

London Borough of Tower Hamlets Local Plan

Site Allocations Sequential and Exception Tests

October 2017

1. Background

The London Borough of Tower Hamlets (LBTH) contains localised areas that are prone to flooding from a range of sources including rivers, docks, canals, groundwater, sewers and surface water. There are large areas of Tower Hamlets which are at risk of flooding from one (or more) of these sources. There is also significant development and regeneration proposed in Tower Hamlets in the future.

Development pressures across Tower Hamlets are likely to mean that some development is required in medium-to-high risk flood zones: 2 or 3a. It is crucial that the allocation of development considers flood risk early in the planning process. It is therefore necessary for Tower Hamlets to consider whether potential development sites in the flood zones need to and can pass the sequential and exception test.

2. Introduction

This document forms the sequential test for the site allocations identified in the proposed submission version of the Tower Hamlets Local Plan (from here on referred to as the Local Plan). The sites have been allocated as part of the planning process to make sure that the borough has the necessary infrastructure needed to support the anticipated level of housing growth set out in the borough's Local Plan and can deliver this housing growth.

This assessment is based on the level 1 and level 2 Strategic Flood Risk Assessment (SFRA) (November 2016), along with the Integrated Impact Assessment (IIA) (November 2017). It follows guidance set out in the National Planning Policy Framework (NPPF) and the Planning Practice Guidance on flood risk. The test requires that where sites are allocated for development in areas at risk of flooding (flood zones 2 and 3), it should be demonstrated that there are no sites reasonably available in areas of lower flood risk and are suitable for the proposed development.

The information in the level 1 and level 2 SFRA and the IIA has been used to determine whether a potential development location can pass the exception Test as defined in the NPPF, demonstrating that any infrastructure critical to the delivery of the Local Plan has a reasonable prospect of delivery. This includes any necessary flood risk infrastructure to enable development to remain 'safe' in compliance with NPPF and the accompanying Planning Practice Guidance.

It should be noted that whilst this document sets out whether a site can pass the exceptions test in principle based on the level 2 SFRA, in real terms the exceptions test can only be passed at the planning application stage where a suitable site specific flood risk assessment demonstrates that the development will be safe and not increase flood risk elsewhere.

3. Policy on flood risk

The need to address factors such as minimising the risk of flooding because of the long term changes in the climate has been addressed in the NPPF (see paragraphs 99-105). It requires that inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.

The London Plan (see policy 5.12) expects development proposals to respond to flood risk and incorporate flood resistant design, in accordance with strategic flood risk assessments and the NPPF.

In addition, developments are expected to incorporate sustainable drainage systems (SUDS) (and a hierarchy for surface water management is set out in policy 5.13).

Policy S.ES1 of the proposed submission version of the Local Plan requires developments to use the sequential test to assess and determine the suitability of land uses based on flood risk. It also requires reducing the risk of flooding by requiring all new developments in high flood risk

flood zones to demonstrate that they are safe and pass the exception test. Policy D.ES5 requires all new developments to reduce water usage, run-off and discharge from the site through water re-use and sustainable drainage systems techniques.

4. The sequential test

Planning Practice Guidance requires inappropriate development in areas at risk of flooding (i.e. in flood zones 2 and 3 or land within flood zone 1 which has critical drainage problems) to be avoided by directing development away from areas at highest risk. Where development is necessary, it is required that it is made safe without increasing the risk of flooding elsewhere.

Thus, the aim of the sequential test is to steer new development to areas where the probability of flooding is the lowest. Within Tower Hamlets, this means guiding vulnerable development, wherever possible, into flood zone 1 (areas with low probability of flooding).

The NPPF sets out a sequential approach in order to achieve this. This requires that development can be located in flood zone 2 and then flood zone 3 only if there are no reasonably available sites in flood zone 1. Within each flood zone, new development should also be directed to sites at the lowest probability of flooding from all sources (as indicated by the Tower Hamlets SFRA).

A local planning authority allocating land for development must demonstrate that it has considered the range of possible options in conjunction with the flood zone information from the SFRA and vulnerability of development and has applied the sequential test, and where necessary the exception test, in the site allocation process.

The sequential test should be used to demonstrate that reasonably available alternative sites have been tested for each site allocation within the Local Plan ‘Reasonably available’ sites as defined in this document are those which have resulted from the site selection process and are stated within the proposed submission version of the Local Plan. This process is explained in the Site Allocations Methodology and is summarised below:

Stage	Task	Output	Local Plan Stage
1. Identify strategic sites for allocation	<ul style="list-style-type: none"> Set out how sites were sourced Set out the requirements for a strategic site for allocation Undertake a desk top site analysis – suitability, availability and achievability. 	Initial list of potential sites	Pre-initial engagement
2. Identify initial infrastructure requirements and match with suitable site	<ul style="list-style-type: none"> Identify infrastructure needs in line with the draft IDP (2016) Set out the criteria (physical and spatial needs) for each infrastructure requirements to enable delivery, such as location, size etc. and source of information Match sites with infrastructure requirements and specifications 	Initial list of infrastructure requirements matched with sites List of proposed site allocations for regulation 18 consultation	Pre-initial engagement
3. Undertake assessments (part 1) of proposed site allocations	<ul style="list-style-type: none"> Initial site capacity assessment Sustainability appraisal, flood risk assessment and initial viability assessment. 	Detailed site allocations in the draft Local Plan	Regulation 18 consultation
4. Review and	<ul style="list-style-type: none"> Review and update site assessment 	Refined list of	Post regulation

refine proposed site allocation following the regulation 18 consultation	<p>and constraints having regard to further evidence base and consultation.</p> <ul style="list-style-type: none"> Review and update infrastructure requirements on each site, in line with the final IDP (2017) 	proposed site allocations and infrastructure requirements.	18 consultation
5. Undertake assessments (part 2) of potential site allocation	<ul style="list-style-type: none"> Final site capacity assessment Heritage assessment Sequential and exception test Viability assessment 	List of final site allocations for regulation 19 consultation	Regulations 19 consultation

Undertaking the Site Allocations Methodology in 5 stages enables for effective comparison of the relative merits being considered with a range of other factors. Stage 1 of the methodology involves an initial desktop analysis of identified sites and is the first part of the process that facilitates an initial judgment as to whether a site is suitable, available and achievable. A flood zone assessment was undertaken as part of considering whether a site was suitable. The assessment ensured that each site is looked at comprehensively on its own merits and recorded in a consistent way. The flood risk zone assessment was developed with a score and weighting. Sites within a lower flood zone was scored higher, see below.

