FLOOD
RISK
ASSESSMENT

On behalf of: DALE VENN ARCHITECTS
Date: 30TH APRIL 2025

1. Introduction

A Flood Risk Assessment (FRA) has been commissioned by Dale Venn Architects, and has been prepared in support of the planning application for the proposed development at 20 Wallasey Crescent, Ickenham, UB10 8SA. The purpose of this report is to evaluate potential flood risks affecting the site, as well as the impact the proposed development may have on local flooding, in accordance with the guidance outlined in the National Planning Policy Framework (NPPF).

To provide a comprehensive appraisal, this assessment considers flooding from all possible sources and examines proposed measures for managing surface water resulting from the development. Information for this report has been sourced from various relevant authorities and publicly available resources, including the Environment Agency, British Geological Survey, National Soil Resources Institute, Ordnance Survey data, aerial imagery, historical mapping records, and strategic planning documents published by the London Borough of Hillingdon, which acts as both the Local Planning Authority and the Lead Local Flood Authority.

2. Site Description

Site Area: 440m² (total), with approximately 250m² comprising impermeable surfaces
Grid Reference: TQ 07383 86441

This proposal concerns the construction of a part single-storey, part two-storey rear extension, along with the addition of a front porch to the existing residential property at 20 Wallasey Crescent, Ickenham, UB10 8SA. Figure 1 presents an aerial image indicating the wider setting of the site, while Figure 2 specifically highlights the location of the proposed development.

Figure 1: *Aerial photograph illustrating the location and surrounding area of the proposed development at 20 Wallasey Crescent, Ickenham.*

