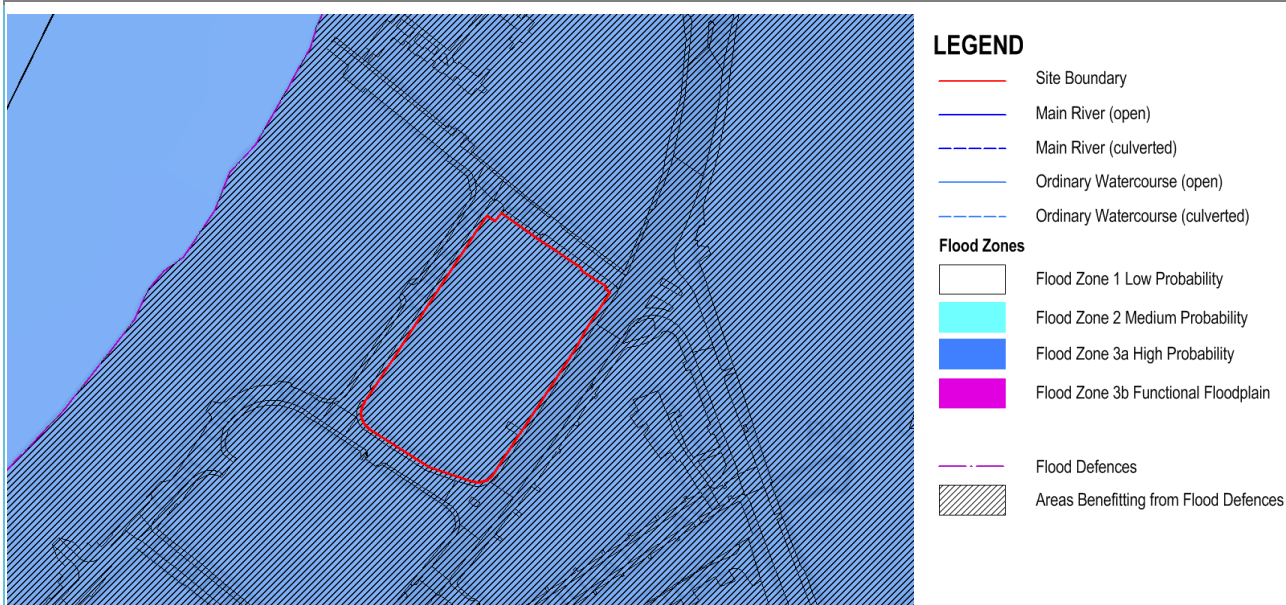
Site ID	10.4
Site Address	Homebase, York Road, SW11
Site Area	0.81ha
Current Use	Retail use.
Allocated Use	Residential development.
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the River Thames.

Proportion of potential development site within Flood Zone	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
Risk of flooding to the potential development site and surrounding area	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

Historic records of flooding from each source within a 100m radius of potential development site	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	1	0	3 Internal	0	0

SITE 10.4 : Homebase, York Road, SW11

3) LEVEL 2 ASSESSMENT

The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

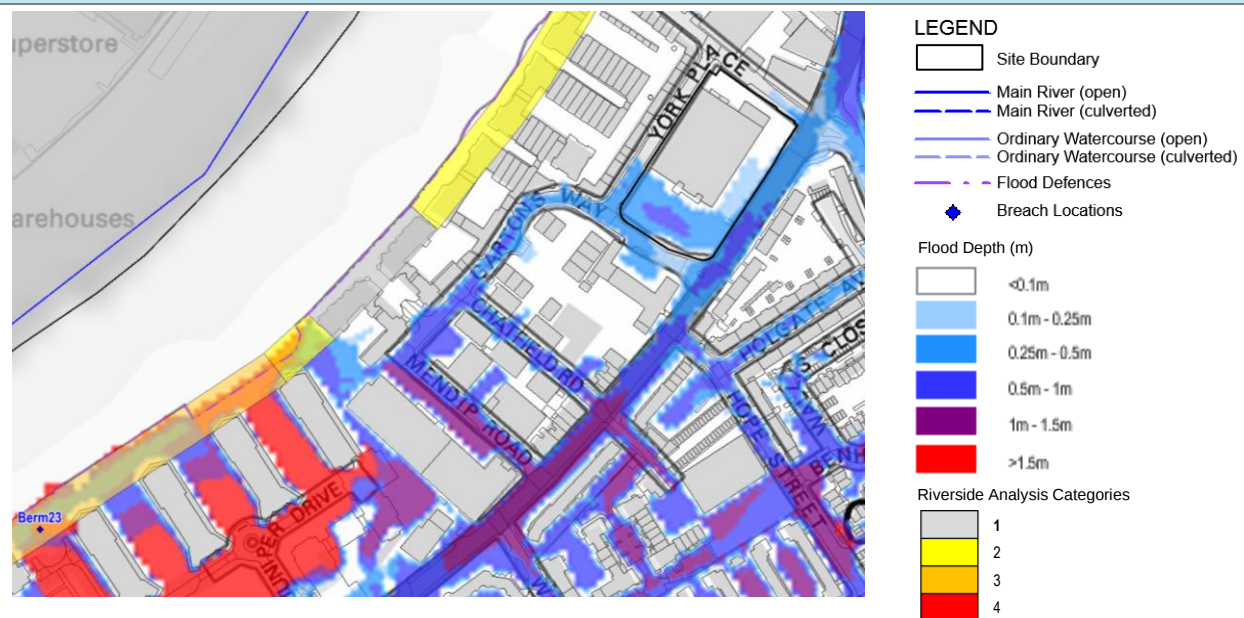
The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm23. The invert level was 3.87 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



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Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



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Riverside Analysis

There is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as a Category 2, with Assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) of 0.5-0m.

SITE 10.4 : Homebase, York Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. The southern half of the site where there is no previous development is classified as Significant Hazard during the breach in the flood defences at location Berm23, with flood depths of 0.25 – 1m. The proposed use of the site is residential which is classified as More Vulnerable. More Vulnerable uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via York Road to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the York Garden Library, 100m south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The potential development must not increase flood risk to other areas in the drainage catchment. The uFMfSW indicates that the majority of the site and surrounding area is at high risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment. There are six previous incidents of surface water flooding recorded by Wandsworth Council in this location.	
	Indicative existing runoff rate: 3.6 l/s (1 in 1 year), 13.6 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unknown for the site and requires further investigations. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.4 : Homebase, York Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

The proposed use for the site is residential which is classified as More Vulnerable development. Modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding. It is therefore necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. More Vulnerable uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. If possible the use of SuDS should be applied to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