Indicator	Approach	Score Weighting (3 high-1 low)	3	2	1
Flood Zone	Assessment will be undertaken using the latest GIS layers from the Environment Agency.	2	Flood Zone 1	Flood Zone 2-3a	Flood Zone 3b

Although flood zones were an initial suitability consideration, this was balanced alongside other criteria, such as public transport accessibility, air quality to assess an overall scoring. Sites which assessed highest were taken to stage 2, where infrastructure requirements are further considered.

The need for new homes and jobs, alongside infrastructure are in areas of highest growth. These areas tend to be in areas of high flood zones, which present a number of challenges in terms of finding other reasonable alternatives for sites. The majority of developable land also tends to be in higher flood zone areas, which limits the reasonable site alternatives.

This paper provides evidence that there are not locations outside of those considered with a lower probability of flooding that could be considered to be 'reasonably available'. The area of search used for this assessment is the London Borough of Tower Hamlets.

5. Flood risk vulnerability of land uses

Table 2 of the NPPF Technical Guidance Note classifies the flood risk vulnerability of land uses into five categories, as follows:

Essential infrastructure

Includes:

- Essential transport infrastructure;
- Essential utility infrastructure including electricity generating power stations, water treatment works
- Wind turbines

Highly vulnerable

Includes:

- Police stations, fire stations and ambulance stations;
- Emergency dispersal points;
- Basement dwellings;
- Caravans, mobile homes and park homes intended for permanent residential use;
- Installations requiring hazardous substances consent.

More vulnerable

Includes:

- Hospitals;
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels;
- Buildings used for dwelling houses, student halls of residence, drinking establishment, nightclubs and hotels;
- Non-residential uses for health services, nurseries and educational establishments;
- Landfill and sites used for waste management facilities for hazardous waste;
- Sites used for holiday or short-let caravans and camping.

Less vulnerable

Includes:

- Police, ambulance and fire stations which are not required to be operational during flooding;
- Buildings used for shops; financial, professional and other services; restaurants and cafes; hot food takeaways; offices; general industry; storage and distribution; non-residential institutions not included in 'more vulnerable', and assembly and leisure;
- Land and buildings used for agriculture and forestry;
- Waste treatment;
- Minerals working and processing;
- Water treatment works;
- Sewage treatment works.

Water-compatible development

Includes:

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

Planning Practice Guidance then sets out in which flood zones these land use classifications are acceptable, where they are not acceptable and where an exceptions test needs to be demonstrated:

Flood risk vulnerability and flood zone compatibility

Flood risk vulnerability classification		Essential infrastructure	Highly vulnerable	More vulnerable	Less vulnerable	Water compatible
Flood zone	Zone 1	√	√	√	√	√
	Zone 2	√	Exception test required	√	√	√
	Zone 3a	Exception test required	x	Exception test required	√	√
	Zone 3b: functional floodplain (not applicable to Tower Hamlets)	Exception test required	x	x	x	√

6a. Site allocation methodology

The Local Plan has identified sites for allocation which enables the council to demonstrate how it is positively meeting its need for housing and employment and secures land for infrastructure to support the anticipated level of growth. The Site Allocation Methodology is an evidence base for the Local Plan to demonstrate the council's methodology for identifying suitable sites for residential, employment and infrastructure development to meet the identified needs set out in the Local Plan.

The allocation of sites must meet national planning policy, which specifically addresses the topic of using a proportionate evidence base (paragraph 158). The consideration of reasonable alternatives is therefore one of the key tests of soundness. How the various sites that have been put forward for consideration and how they have performed against each other when measured against a range of set criteria is therefore relevant to satisfying this test.

6b. Sustainability appraisal of sites

A sustainability appraisal of the selected sites was carried out in via the IIA (November 2016). The assessment focussed on the impacts resulting from the spatial distribution of the various sites, rather than the effects of any given type of developments.

The appraisal demonstrated that the sites would either have positive or neutral effects on the majority of the objectives set out in the IIA, with the exception of those related to cultural heritage, biodiversity and flood Risk. Most of the sites potentially have negative effects on the objectives due to their location in relation to the heritage assets, designated sites and flood risk areas respectively. With regards to flood risk the objective simply identifies the level of existing flood risk as opposed to taking into account proposed uses or potential flood mitigation measures outlined in the policies contained within the 'protecting and managing our environment' chapter. Therefore the objective indicates the sites that are likely to require a flood risk assessment (including consideration of the NPPF sequential and exceptions tests) to be completed and if required, flood risk mitigation measures to be incorporated into developments.

The majority of site allocations are located within flood risk areas (either flood risk zone 2 or 3) and as a result score poorly against the flood risk objective. Tidal and fluvial flooding from the borough's rivers is the main flood risk affecting the sites as well as pluvial flood risks as a result of limited surface water run-off pathways within the urbanised environment. Five of the proposed sites are in flood risk zone 1 and therefore achieve positive scores against the flood risk objective. None of the site allocations represented a use incompatible with the flood risk level as defined in the NPPF, however for sites entirely within flood zone 3 they would be subject to the exception test and for sites partially within flood zone 3 these may also be subject to the exception test depending on whether the more vulnerable uses such as new dwellings are within flood zone 3.

6c. Assessing windfall sites

Windfall sites within flood zones 2 and 3 will be subject to the sequential test (and exception test if required) on a case-by-case basis in accordance with policy ES1 of the Local Plan.

Sequential and exception tests for the Local Plan site allocations

To realise the Local Plan vision through a spatial strategy, four sub areas have been identified to manage change at a strategic level whilst maintaining the 24 character places. This approach is considered more effective to manage the scale, type and amount of development in the borough and ensure the borough's unique heritage and distinct character places are protected whilst delivering sustainable communities. The sub areas show how areas of the borough will develop over the lifetime of the plan.

Within each sub area, sites have been allocated as part of the positive planning process to make sure the borough has the infrastructure need to support the anticipated level of growth. Twenty one sites in total have been identified for allocation. Specifically, strategic housing and employment sites (i.e. sites that can provide over 500 new net additional homes or sites that can provide employment floorspace and jobs) and key regeneration sites have been allocated). These sites will require various forms of infrastructure to support the growth. The main land uses and infrastructure are listed in the table below:

Land use	Infrastructure
<p><u>Housing</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> The sites are able to accommodate over 500 new net additional homes (the threshold is derived from the London Plan). Strategic infrastructure is available to support the development (site viability testing) <p>Assessment: The Local Plan states that the borough needs to deliver a minimum of 58,965 new homes between 2016 and 2031. The identified site is one of the 21 sites identified for large-scale housing and is essential to meet the housing targets.</p>	<p><u>Open space</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> The council should secure the delivery of new publicly accessible open space within areas of deficiency, as per the Open Space Strategy (2017). Identified in the IDP (2017) to meet the need for open space. <p>Assessment: A recent audit of the boroughs open space indicates that there is a deficit in the provision of publically accessible open space. It is estimated that more than 220 hectares of open space is required by 2031 to meet local need. Additional need has recently been identified requiring open space to be allocated on additional sites across the borough.</p>
<p><u>Employment</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> The Local Plan requires development to seek to maximise and deliver investment and job creation in the borough. The designation of employment types are set out in policy S.EMP1 of the Local Plan 2017. <p>Assessment: Employment projections published by the GLA estimate the number of jobs in the borough are projected to almost double, increasing by 125,000 to 2031.</p>	<p><u>Secondary school</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> Within area of search for new secondary school. In the centre / east of the borough Size for school required is 1.5 hectares Good levels of public transport accessibility <p>Assessment: The IDP (2017) identifies that additional secondary school provision is required. Additional need has recently been identified requiring secondary schools to be allocated on</p>

<p>Local evidence indicates that the demand for employment floorspace including offices and industrial is anticipated to be 756,000 square metres and 274,000 square metres in respectively.</p>	<p>additional sites across the borough.</p>
<p><u>Retail/commercial</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> • Retail uses support the functions within the town centre hierarchy and can also be appropriate in non-designated locations to provide comparison and convenience goods. 	<p><u>Primary school</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> • Within area of search for new primary school. • In the centre / east of borough • Size for school required is 0.4 hectares • Good levels of public transport accessibility <p>Assessment: The IDP (2017) identifies that additional primary school provision is required.</p> <p>Additional need has recently been identified requiring secondary schools to be allocated on additional sites across the borough.</p>
	<p><u>Community/local presence facility</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> • Located within a town centre project identified location of growth in the IDP (2017). <p>Assessment: By 2030/31, there is projected to be a deficit in provision of presence facilities of almost 4,000 square metres. To mitigate this deficit, between 2 and 4 equivalent expansions to existing ones) would need to be additional facilities (or delivered.</p>
	<p><u>Health facility</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> • Good levels of public transport accessibility • Directed towards town centres • 1000 square metres in size <p>Assessment: The borough requires 37 full time equivalent GP's to accommodate population growth to 2031. These should be located in areas with highest population growth, such the Isle of Dogs & South Poplar and the Lower Lea Valley.</p>
	<p><u>Leisure facility</u></p> <p>Criteria:</p> <ul style="list-style-type: none"> • Within area of high growth and/or provides a strategic need where it is not in an area of high population growth.

	<p>Assessment:</p> <p>Qualitative analysis in the Indoor facilities Strategy (2017) identifies the need for 1 new facility (Bishopsgate Goods Yard).</p>
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The council seeks to ensure that all new developments, including non-residential contribute towards carbon emissions. This can be done through a decentralised energy network or exploring the potential of creating a district heating facility. If a development proposes a district heating facility on a site with flood risk issues the applicant is expected to apply the sequential approach on site to direct the facility to areas away from flood risk, noting that that the land use (in itself) might require the exceptions test, if considered to be 'essential infrastructure' which is vulnerable to flood risk, in accordance with tables 1-3 of the Planning Practice Guidance.

Sub Area: City Fringe

- **Bishopsgate Goods Yard**
- **London Dock**
- **Marian Place Gas Works & The Oval**
- **Whitechapel South**

Bishopsgate Goods Yard

Location: Shoreditch High Street

Site description:

Bishopsgate Goods Yard is located on Shoreditch High Street and entirely within flood zone 1. The site is 4.24 hectares and currently occupied by the Shoreditch High Street Overground station and vacant land. The development proposal comprises redevelopment for housing and commercial/employment. Other infrastructure requirements have been identified as open space, an idea store.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use and infrastructure	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required
Housing	1	More vulnerable	Appropriate	No
Employment		Water-compatible development	Appropriate	No
Strategic open space		More vulnerable	Appropriate	No
Idea store/community use/leisure Facilities		Less vulnerable	Appropriate	No

Conclusion: The proposed land uses are within flood zone 1 and considered to be appropriate. However it has been recommended that the sequential test is carried out to confirm that there are no other sites available for development, which are at lower risk of flooding (from all sources).

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Employment	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Strategic open space	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Local presence facility/ Idea Store/community use	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.

Conclusion:

Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test. A site specific flood risk assessment will be required to assess all sources of flood risk.

Recommendations:

The following flood risk mitigation measures are recommended for this site:

- Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required.
- SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that infiltration SuDS are likely to be suitable for use across the majority of the site. The drainage system should provide sufficient capacity to cater for all events up to the 1 in 100 year storm event, incorporating the latest allowances for climate change.

London Dock

Location: Pennington Street

Site description:

London Dock is located on Pennington Street and almost entirely within flood zone 1, with a small area to the south of the site within flood zone 2 and flood zone 3a. The site has an area of 5.78 hectares and is currently vacant with development under construction. The development proposal comprises redevelopment for housing and employment uses. Other infrastructure requirements have been identified as: small open space (0.4 hectares), health facility and secondary school.