SITE 10.3 : Dovercourt site, York Road, SW11

1) PROPOSED DEVELOPMENT

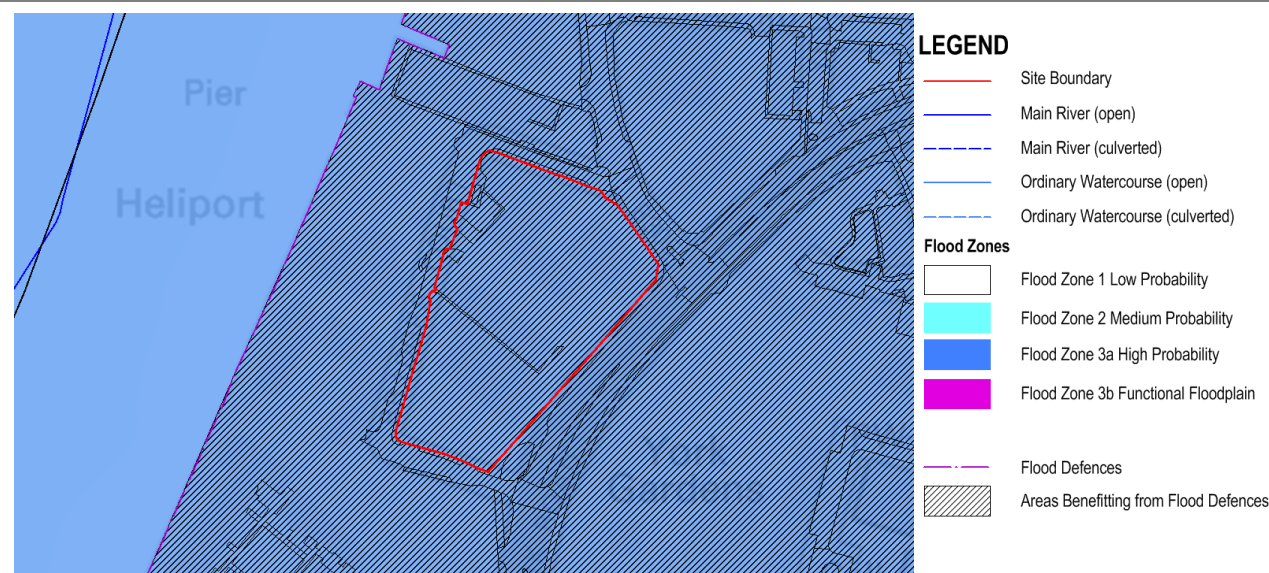
Site ID	10.3
Site Address	Dovercourt site, York Road, SW11
Site Area	1.19ha
Current Use	The majority of the site is occupied by car sales showrooms. The London Heliport lies adjacent to the site; the Heliport Estate and House are on the site.
Proposed Use	Residential use as part of a mixed use development.
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the River Thames.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Low Risk Limited potential for groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

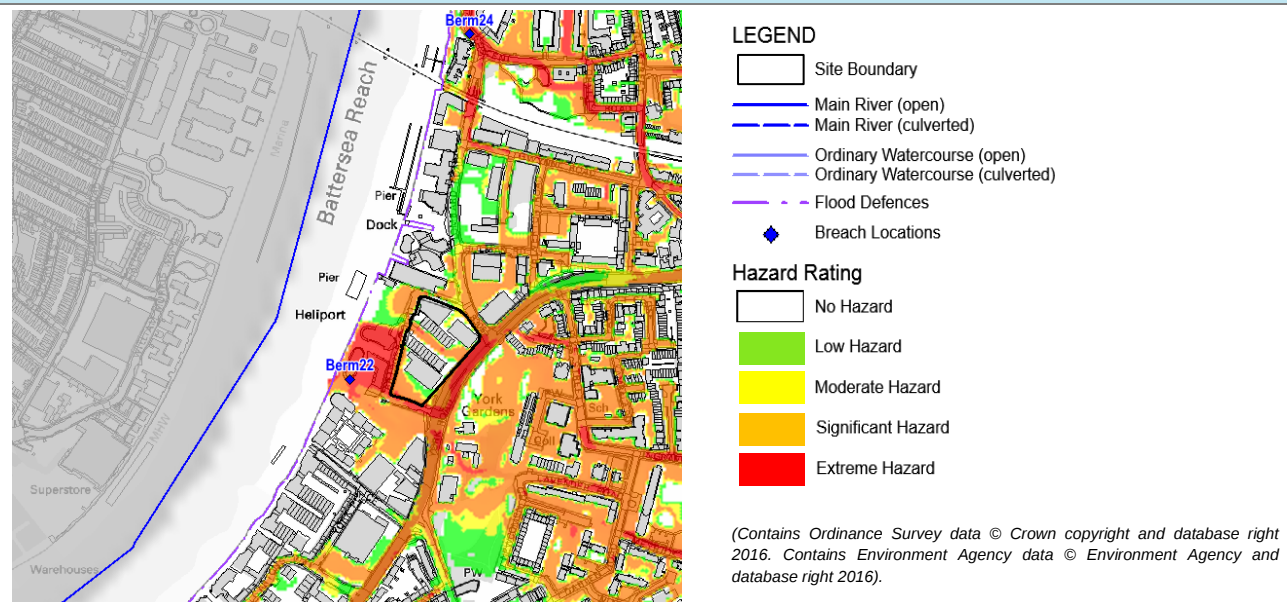
SITE 10.3 : Dovercourt site, York Road, SW11

3) LEVEL 2 ASSESSMENT

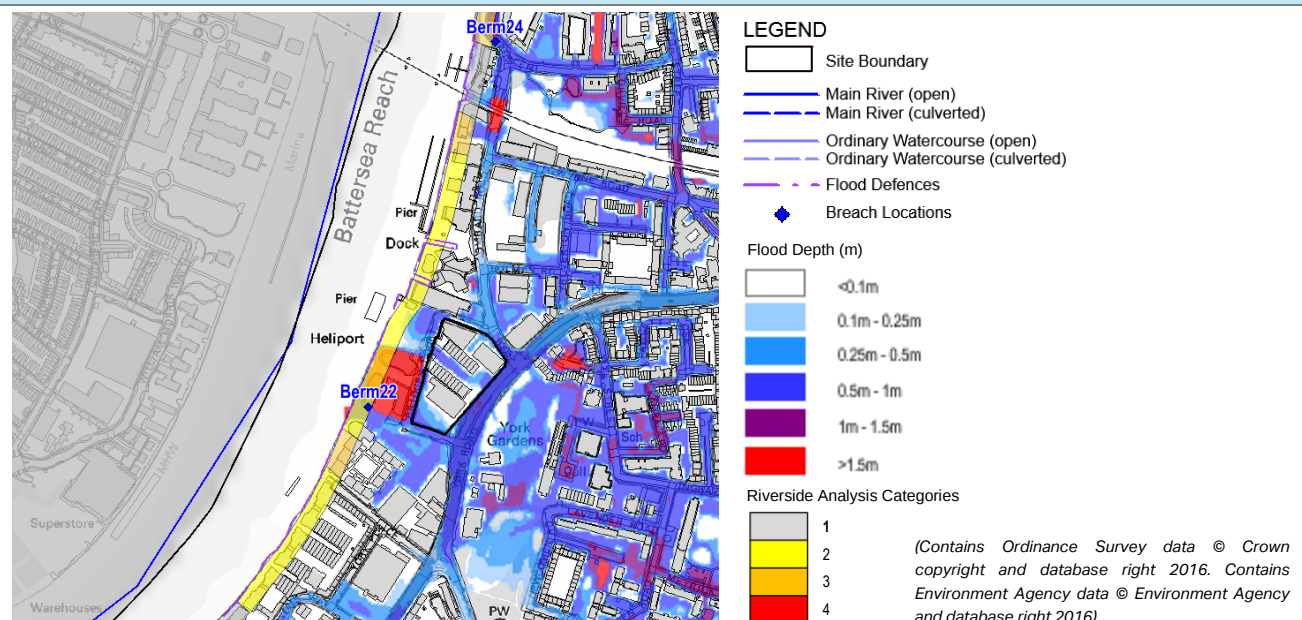
The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the River Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm23. The invert level was 3.87 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

There is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as:

Category 2, with Assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) of 0.5-0m.

Category 3, with Assumed Breach Level of 4.3-4.8 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) of 1.0-0.5m.

SITE 10.3 : Dovercourt site, York Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. Areas with existing buildings located are shown to have no hazard; however the remainder of the site is shown to have Significant hazard rating, which corresponds to 'danger for most people' and flood depths of up to 1m. The proposed use of the site includes residential which is classified as More Vulnerable. More Vulnerable uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space.	Section 9.2
Finished Floor Levels	For More Vulnerable development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via York Road to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the York Garden Library, 200m south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at low risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment. There are two previous incidents of surface water flooding recorded by Wandsworth Council in this location.	
	Indicative existing runoff rate: 5.3 l/s (1 in 1 year), 19.8 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unsuitable for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems.	Section 10.3 and 10.9
	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6

SITE 10.3 : Dovercourt site, York Road, SW11

	Indicative Unit Costs Green roofs ~ £90/m ² . Permeable paving ~ £30-50/m ² . Filter strips £2-4m ² . Detention basin £15-50m ³ . Concrete storage tank £449-518/m ³ .	Section 10.4
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5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk" and*
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall".*

The proposed use for the site includes residential use, which is classified as More Vulnerable development. Modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding. It is therefore necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. More Vulnerable uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. If possible the use of SuDS should be applied to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

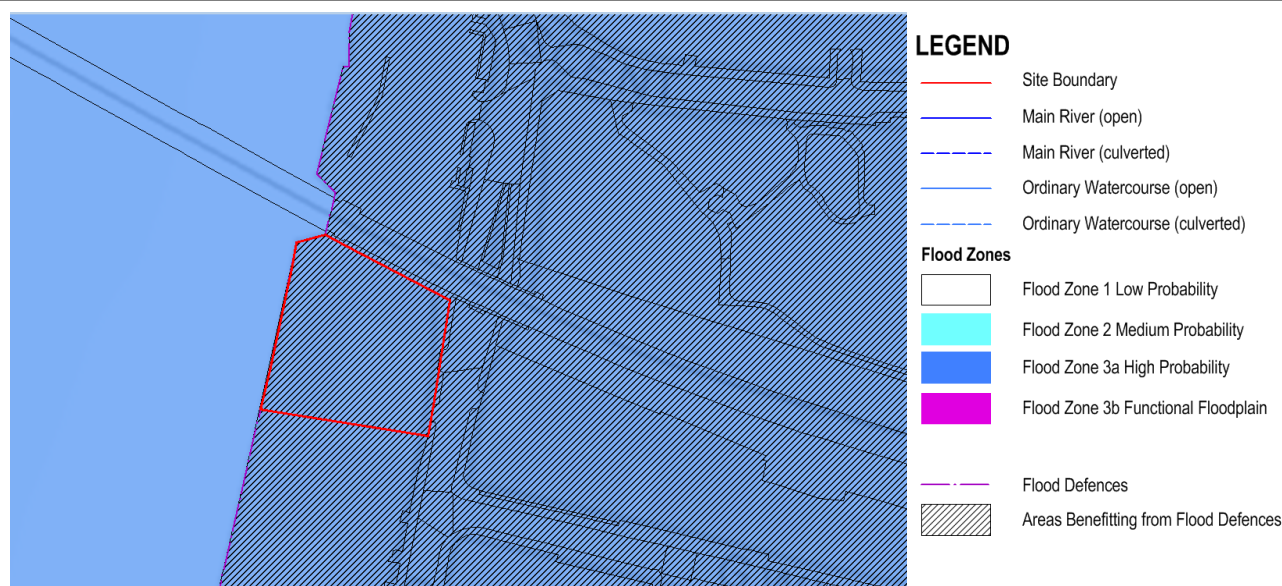
SITE 10.5 : 12-14 Lombard Road, SW11**1) PROPOSED DEVELOPMENT**

Site ID	10.5
Site Address	12-14 Lombard Road, SW11
Site Area	1.0 ha
Current Use	Former hospital, vacant since 1999.
Proposed Use	Primary school and residential use.
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK**Flood risk from rivers**

The site is located adjacent to the River Thames.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Very Low Risk Less than 1 in 1000 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Low Risk Limited potential for groundwater flooding	

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

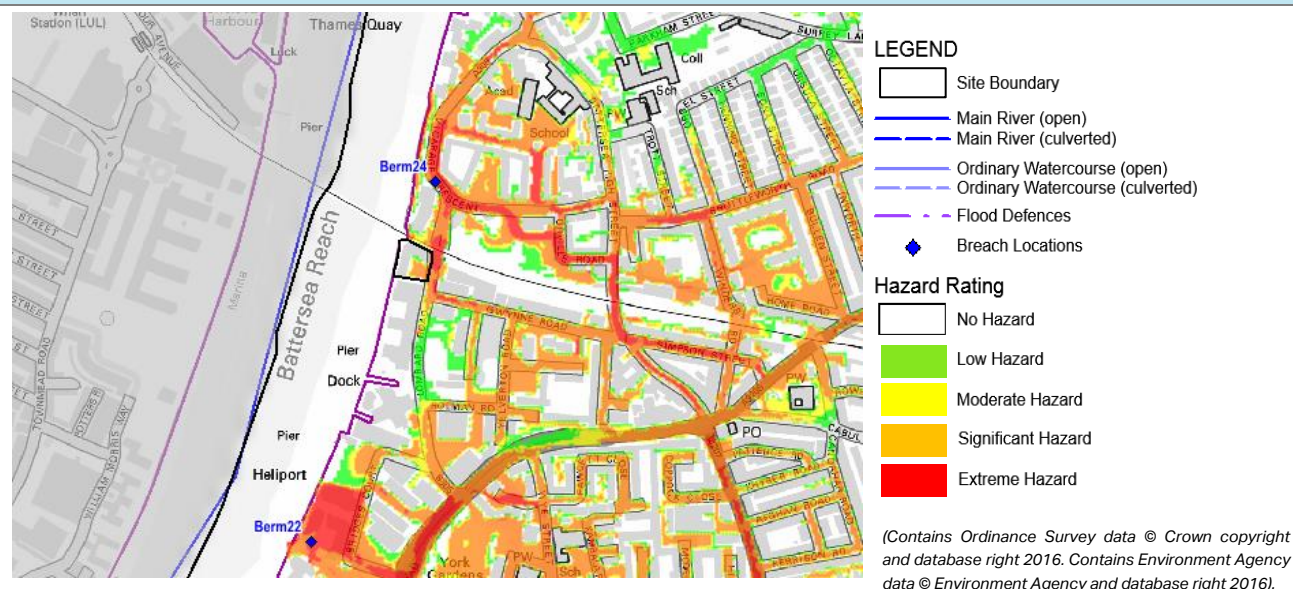
SITE 10.5 : 12-14 Lombard Road, SW11

3) LEVEL 2 ASSESSMENT

The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm24. The invert level was 4.54 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

There is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as:

Category 1, which has an Assumed Breach Level of >5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0m. Category 3, which has an Assumed Breach Level of 4.3-4.8 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 1.0-0.5.

SITE 10.5 : 12-14 Lombard Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. Areas with existing buildings located are shown to have no hazard; however the remainder of the site is shown to have Significant hazard rating, which corresponds to 'danger for most people' and flood depths of up to 1m. Development should be set back at least 16m from the River Thames frontage. A Flood Risk Activity Permit is required for works within this 16m zone i.e. riverside path/pier. The presence of defence ground anchors and ties should also be confirmed. The proposed use of the site includes residential and educational uses which are both classified as More Vulnerable. Residential uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space.	Section 9.2
Finished Floor Levels	For More Vulnerable residential development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. Finished floor levels for the proposed school do not need to be raised, however a safe place of refuge will need to be provided sufficient for all users of the site above the breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via Lombard Road to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Kambala Clubroom, 500m south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at medium risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment. There are two previous incidents of surface water flooding recorded by Wandsworth Council in this location.	
	Indicative existing runoff rate: 1.0 l/s (1 in 1 year), 3.8 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unsuitable for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.5 : 12-14 Lombard Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

The proposed use for the site includes residential use and a school, both of which are classified as More Vulnerable development. The site is located immediately adjacent to the River Thames frontage and modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding. Residential uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. It will be essential to demonstrate that the development will be safe for its lifetime, through provision of adequate flood warning and emergency procedures in the event of a breach in the local flood defences. It will be necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge.