In accordance with tables 2 and 3 of technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	1-3a	More vulnerable	Exceptions test required if in flood zone 2 or 3a	In flood zone 2 or 3a*
Employment		Less vulnerable	Appropriate	In flood zone 2 or 3a*
Small open space		Water-compatible development	Appropriate	In flood zone 2 or 3a*
Secondary school		More vulnerable	Exceptions test required if in flood zone 2 or 3a	In flood zone 2 or 3a*
Health facility		More vulnerable	Exceptions test required if in flood zone 2 or 3a	In flood zone 2 or 3a*

Conclusion: The majority of the site is shown to be located within flood zone 1. All of the proposed uses of the site are compatible with this flood zone. Only a narrow strip of land along the southern boundary is located within flood zone 3. Proposed land uses with vulnerability classifications of 'more vulnerable' and 'essential infrastructure' will require the sequential and exception tests to be passed. The sequential approach will need to be adopted when considering development layout, locating higher vulnerability uses away from the southern boundary of the site and the northwest corner, where ground levels are lowest. Uses like open space are water compatible or less vulnerable are appropriate.

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. Only the extreme southern edge of the site is within zone 3, which should be avoided for housing. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3. Only the extreme southern edge of the site is within zone 3, which should be avoided for housing. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Small open space	<i>Are there alternative sites available in zones 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3. Only the extreme southern edge of the site is within zone 3, which should be avoided for a secondary school. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Secondary school	<i>Are there alternative sites available in zone 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3. Only the extreme southern edge of the site is within zone 3, which should be avoided for a secondary school. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. Only the extreme southern edge of the site is within zone 3, which should be avoided for a health facility. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion of sequential test: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test. However, a sequential approach should be applied, directing development towards flood zone 1. In addition development falling within the ‘less vulnerable’ to the ‘more vulnerable’ category will require an exceptions text if they are located in flood zone 3.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan, specifically policy S.H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Secondary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer</p>

	<p>the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site-specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include the following:</p> <ul style="list-style-type: none"> • All more vulnerable development should be located away from areas of flood zone 2 and 3. If any development is proposed in these areas, finished floor levels should be situated 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences and a route of safe access and egress should be established, towards areas of the site within flood zone 1. • No basement dwellings should be permitted within areas of the site located in flood zone 2 or 3a. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data suggests that the northern portion of the site is potentially suitable for bespoke infiltration SuDS; however, the southern portion is unlikely to be suitable for infiltration. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change.

Conclusion of exceptions test

Based on the sequential and exception test above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site-specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Marian Place Gas Works and The Oval

Location: Marian Place/The Oval/Emma Street

Site Description:

This site is located between Marian Place, The Oval and Emma Street and is entirely within flood zone 1. The site has an area of 3.75 hectares and is currently occupied by active gas holders and warehousing. The development proposal comprises redevelopment for housing and employment with open space as an additional infrastructure requirement.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	1	More vulnerable	Appropriate	No*
Employment		Less vulnerable	Appropriate	No*
Strategic open Space		Water-compatible development	Appropriate	No*

*Sequential test is also required in flood zone 1 where the site is impacted by other sources of flood risk.

Conclusion:

The proposed land uses are within flood risk zone 1 and considered to be appropriate. However it has been recommended that the sequential test is carried out to confirm that there are no other sites available for development, which are at lower risk of flooding (from all sources).

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Employment	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Strategic open space	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Compatible community use	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.

Conclusion: The proposed site is within flood zone 1 and therefore all of the proposed development is in accordance with the NPPF and an exceptions test is not required. No other sites with a lower risk of flooding from all types are available. A site-specific flood risk assessment will be required to assess all sources of flood risk.

Recommendations:

The following flood risk mitigation measures are recommended for the site:

- Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required.
- SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that infiltration SuDS are unlikely to be suitable for use across the majority of the site, so lined attenuation

systems may be required. The drainage system should provide sufficient capacity to cater for all events up to the 1-in-100 year storm event, incorporating the latest allowances for climate change.

Whitechapel South

Location: Whitechapel Road

Site description

The site is located on Whitechapel Road and entirely within flood zone 1. The site has an area of 12.9 hectares and is currently occupied by housing, health facilities and employment space. The development proposal comprises redevelopment for housing and employment uses. Other infrastructure requirements have been identified as open space, a health facility and a district heating facility.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing development	1	More vulnerable	Appropriate	No*
Employment		Less vulnerable	Appropriate	No*
Strategic open space		Water compatible development	Appropriate	No*
Health facility (re-provision)		More vulnerable	Appropriate	No*

*The sequential test is also required in flood zone 1 where the site is impacted by other sources of flood risk

The entirety of the site is shown to be located within flood zone 1. All of the proposed land uses for this site are compatible with this flood zone. Therefore the sequential test is not required; however, a sequential test will be carried out to ensure that there are no other sites available for development, which are at a lower risk of flooding from all types.

Sequential test – to ascertain whether there are other available sites available with a lower risk of flooding from all sources.

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Employment	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Strategic open space	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Health facility	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.

Conclusion: The proposed land uses are within flood zone 1 are considered to be appropriate in accordance with the NPPF. Therefore the exceptions test is not required. No other sites have been identified with a lower risk of all types of flooding. As the site is greater than a hectare in size, a site-specific flood risk assessment will be required to assess all sources of flood risk.

Recommendations:

The following flood risk mitigation measures are recommended for this site:

- Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required.
- SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is unlikely to be suitable for infiltration SuDS so lined attenuation systems may be required. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change.

Sub Area: Central

- **Bow Common Gas Works**
- **Chrisp Street Town Centre**

Bow Common Gas Works

Site location: Bow Common Lane

Site description:

Bow Gas Works is located on Bow Common Lane and entirely within flood zone 1. The site has an area of 3.94 hectares and is currently occupied by active gas holders, warehousing and car parking. The development proposal comprises of redevelopment for housing and employment. Other infrastructure requirements have been identified secondary school, strategic and open space.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	1	More vulnerable	Appropriate	No*
Employment		Less vulnerable	Appropriate	No*
Secondary school		More vulnerable	Appropriate	No*
Strategic open space		Water compatible	Appropriate	No*

**The sequential test is also required in flood zone 1 where the site is impacted by other sources of flood risk*

The entirety of the site is shown to be located within flood zone 1. All of the proposed land uses for this site are compatible with this flood zone. Therefore the sequential test is not required, however a sequential test will be carried out to ensure that there are no other sites available for development, which are at a lower risk of flooding from all types.