With respect to the management of surface water flood risk, the use of SuDS should be applied to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

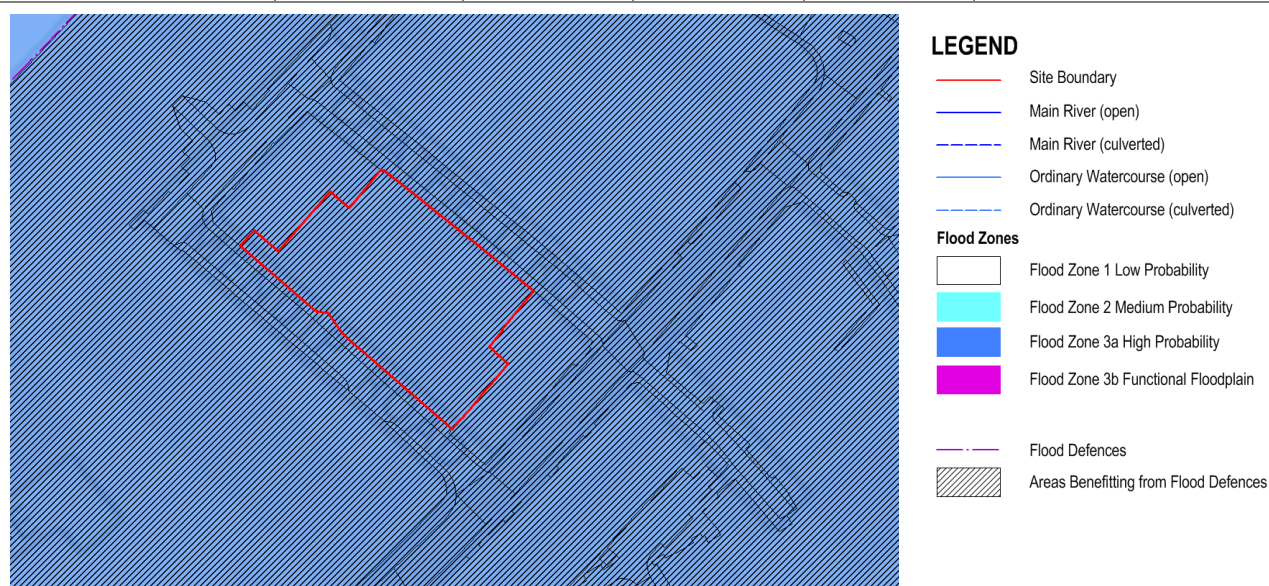
SITE 10.6: 41-47 Chatfield Road, SW11**1) PROPOSED DEVELOPMENT**

Site ID	10.6
Site Address	41-47 Chatfield Road, SW11
Site Area	0.31ha
Current Use	Storage and warehousing.
Allocated Use	Mixed use development (residential and employment)
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK**Flood risk from rivers**

The site is located in close proximity to the River Thames.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

SITE 10.6: 41-47 Chatfield Road, SW11

3) LEVEL 2 ASSESSMENT

The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

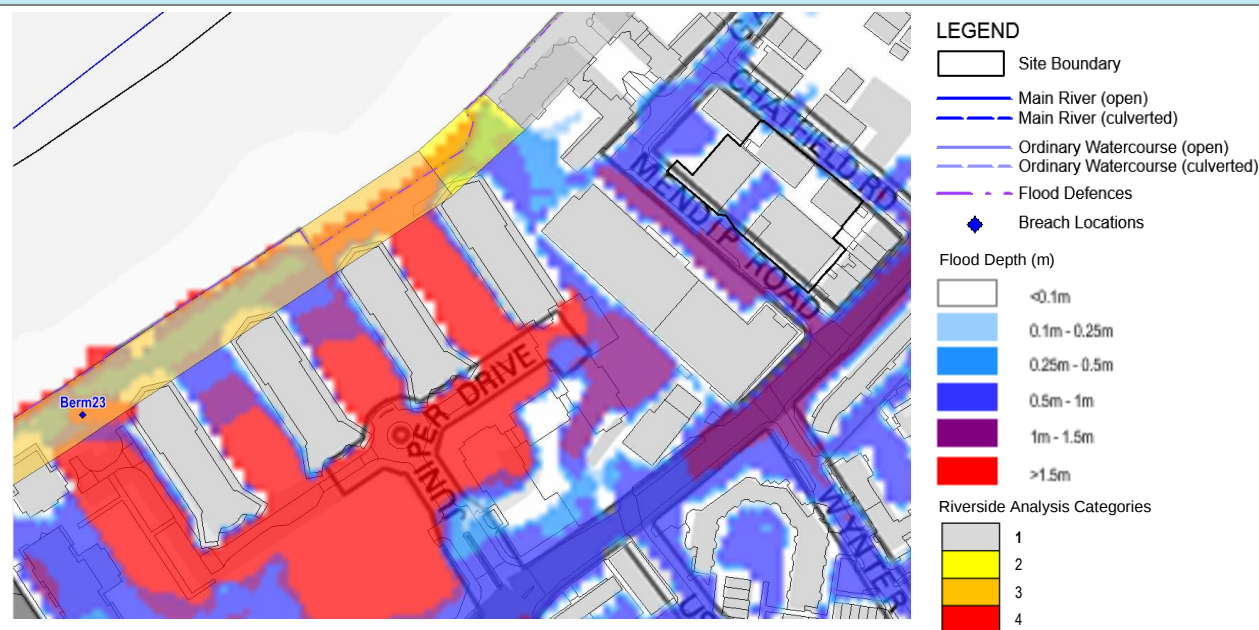
The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm23. The invert level was 3.87 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



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Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



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Riverside Analysis

There is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as a Category 1, which has an Assumed Breach Level of >5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0m.

SITE 10.6: 41-47 Chatfield Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. Areas in the centre of the site with existing buildings located are shown to have no hazard; however the remainder of the site is shown to have Significant hazard rating, which corresponds to 'danger for most people' and flood depths of up to 1m. The proposed use of the site includes residential uses which are classified as More Vulnerable. Residential uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable residential development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. This is typically achieved through locating all residential accommodation at first floor level or above. Finished floor levels for the proposed employment uses do not need to be raised, however a safe place of refuge will need to be provided sufficient for all users of the site above the breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via Lombard Road to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Kambala Clubroom, 500m south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at medium risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment.	
	Indicative existing runoff rate: 1.4 l/s (1 in 1 year), 5.2 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unknown for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.6: 41-47 Chatfield Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

The proposed use for the site includes residential use which is classified as More Vulnerable development. Modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding to significant depths. It is therefore necessary to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge, to demonstrate that the development can be made safe for its lifetime. Residential uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. SuDS should be considered early in the site masterplan and applied to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

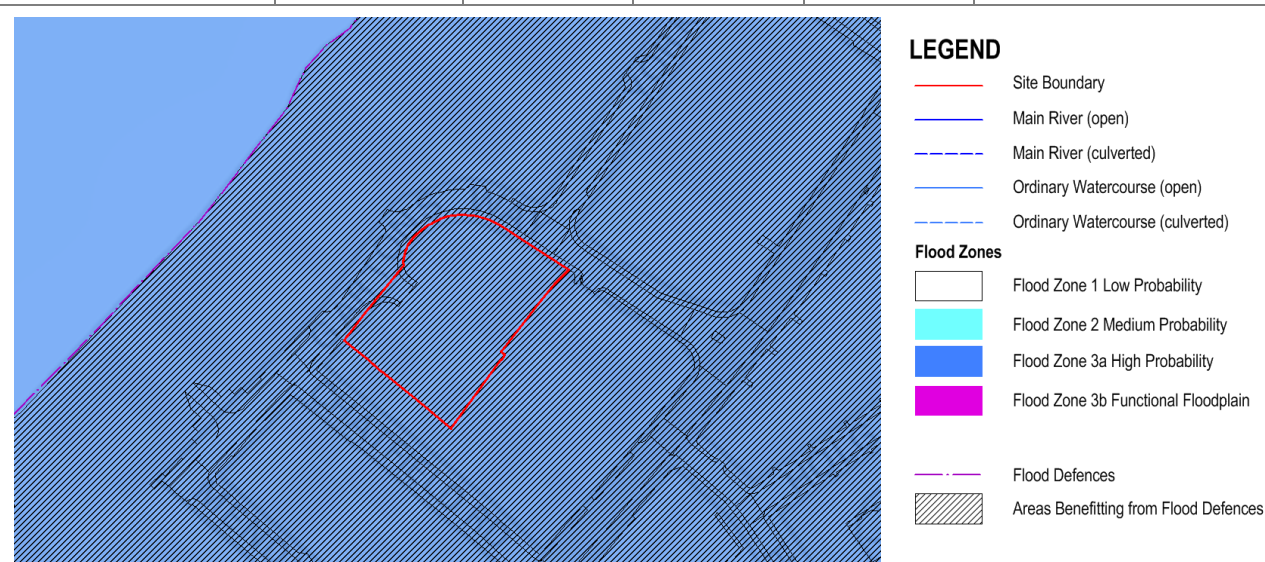
SITE 10.8 : Gartons Industrial Estate, Gartons Way, SW11**1) PROPOSED DEVELOPMENT**

Site ID	10.8
Site Address	Gartons Industrial Estate, Gartons Way, SW11
Site Area	0.36ha
Current Use	Industrial estate
Allocated Use	Mixed use redevelopment (residential and employment).
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK**Flood risk from rivers**

The site is located in close proximity to the River Thames.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	100 %	0 %	0 %	100 %



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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

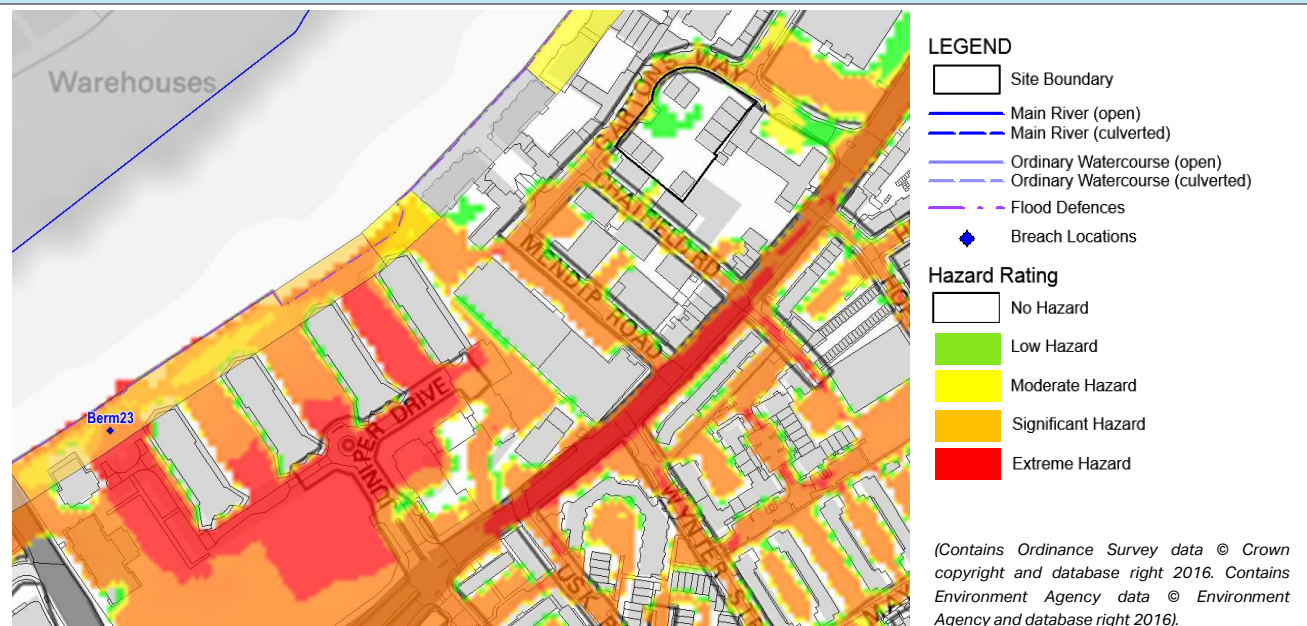
SITE 10.8 : Gartons Industrial Estate, Gartons Way, SW11

3) LEVEL 2 ASSESSMENT

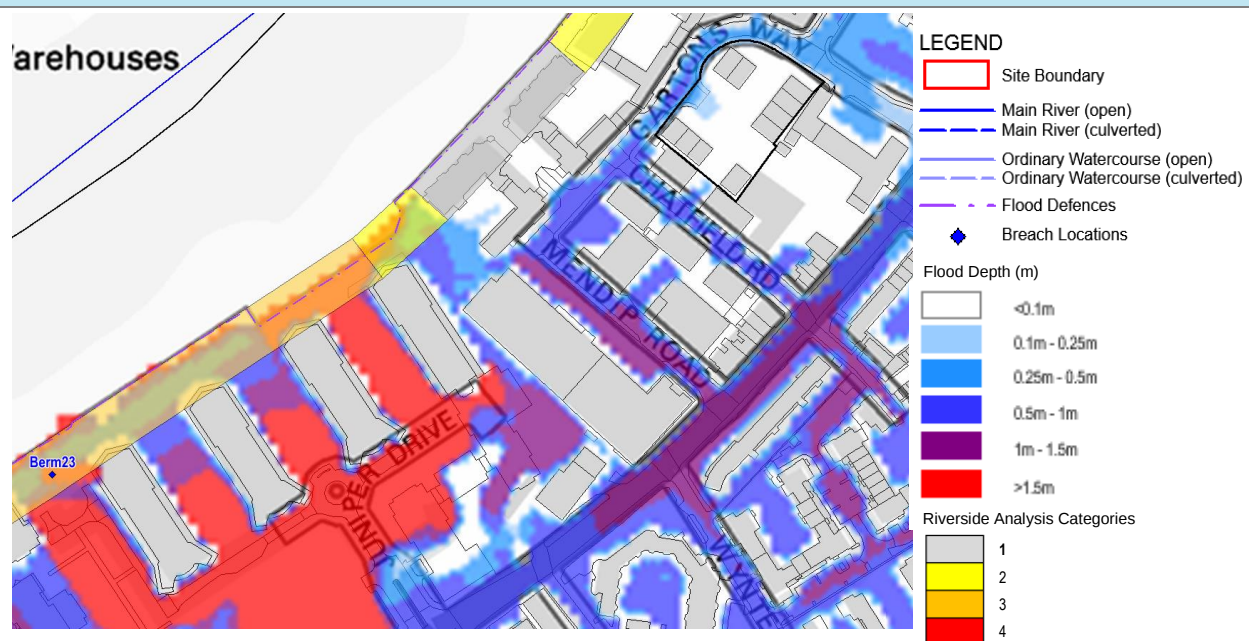
The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm23. The invert level was 3.87 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

There is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as a Category 2, which has an assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0.5-0m.

SITE 10.8 : Gartons Industrial Estate, Gartons Way, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. Areas in the centre of the site with existing buildings located are shown to have no hazard; however the remainder of the site is shown to have Significant hazard rating, which corresponds to 'danger for most people' and flood depths of up to 1m. The proposed use of the site includes residential uses which are classified as More Vulnerable. Residential uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable residential development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. This is typically achieved through locating all residential accommodation at first floor level or above. Finished floor levels for the proposed employment uses do not need to be raised, however a safe place of refuge will need to be provided sufficient for all users of the site above the breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via Gartons Way to the east of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Kambala Clubroom, south east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at medium risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment.	
	Indicative existing runoff rate: 1.6 l/s (1 in 1 year), 5.9 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unknown for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.8 : Gartons Industrial Estate, Gartons Way, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m2. Permeable paving ~ £30-50/m2. Filter strips £2-4m2. Detention basin £15-50m3. Concrete storage tank £449-518/m3.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

Modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding to significant depths. The proposed use for the site includes residential use which is classified as More Vulnerable development. In order to demonstrate that the development can be made safe, residential uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. It will be essential to prepare a FWEP for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge.