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Employment	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Strategic open space	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1.
Secondary school	<i>Are there alternative sites available in zone 1?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1. The majority of the site is within zone 1. The sequential test should be applied in the development layout, locating the development within zone 1 where possible. Development within zone 1 would not require an exceptions test.

Conclusion: The proposed land uses are within flood risk zone 1 are considered to be appropriate in accordance with the NPPF. Therefore the exceptions test is not required. No other sites have been identified with a lower risk of all types of flooding. A site-specific flood risk assessment will be required to assess all sources of flood risk.

Recommendations:

The following flood risk mitigation measures are recommended for this site:

- Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required.
- SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that infiltration SuDS are unlikely to be suitable for use across the majority of the site, so lined attenuation systems may be required. The drainage system should provide sufficient capacity to cater for all events up to the 1-in-100 year storm event, incorporating the latest allowances for climate change.

Chrisp Street Town Centre

Site location: Chrisp Street / East India Road / Kerbey Street

Site description:

Chrisp Street Town Centre is located between Chrisp Street, East India Road and Kerbey Street and entirely within flood zone 2. The site has an area of 3.62 hectares and is currently occupied by shops, community facilities, an idea store, public houses, cafes, a market and housing. The development proposal comprises mixed use redevelopment for housing, and employment. An idea store has been identified as an additional infrastructure requirement.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed Land Use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	2	More vulnerable	Appropriate	Yes
Retail		Less vulnerable	Appropriate	Yes
Idea Store (re-provision)		More vulnerable	Appropriate	Yes
Local market		Less vulnerable	Appropriate	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1 or 2?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 or 2. The site is within zone 2. The sequential test should be applied in the development layout.
Retail	<i>Are there alternative sites available in Zones 1 and 2?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. Development in zone 2 would not require an exceptions test
Idea Store	<i>Are there alternative sites available in Zones 1 and 2?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1. The site is within zone 2. The sequential test should be applied in the development layout

Conclusion

The entirety of the site is located within flood zone 2. The proposed land uses are within flood zone 1 are considered to be appropriate in accordance with the NPPF and therefore it is considered that the site has passed the sequential test. A site-specific flood risk assessment is required for development in accordance with the NPPF. An Exceptions Test is not required.

Recommendations:

The following mitigation measures are recommended for this site:

- Finished floor levels should be situated 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences.
- Site specific emergency evacuation procedures should be established to ensure that the risk to life is minimised should a breach of the River Thames defences occur, and a route of safe access and egress should be established towards flood zone 1.
- Basement dwellings should only be permitted within the site subject to the proposals passing the exception test.
- Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required.
- SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that infiltration SuDS are likely to be suitable for use, although bespoke design is likely to be required in the southern portion of the site. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change.

Sub-area: Lower Lea valley

- **Ailsa Street**
- **Leven Road Gas works**

Ailsa Street

Site location: Three Mills Lane/Hancock Road

Site description:

This site is located on Ailsa Street and entirely within flood zone 3a and has an area of 5.76 hectares. It is currently occupied by industrial activities, a former primary school and vacant land. The development proposal comprises mixed-use redevelopment for housing and employment. Other infrastructure requirements have been identified as a primary school, and open space.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exception test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small open space		Water compatible development	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes
Safeguarded waste site		More vulnerable	Exceptions test required	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3. The exceptions test is required to be undertaken.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3a.
Primary school	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	The site is considered to be at the same risk of flooding of those reasonably available within zone 3a. The exceptions test is required to be undertaken.
Safeguarded waste site	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding

		of those reasonably available within Zone 3a. The exceptions test is required to be undertaken.
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Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
<p>It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.</p>	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S.H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of primary provision within the borough with a limited land supply. This site offers the potential to support the education and skills of local people.</p> <p>Waste site – the waste site is to be safeguarded under London Plan policy to contribute towards capacity to help manage the boroughs waste.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site specific flood risk Assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>These include:</p> <ul style="list-style-type: none"> • The development site is located adjacent to the River Lea and a 16 metre buffer strip must be maintained along the river corridor. Demonstration will be required that the associated flood defences will be safe over the lifetime of the development, including any required maintenance and improvements. • Consideration should be given to the recommendations of the TE2100 plan and advice sought from the Environment Agency at an early stage. • The impact of revised climate change allowances on fluvial flood risk from the River Lee should be considered in assessment of flood risk and mitigation. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River

	<p>Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within Flood Zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents.</p> <ul style="list-style-type: none"> • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • The site is partially located within a critical drainage area and therefore robust surface water management will be critical for the development. SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site may be potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change. • Consideration should be given to emergency planning to manage the risk of flooding from reservoir breach.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site-specific flood risk assessment that takes into account the site recommendations from the SFRA.

Leven Road Gas Works

Site location: Leven Road

Site description:

Leven Road Gas Works is located on Leven Road and entirely within flood zone 3a. The site has an area of 8.56 hectares and is currently occupied by active gas holders. The development proposal is for residential housing. Other infrastructure requirements have been identified as employment, a secondary school and open.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exception test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Strategic open space		Water compatible	Appropriate	Yes
Secondary school		More vulnerable	Exception test required	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Secondary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Conclusion: Based on the above criteria, no other suitable site was available in a Flood Risk Zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Strategic open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Secondary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p>
A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	<p>A site specific flood risk Assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>These include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • The development site is located adjacent to the River Lea and a 16 metre buffer strip must be maintained along the river corridor. Demonstration will be required that the associated flood defences will be safe over the lifetime of the development, including any

	<p>required maintenance and improvements.</p> <ul style="list-style-type: none"> • Consideration should be given to the recommendations of the TE2100 plan and advice sought from the Environment Agency at an early stage. • The impact of revised climate change allowances on fluvial flood risk from the River Lea should be considered in assessment of flood risk and mitigation. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, Finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • The site is partially located within a critical drainage area and therefore robust surface water management will be critical for the development. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff from the site to greenfield rates. Geological data indicates that infiltration SuDS are unlikely to be suitable for use across the site, so lined attenuation systems may be required. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change. • Consideration should also be given to emergency planning for the event of reservoir breach.
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Conclusion:

Based on the sequential and exception test above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site-specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Sub-area: Isle of Dogs and South Poplar

- **Aspen way**
- **Billingsgate market**
- **Crossharbour town centre**
- **Limeharbour**
- **Marsh Wall East**
- **Marsh Wall West**
- **Millharbour**
- **Millharbour South**
- **North Quay**
- **Reuters**
- **Riverside South**
- **Westferry Printworks**
- **Wood Wharf**

Aspen Way

Site location: Aspen Way

Site description

The site is located on Aspen Way and entirely within flood zone 3a. The site has an area of 6.10 ha and is currently occupied by a wholesale market, dual-carriageway, DLR services and housing. The development proposal comprises redevelopment for housing and employment. The infrastructure requirement identified is open space and a district heating facility.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exception test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Strategic open space		Water compatible	Appropriate	Yes
College (re-provision)		More vulnerable	Exception test required	Yes
Community centre and associated football pitches (re-provision)		More vulnerable	Exception test required	Yes

Sequential test

Identified uses	Stages in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Strategic open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
College (re-provision)	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Community Centre and associated football pitches	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	The football pitches and community use are required to be provided to serve the local community and to meet the needs identified in the IDP. No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the Sequential Test.

Exceptions test

NPPF requirement	Suggestions
It must be	Housing - allocating sites site for housing is central to achieving the

<p>demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.</p>	<p>spatial vision of the Local Plan - specifically policy S.H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Strategic open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>College and community centre (re-provision) – re-providing the college is essential to meet the needs of the local community and further education requirements.</p>
<p>A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site-specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>These include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that areas within the western and eastern extents of the site are potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change.

	<ul style="list-style-type: none"> • Consideration should be given to emergency planning to manage the risk of flooding due to upstream reservoir breach.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site-specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Billingsgate Market

Site location: Trafalgar Way

Site description

Billingsgate Market is located on Trafalgar Way and is predominately within flood zone 3a, with a small portion of the site in flood zone 2. The site has an area of 5.74 hectares and is currently occupied by a wholesale market. The development proposal is for housing, employment, open space, with a primary and/or secondary school identified as an additional infrastructure requirement.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	2-3a	More vulnerable	Exception test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Retail/commercial		Less vulnerable	Appropriate	Yes
Small open space		Water compatible	Appropriate	Yes
Secondary school		More vulnerable	Exception test required	Yes

Sequential test

Identified uses	Stages in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Retail/commercial	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Secondary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category, however uses falling within the 'less vulnerable' to 'more vulnerable'

category will be directed towards zone 2. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
<p>It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.</p>	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S.H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Secondary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p>
<p>A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site specific flood risk Assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (areas of flood zone 2 and areas with a lower relative flood hazard), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within flood zone 3a. They could be permitted in flood zone 2 subject to the proposals passing the exception test. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. • For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • SuDS should be implemented to manage surface water flood risk

	and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site-specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Crossharbour Town Centre

Site location: East Ferry Road

Site description: Crossharbour Town Centre is located on East Ferry Road and entirely within flood zone 3a. The site has an area of 4.89 hectares and is currently occupied by a supermarket, car parking, offices, health facility and Crossharbour DLR station. The development proposal comprises mixed use redevelopment for housing and employment. Other infrastructure requirements have been identified as a primary school, health facility and an, Idea Store/local presence facility.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	3a	More Vulnerable	Exceptions test required	Yes
Retail/commercial		Less vulnerable	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes
Health facility (re-provision)		More vulnerable	Exceptions test required	Yes
Community/local presence facility		More Vulnerable	Exceptions test required	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Retail/commercial	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Primary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Idea Store	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Health facility (re-provision)	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
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Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Retail/employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Secondary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p> <p>Local presence facility/Idea Store – new Idea Stores are required to support life-long learning and associated health and well-being benefits to local people.</p>
A site specific Flood Risk Assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	<p>A site-specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, Finished Floor Levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. • For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed

	<p>via internal stairs and sufficient in size to safely house all residents.</p> <ul style="list-style-type: none"> • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • The site is partially located within a critical drainage area and is therefore robust surface water management will be critical for the development. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that a substantial proportion of the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Limeharbour

Site location: Limeharbour, Marshwall

Site description

Limeharbour is located on Limeharbour Marshwall and entirely within flood zone 3a. The site has an area of 4.87 hectares and is currently occupied by industrial and office space. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space and a primary school.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exception test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Strategic open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exception Test required	Yes

Sequential test

Identified uses	Stages in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Employment	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Strategic open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.
Primary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Strategic open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p>
A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	<p>A site specific flood risk Assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA. These include:</p> <ul style="list-style-type: none"> •More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. •No basement dwellings should be permitted within the site. •To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. •Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated ‘safe haven’ can be provided above the flood level to enable rapid escape should defence failure occur. This

	<p>may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents.</p> <ul style="list-style-type: none"> • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • The site is partially located within a critical drainage area and therefore robust surface water management will be critical for the development. SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for installation of bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Marsh Wall East

Site location: Limeharbour Marshwall

Site description

Marsh Wall East is located on Limeharbour Marsh Wall and is within Flood Zone 3a, with small areas within flood zone 2. The site has an area of 3.42 hectares and is currently occupied by offices, housing, retail and a multi storey car park. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, primary school and, health facility.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Housing	2-3a	More Vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes
Health facility		More vulnerable	Exceptions test required	Yes

Sequential test

Proposed land use	Stage in sequential test	Vulnerability and compatibility
Housing	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	<p>No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a.</p> <p>Housing should be directed to zone 2 where</p>

		possible. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in Zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within Zone 3.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Primary School	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The school should be directed to zone 2 where possible. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S.H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within</p>

	<p>the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of primary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site-specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the SFRA. These include:</p> <p>More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (flood Zone 2 and lower hazard areas), with more flood compatible development (such as parking or open space) located in areas at the highest risk.</p> <ul style="list-style-type: none"> • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, Finished Floor Levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • The site is partially located within a critical drainage area and therefore robust surface water management will therefore be critical for the development. SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the majority of the site is unsuitable for infiltration, excepting certain areas along the southern boundary. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.

Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception text subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Marsh Wall West

Site location: Limeharbour, Marshwall

Site description

Marsh Wall West is located on Marsh Wall and entirely within flood zone 3a. The site has an area of 6.39 hectare and is currently occupied by offices, retail and a hotel. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, primary school, and a health facility.

In accordance with table 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Housing	3a	More Vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small Open Space		Water compatible	Appropriate	Yes
Primary School		More vulnerable	Exceptions Test required	Yes
Health Facility		More vulnerable	Exceptions test required	Yes

Sequential test

Identified Uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Primary school	<i>Are there alternative sites available in zones 1, 2</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection

	<i>and 3a?</i>	criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of primary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p>
A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>These include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level

	<p>anticipated through a breach of the River Thames defences.</p> <ul style="list-style-type: none"> • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • The site is partially located within a critical drainage area and therefore robust surface water management will therefore be critical for the development. SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the majority of the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Millharbour

Site location: Limeharbour Marshwall

Site description

The site is located at 2 Millharbour and is entirely within flood zone 3a. The site has an area of 3.58 ha and is currently occupied by a car sales centre, offices and a private primary and nursery. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, a primary school, and a health facility.

In accordance with table 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone Compatibility	Sequential test required?
Housing	3a	More vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exceptions Test required	Yes
Health facility		More vulnerable	Exceptions test required	Yes

Sequential test

Identified use	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3a.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3a.
Primary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within Zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the Sequential Test.

Exception test

NPPF requirement	Suggestions
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<p>It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.</p>	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of primary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, Finished Floor Levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • The site is partially located within a critical drainage area and therefore robust surface water management will therefore be

	<p>critical for the development.</p> <ul style="list-style-type: none"> • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the Exception Test subject to an appropriate site layout and a site specific Flood Risk Assessment that takes into account the site recommendations from the level 2 SFRA.

Millharbour South

Site location: Millharbour South

Site description

Millharbour South is located on Millharbour and entirely within flood zone 3a. The site has an area of 4.02 hectares. The development proposal comprises redevelopment for housing with other infrastructure requirements identified as open space, a primary school and a health facility.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes
Health facility		More vulnerable	Exceptions test required	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zone 1, 2 and 3a?</i>	<p>No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2.</p> <p>The site is considered to be at the same risk of flooding of those reasonably available within zone 3.</p>
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	<p>No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2.</p> <p>The site is considered to be at the same risk of flooding of those reasonably available within zone 3.</p>

Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Primary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zone 1. The site is considered to be at the same risk of flooding of those reasonably available within Zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of primary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p>
A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to

<p>users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk.</p> <ul style="list-style-type: none"> • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1-in-100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

North Quay

Site location: Upper Bank Street

Site description:

North Quay is located on Upper Bank Street and is predominately located in flood zone 3a with part of the site located in flood zone 2. The site has an area of 3.27 hectares and is currently vacant. The development proposal comprises redevelopment for employment-office with other compatible uses.

In accordance with table 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Employment	2-3a	Less vulnerable	Appropriate	Yes
Housing		More vulnerable	Exceptions test required	Yes
Small open space		Water compatible	Appropriate	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1, 2 and 3a. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p>
A site specific Flood Risk Assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.	<p>A site specific Flood Risk Assessment would be required to address this part of the Exceptions Test, and take into account any site recommendations from the level 2 SFRA.</p> <p>These include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (flood zone 2 and lower hazard areas), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within flood zone 3a. They might be possible in flood zone 2 provided the exception test is passed. • To mitigate against residual tidal flood risk, Finished Floor Levels

	<p>should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences.</p> <ul style="list-style-type: none"> • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system so consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Reuters

Location: Paul Julius Close

Site description

Reuters Ltd is located on Paul Julius Close and entirely within flood zone 3a. The site has an area of 1.89 hectares and is currently occupied by offices and associated car parking. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, and a primary school.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Small open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes

Sequential test

Identified uses	Stages in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	<p>No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2.</p> <p>The site is considered to be at the same risk of</p>

		flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Primary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan, specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school- there is a deficit of primary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p>
A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the

<p>increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk.</p> <ul style="list-style-type: none"> • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, Finished Floor Levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • The development site is located directly adjacent to the River Thames and a 16 m buffer strip must be maintained along the river corridor. Demonstration will be required that the associated flood defences will be safe over the lifetime of the development, including any required maintenance and improvements. Consideration should be given to the recommendations of the TE2100 plan and advice sought from the EA at an early stage. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA.

Riverside South

Site location: Westferry Circus

Site description

Riverside South is located on Westferry Circus and entirely within flood zone 3a. The site has an area of 2.17 hectares and is currently vacant. The development proposal comprises redevelopment for employment—office with open space identified as an additional infrastructure requirement.

In accordance with tables 2 and 3 of the technical guidance to the NPPF, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	Flood zone compatibility	Sequential test required?
Employment	3a	Less vulnerable	Appropriate	Yes
Housing		More vulnerable	Exceptions test required	Yes
Small open space		Water compatible	Appropriate	Yes

Sequential test

Identified uses	Stages in the sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Small open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. Only the extreme southern edge of the site is within zone 3, which should be avoided for a health facility. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a Flood Risk Zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the Sequential Test.

Exception test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan, specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031. Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough. Small open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.
A site specific flood	According to the level 2 SFRA, the development is unlikely to increase

<p>risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>flood risk elsewhere. A site specific flood risk Assessment would be required to address this part of the Exceptions Test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To these include:</p> <ul style="list-style-type: none"> • Development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • To mitigate against residual tidal flood risk, Finished Floor Levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within Flood Zone 1. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • The development site is located directly adjacent to the River Thames and a 16 m buffer strip must be maintained along the river corridor. Demonstration will be required that the associated flood defences will be safe over the lifetime of the development, including any required maintenance and improvements. Consideration should be given to the recommendations of the TE2100 plan and advice sought from the EA at an early stage. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change.
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Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA. A site specific flood risk assessment is required for the development.

Westferry Printworks

Site location: Westferry Road

Site description

Westferry Printworks is located on Westferry Road and entirely within flood zone 3a. The site has an area of 6.16 hectares and is currently occupied by an office, print-works and parking. The development proposal comprises mixed use redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, a secondary school, and an expanded leisure centre.