SuDS should be incorporated into the site design to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.

SITE 10.9: York Road Business Centre, Yelverton Road, SW11

1) PROPOSED DEVELOPMENT

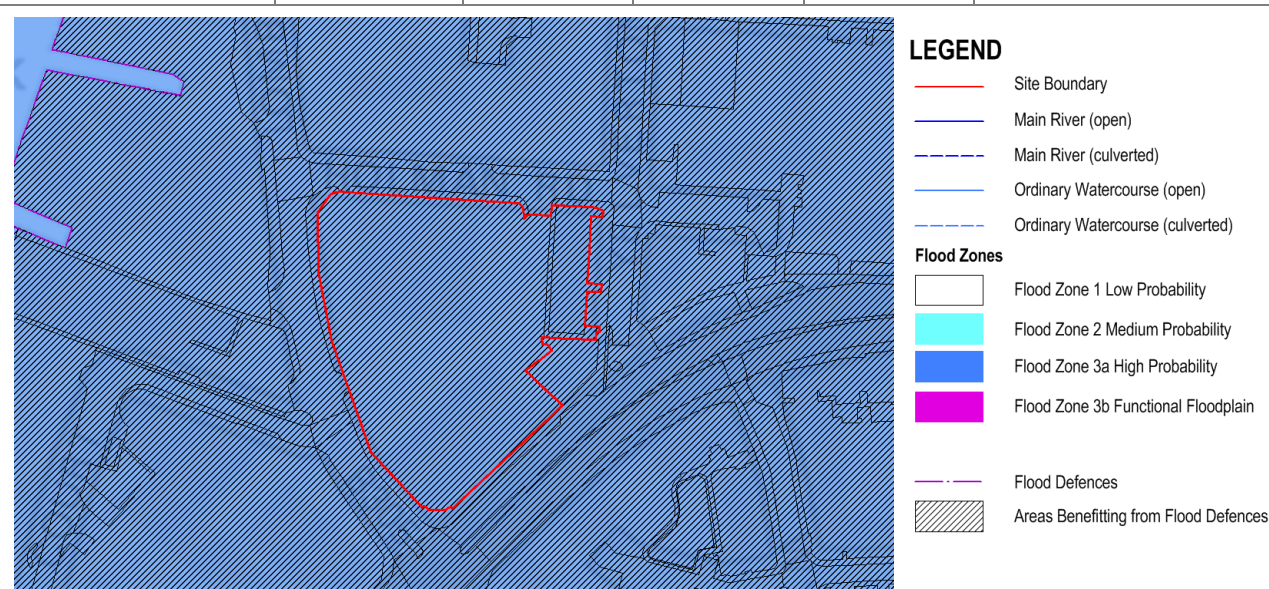
Site ID	10.9
Site Address	York Road Business Centre, Yelverton Road, SW11
Site Area	0.7ha
Current Use	Business centre
Allocated Use	Mixed use redevelopment (residential and employment).
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the River Thames.

Proportion of potential development site within Flood Zone	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	97 %	3 %	0 %	100 %



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Flood risk from all other sources			Limitations
Risk of flooding to the potential development site and surrounding area	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	High Risk 1 in 30 year (3.3% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

Historic records of flooding from each source within a 100m radius of potential development site	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

SITE 10.9: York Road Business Centre, Yelverton Road, SW11

3) LEVEL 2 ASSESSMENT

The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

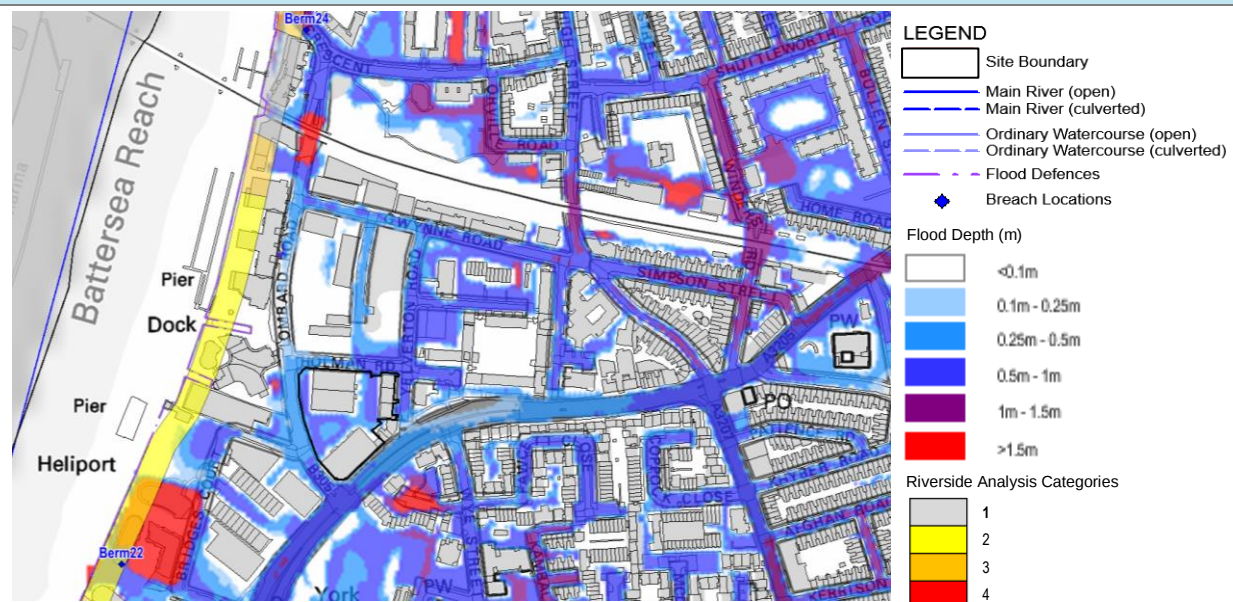
The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm22. The invert level was 4.66 mAOD and the width of the breach is 20m

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



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Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



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Riverside Analysis

The Riverside Analysis shows that there is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as a Category 2, which has an assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0.5-0m.

SITE 10.9: York Road Business Centre, Yelverton Road, SW11**4) RECOMMENDATIONS AND POLICIES**

Development Layout and Sequential Approach	The site is entirely within the defended Flood Zone 3a of the tidal River Thames. Areas where existing buildings are located are shown to have no hazard; however the remainder of the site is shown to have Significant hazard rating, which corresponds to 'danger for most people' and flood depths of up to 1m. The proposed use of the site includes residential uses which are classified as More Vulnerable. Residential uses should be located at first floor level or above, with uses of lower vulnerability occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable residential development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. This is typically achieved through locating all residential accommodation at first floor level or above. Finished floor levels for the proposed employment uses do not need to be raised, however a safe place of refuge will need to be provided sufficient for all users of the site above the breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via York Road to the south of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Kambala Clubroom, 200m east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at high risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment.	
	Indicative existing runoff rate: 3.1 l/s (1 in 1 year), 11.7 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unknown for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.9: York Road Business Centre, Yelverton Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

Modelling of a breach in the flood defences in close proximity to the site shows that the site and surrounding areas are at residual risk of flooding to significant depths. The proposed use for the site includes residential use which is classified as More Vulnerable development. To make sure that the development can be made safe for its lifetime, residential uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. In addition, flood warning and emergency procedures for the site should be detailed in a FWEP. This should incorporate items such as steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. Steps should be taken to reduce the risk of surface water flooding to the surrounding areas through the incorporation of SuDS into the site design. On this basis, it is likely that this site would pass the Exception Test.

SITE 10.10 : 208-214 York Road & 4 Chatfield Road, SW11

1) PROPOSED DEVELOPMENT

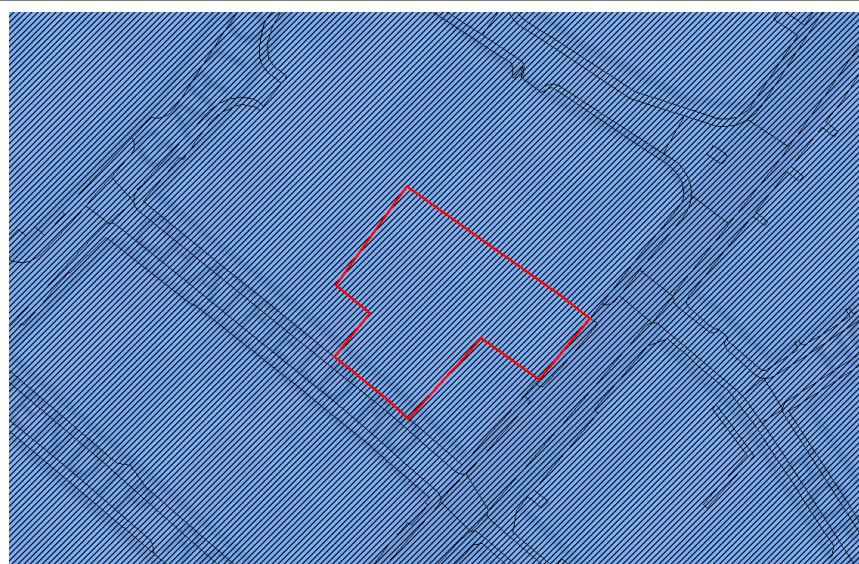
Site ID	10.10
Site Address	208-214 York Road & 4 Chatfield Road, SW11
Site Area	0.19ha
Current Use	Vacant, former industrial use
Allocated Use	Mixed use redevelopment (residential and employment).
Vulnerability	More Vulnerable

2) SUMMARY OF LEVEL 1 FLOOD RISK

Flood risk from rivers

The site is located in close proximity to the River Thames.

<i>Proportion of potential development site within Flood Zone</i>	Flood Zone 3b	Flood Zone 3a	Flood Zone 2	Flood Zone 1	Area Benefiting of Defences
	0 %	95%	5%	0%	100%



LEGEND

- Site Boundary
 - Main River (open)
 - - - Main River (culverted)
 - Ordinary Watercourse (open)
 - - - Ordinary Watercourse (culverted)
- Flood Zones**
- Flood Zone 1 Low Probability
 - Flood Zone 2 Medium Probability
 - Flood Zone 3a High Probability
 - Flood Zone 3b Functional Floodplain
- - - Flood Defences
 - Areas Benefiting from Flood Defences

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Flood risk from all other sources			Limitations
<i>Risk of flooding to the potential development site and surrounding area</i>	Surface Water flooding: (Level 1 SFRA Appendix A Figure 5.2 - uFMfSW)	Medium Risk 1 in 100 year (1% annual probability)	The uFMfSW data does not show the susceptibility of individual properties to surface water flooding. The uFMfSW also does not take into account the details of the existing drainage system.
	Groundwater flooding: (Level 1 SFRA Appendix A Figure 5.4 - BGS Susceptibility to Groundwater Flooding)	Medium Risk Potential for groundwater flooding to occur at surface, but no historic records of groundwater flooding	The dataset cannot be used on its own to indicate risk of groundwater flooding and should not be used to inform planning decisions at a site scale. It is suitable for use in conjunction with a large number of other factors, e.g. records of previous incidence of groundwater flooding, to establish relative risk of groundwater flooding.

Historic records of flooding

<i>Historic records of flooding from each source within a 100m radius of potential development site</i>	Fluvial records	Surface water records	Groundwater records	Sewer records	Multiple source records	Other
	0	0	0	3 Internal	0	0

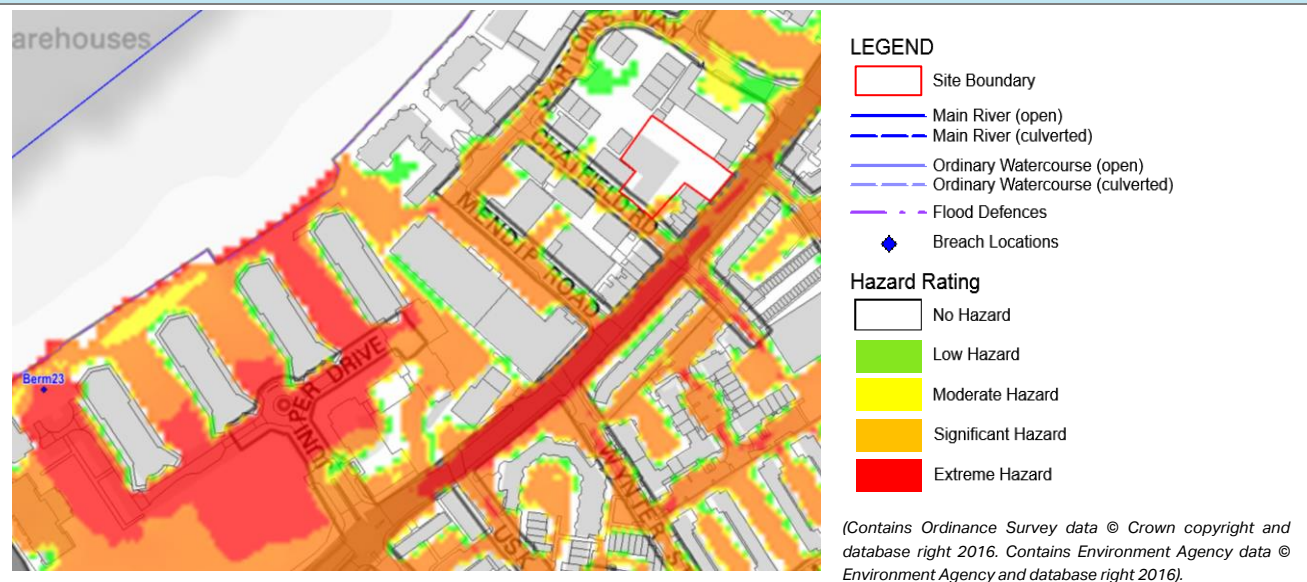
SITE 10.10 : 208-214 York Road & 4 Chatfield Road, SW11

3) LEVEL 2 ASSESSMENT

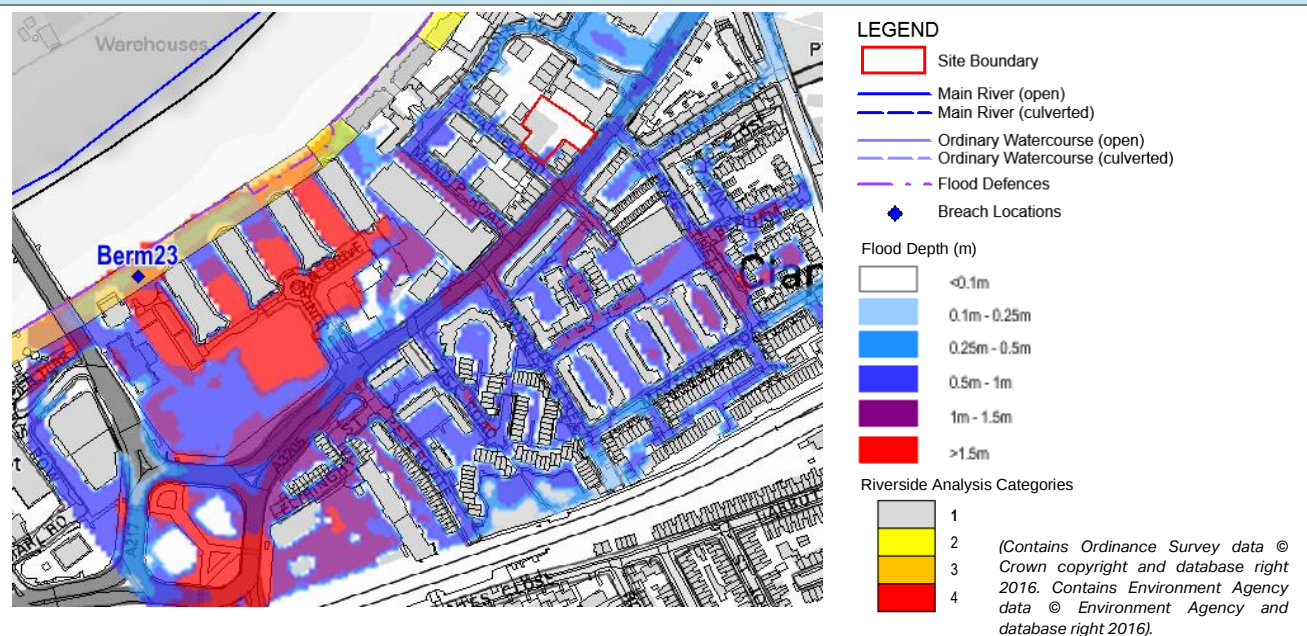
The London Borough of Wandsworth is located upstream of the Thames Barrier where tidal water levels are a function of the maximum tide level allowed through the Thames Barrier (defined by the barrier closure rule / matrix). As a result, when undertaking modelling of the Thames upstream of the Barrier typical return periods cannot be applied. For the purpose of this Level 2 site assessment, maximum flood depth and hazard mapping from the Environment Agency's updated River Thames breach modelling (2015) have been used, using the Maximum Likely Water Level (MLWL) under climate change conditions for the year 2100.