In accordance with table 3 of the technical guidance, the classifications of the proposed uses are as follows:

Proposed land use	Flood risk zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	3a	More vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Strategic open space		Water compatible	Appropriate	Yes
Secondary School		More vulnerable	Exceptions test required	Yes
Leisure Centre		Less Vulnerable	Appropriate	Yes

Sequential test

Identified uses	Stage in the sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in Zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within Zone 3.
Strategic open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Secondary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in Zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within Zone 3.
Leisure facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability	Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan - specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and

<p>benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.</p>	<p>2031.</p> <p>Employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan, specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Strategic open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Secondary school - there is a deficit of secondary school provision within the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Leisure facility – allocating this site or a leisure facility will help meet the need of the growing population.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (considering the flood hazard distribution across the site), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • The site is partially located within a Critical Drainage Area and is therefore robust surface water management will be critical for the development. SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the site is potentially suitable for bespoke infiltration SuDS. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system and consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice

sought from the EA at an early stage.

Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk assessment that takes into account the site recommendations from the level 2 SFRA. A site specific flood risk assessment is required in accordance with the NPPF.

Wood Wharf

Site location: Preston's Road

Site description

Wood Wharf is located on Prestons Road and predominately within flood zone 3a, with some small areas of flood zone 2. The site has an area of 7.29 hectares and is currently partially vacant and under construction. The development proposal comprises redevelopment for housing and employment. Other infrastructure requirements have been identified as open space, a primary school, an idea store, and a health facility.

In accordance with table 3 of the technical guidance, the classifications of the proposed uses are as follows:

Proposed land use	Flood zone	Vulnerability classification	NPPF: Flood zone compatibility	Sequential test required?
Housing	2- 3a	More vulnerable	Exceptions test required	Yes
Employment		Less vulnerable	Appropriate	Yes
Retail/commercial		Less vulnerable	Appropriate	Yes
Strategic open space		Water compatible	Appropriate	Yes
Primary school		More vulnerable	Exceptions test required	Yes
Idea Store		Less vulnerable	Appropriate	Yes
Health facility		More vulnerable	Exceptions test required	Yes

Sequential test

Identified uses	Stage in sequential test	Assessment
Housing	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Employment	<i>Are there alternative sites available in Zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Retail/commercial	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within

		zone 3.
Strategic open space	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Secondary school	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Idea Store/community use	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.
Health facility	<i>Are there alternative sites available in zones 1, 2 and 3a?</i>	No reasonably available additional sites (other than windfall sites) that meet the site selection criteria are available in zones 1 and 2. The site is considered to be at the same risk of flooding of those reasonably available within zone 3.

Conclusion: Based on the above criteria, no other suitable site was available in a flood risk zone of a lower category. As such this site is the most suitable for the range of uses and therefore the site passes the sequential test.

Exceptions test

NPPF requirement	Suggestions
It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by an SFRA where one has been prepared.	<p>Housing - allocating sites site for housing is central to achieving the spatial vision of the Local Plan, specifically policy S. H1 which seeks to deliver which seeks to deliver 58,965 homes across the borough (equating to at least 3,931 new homes per year) between 2016 and 2031.</p> <p>Retail/employment – allocating employment uses to this site is essential to accommodating employment growth and achieving the spatial vision of the Local Plan - specifically policy S.EMP1 which seeks to maximise and deliver job creation in the borough.</p> <p>Strategic open space – allocating open space to this site will help to reduce the significant deficit of publically accessible open space within the borough and will to support the objective of policy S.OWS1 of the Local Plan.</p> <p>Primary school - there is a deficit of secondary school provision within</p>

	<p>the borough with a limited land supply. This site allocations offer the potential to support the education and skills of local people.</p> <p>Health facility – new health facilities are required to support the identified housing and population growth to ensure good health and well-being of local people.</p> <p>Local presence facility/Idea Store – new Idea Stores are required to support life-long learning and associated health and well-being benefits to local people.</p>
<p>A site specific flood risk assessment must demonstrate that the development will be safe for its lifetime, taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.</p>	<p>A site specific flood risk assessment would be required to address this part of the exceptions test, and take into account any site recommendations from the level 2 SFRA.</p> <p>To summarise these include:</p> <ul style="list-style-type: none"> • More vulnerable development should be sequentially allocated to areas of the site at lower relative risk of flooding (areas of flood zone 2 and with a lower relative flood hazard), with more flood compatible development (such as parking or open space) located in areas at the highest risk. • No basement dwellings should be permitted within the site. • To mitigate against residual tidal flood risk, finished floor levels should be raised 300 mm above the 2100 year maximum water level anticipated through a breach of the River Thames defences. • Site specific emergency evacuation procedures must be in place to ensure that the risk to life is minimised should a breach of the River Thames defences occur. Safe access and egress routes should be provided above the 2100 breach flood level and lead to higher ground within flood zone 1. For residential developments where this is not feasible, a dedicated 'safe haven' can be provided above the flood level to enable rapid escape should defence failure occur. This may be provided in the form of a sheltered communal space within the building, accessed via internal stairs and sufficient in size to safely house all residents. • Flood resilient construction techniques should be employed to reduce damage and increase the speed of recovery should any flooding events occur. • Ground conditions should be confirmed through site investigation and dewatering of excavations and basement waterproofing implemented where required. • SuDS should be implemented to manage surface water flood risk and restrict post-development runoff to greenfield rates. Geological data indicates that the central area of the site is unlikely to be suitable for infiltration; however, the eastern and western extents of the site may be suitable for bespoke infiltration SuDS design. The drainage system should provide sufficient capacity to cater for up to the 1 in 100 year storm event, incorporating the latest guidance regarding climate change. • The development site is located adjacent to a dock system and consideration should be given to the recommendations of the TE2100 plan with respect to future dock wall raising and advice sought from the EA at an early stage.

Conclusion

Based on the sequential and exception tests above, it was concluded that no other site is reasonably available in a flood risk zone of lower category and that the site was most suitable. There is a reasonable prospect of compliance with the second part of the exception test subject to an appropriate site layout and a site specific flood risk Assessment that takes into account the site recommendations from the level 2 SFRA. A site specific flood risk assessment is required for development.