The mapping shows combined result for each of the breach scenarios. The worst case breach location for the site is considered to be breach location Berm23. The invert level was 3.87 mAOD and the width of the breach is 20m.

Thames Tidal Breach Modelling: Maximum Hazard Rating (MLWL 2100)



Thames Tidal Breach Modelling: Maximum Flood Depth (MLWL 2100) and Riverside Analysis Categories



Riverside Analysis

The Riverside Analysis shows that there is 1 breach location in close proximity to the site which provides a good indication of the likely impact to the site. Results from the riverside analysis completed as part of the 2008 SFRA identify the frontage adjacent to the site as a:

Category 1, which has an Assumed Breach Level of >5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0m.

Category 2, which has an Assumed Breach Level of 4.8-5.3 mAOD and Potential Peak Depth of Flow through breach (1 in 1000 year event) 0.5-0m.

SITE 10.10 : 208-214 York Road & 4 Chatfield Road, SW11

4) RECOMMENDATIONS AND POLICIES

Development Layout and Sequential Approach	The site is entirely within defended Flood Zone 3a associated with the tidal River Thames. The site itself is not shown to be at risk of flooding during a breach in the flood defences local to the site, however the surrounding areas are shown to be at risk of flooding of significant depths (up to 1.5m along the A3205 south of the site). This corresponds to ratings of Significant and Extreme flood hazard. The proposed use of the site includes residential uses which are classified as More Vulnerable. Residential uses should be located at first floor level or above, with uses of lower vulnerability, such as employment use, occupying the ground floor space. Self-contained residential basements and bedrooms at basement level are not permitted in Flood Zone 3a or areas that have 'potential for groundwater to occur at the surface' (BGS Susceptibility to Groundwater Flooding). Less Vulnerable basements, basement extensions and conversions, such as plant, car parking etc., must provide safe internal access to higher floors situated above levels derived from the breach modelling. Further ground investigations would be required at this site to confirm the likelihood of groundwater occurrence.	Section 9.2
Finished Floor Levels	For More Vulnerable residential development, finished floor levels for habitable accommodation should be set at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. This is typically achieved through locating all residential accommodation at first floor level or above. Finished floor levels for the proposed employment uses do not need to be raised, however a safe place of refuge will need to be provided sufficient for all users of the site above the breach modelling MLWL 2100 scenario flood level. There is no set guidance for the setting of finished floor levels of development in relation to surface water flood risk. The site is at medium risk of surface water flooding and it is therefore recommended that consideration is given to the flow or surface water during the development of the site masterplan and layout to ensure effective management of surface water flows.	Section 9.3
Safe Access/Egress	Access to the site is provided via York Road to the south of the site. In the event of widespread flooding associated with a breach in the Tidal Thames Defence, and for precautionary purposes, it is recommended that a Flood Warning and Evacuation Plan (FWEP) is developed.	Section 9.7
Flood Warning and Evacuation Plan	A Flood Warning and Evacuation Plan (FWEP) should be prepared for the site in case of a breach in the tidal flood defences. It should detail how a flood warning will be provided and the safest point of refuge for the occupants of the site and what will be done to protect development and contents. Where possible, the FWEP should also detail the length of time before the site becomes inaccessible by emergency vehicles. Flood Warning Areas The local area is covered by the Environment Agency Flood Warning Areas for 'Tidal Thames from Deptford Creek to Wandsworth Bridge'. Residents of the site should ensure they are signed up to the Environment Agency Flood Warning system. Emergency Rest Centres The closest designated emergency rest centre for this site is the Kambala Clubroom, 300m east of the development site.	Section 9.14
Surface Water Management	Current risk of flooding The site is within Drainage Catchment 2, which is within London Borough of Wandsworth. The uFMfSW indicates that the majority of the site and surrounding area is at medium risk of surface water flooding. The potential development must not increase flood risk to other areas in the Drainage Catchment. .	
	Indicative existing runoff rate: 0.9 l/s (1 in 1 year), 3.5 l/s (1 in 100 year) Indicative Greenfield Runoff Rate: 5 l/s	Section 10
	SuDS Suitability Reference to the SWMP Appendix C2 Figure 4 identifies that (prior to the completion of a site investigation to determine precise local conditions) infiltration of surface water into the ground is potentially unknown for the site. Site investigations will be required prior to the development of a Drainage Strategy for the site. Techniques which should be considered include green roofs, filter strips, detention basins and ponds, as well as permeable surfacing in combination with tanked systems	Section 10.3 and 10.9

SITE 10.10 : 208-214 York Road & 4 Chatfield Road, SW11

	Drainage Strategy and Approvals Wandsworth Council will require a Drainage Strategy to be prepared outlining the surface water management for the site, runoff rates and consideration of SuDS in line with the London Plan policy 5.13 and Local Plan policies. Where it is not possible to achieve greenfield runoff rates in accordance with the preferred standards set out in the London Plan policy 5.13 and Design and Construction SPG (April 2014), then justification must be provided. Arrangements for the future maintenance of the drainage system must be made and detailed in the Drainage Strategy. There is no automatic right to connect to the existing Thames Water network. Any potential diversions and/or discharges into a sewer or main river must be agreed with Thames Water or Environment Agency, respectively.	Section 10.6
	Indicative Unit Costs Green roofs ~ £90/m². Permeable paving ~ £30-50/m². Filter strips £2-4m². Detention basin £15-50m³. Concrete storage tank £449-518/m³.	Section 10.4

5) EXCEPTION TEST CONSIDERATIONS

The NPPF states that there are two parts to the Exception Test that must be passed for development to be allocated or permitted:

- 1) *"it must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk"* and
- 2) *"demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall"*.

This development site is entirely within Flood Zone 3a associated with the River Thames and benefits from the presence of flood defences. In the event of a breach in the defences local to the site, modelling shows that the road network along the southern boundary of the site is identified to be at Significant Hazard.

The proposed use for the site includes residential use which is classified as More Vulnerable development. To ensure that the development can be made safe, residential uses should be located on upper floors so that finished floor levels for habitable accommodation are at or above the Thames Tidal breach modelling MLWL 2100 scenario flood level. In addition, it will be essential that a FWEP is prepared for residents / occupants of the site detailing steps to evacuate the site prior to the onset of flooding as well as areas designated as safe places of refuge. The use of SuDS should be incorporated into the site design to reduce risk of surface water flooding to surrounding areas. On this basis, it is likely that this site would pass the Exception Test.