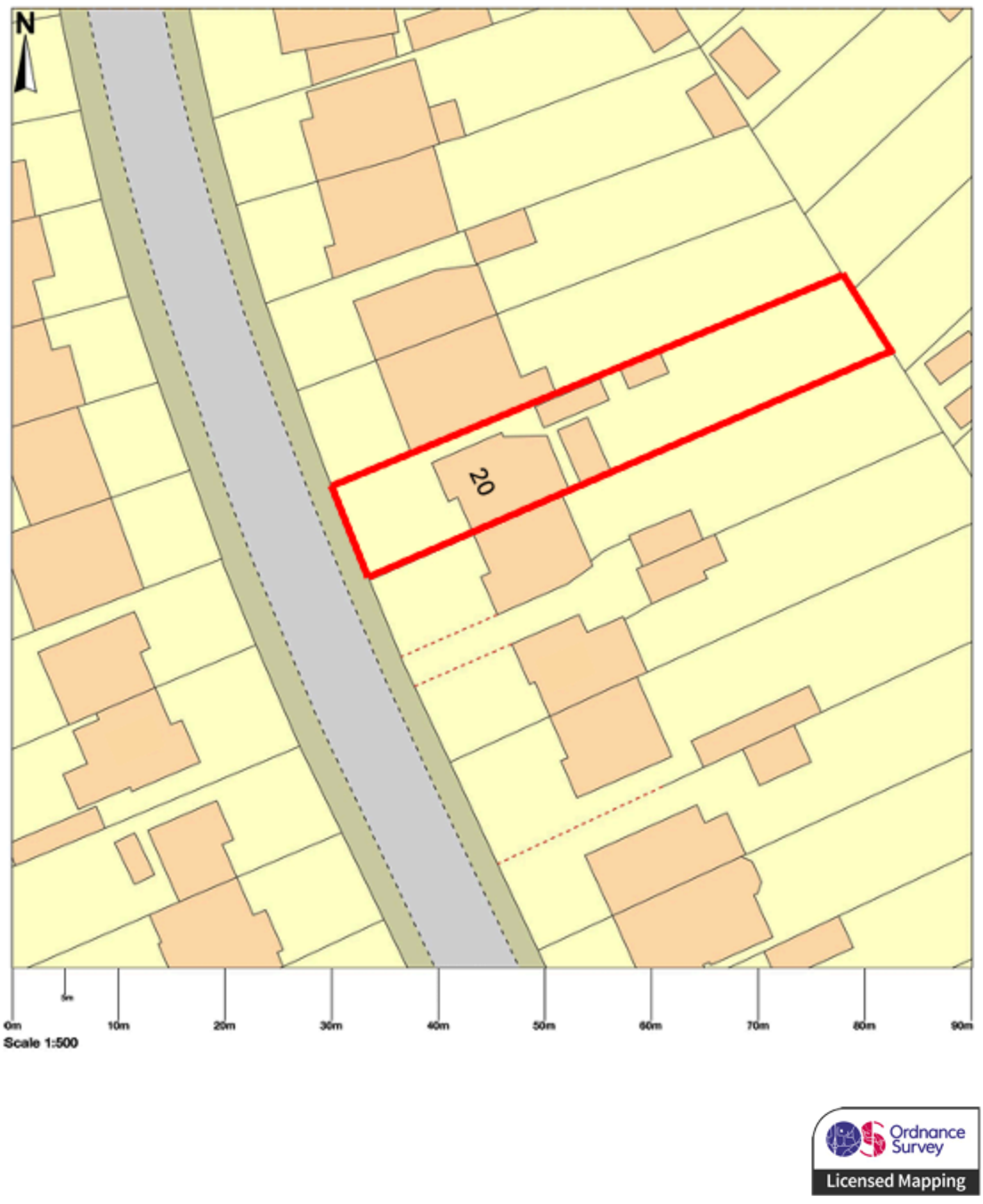


Figure 2: *Site plan highlighting the proposed development boundary at 20 Wallasey Crescent, Ickenham.*

3. Flood Risk Assessment

3.1 National Planning Policy

National policy regarding flood risk is directed by the National Planning Policy Framework (NPPF), most recently revised in December 2024 with clarification updates in February 2025. The principal objective continues to be ensuring that new development does not exacerbate flood risk, either on site or elsewhere, and that any risk that does arise is managed throughout the lifespan of the development, taking climate change into account.

According to paragraph 155 of the latest NPPF, when assessing planning applications, local planning authorities must not permit development if it would result in increased flood risk in other locations. Site-specific flood risk assessments are required for relevant applications. For developments in areas susceptible to flooding, consent should only be granted if it can be clearly demonstrated through assessment and, where necessary, application of the sequential and exception tests, that:

- The most vulnerable uses are steered towards the parts of a site with the lowest flood risk, unless significant justification exists for alternative siting;
- The development will be sufficiently flood resistant and resilient;
- Sustainable drainage solutions are incorporated unless inappropriate, with supporting evidence required if these are excluded;
- Any residual flood risk can be suitably managed for the life of the development;
- Safe access and escape routes, as part of an agreed emergency plan, are provided where this is relevant.

A site-specific flood risk assessment must be prepared for all development proposals within Flood Zones 2 and 3. Such an assessment is also necessary within Flood Zone 1 if the proposal:

- Encompasses at least 1 hectare;
- Is in an area identified by the Environment Agency as having existing or potential drainage problems;
- Sits within zones highlighted in relevant Strategic Flood Risk Assessments as likely to face increased future risk;
- Or if development introduces vulnerability to alternative sources of flooding.

The Practice Guidance on Flood Risk and Climate Change stipulates that site-specific flood risk assessments are undertaken by or on behalf of the applicant, and should quantify both the risks to and from the proposed scheme. The assessment should be submitted with the planning application when needed. It is an expectation that the assessment demonstrates how flood risks will be managed in the short and long term, with specific reference to projected climate change impacts and user vulnerability.

A robust flood risk assessment should establish:

- The extent to which the proposed development might be at risk from contemporary or future flooding, from any source;
- Whether the proposal could potentially increase flood risk off site;
- The effectiveness and suitability of mitigation measures included within the project design;
- Key evidence required to support the application of the Sequential Test, if required by the authority;
- Proof that the Exception Test has been passed for higher risk proposals.

The NPPF and accompanying guidance make it clear that the depth and detail of an assessment should be appropriate to the scale and nature of the proposal. For instance, small-scale residential extensions, which only marginally affect occupier exposure to flooding, may require only a concise review. In contrast, large or complex schemes, or those in areas where the risk is deemed considerable, will necessitate a much more detailed and technical assessment. All assessments should leverage up-to-date information, such as local Strategic Flood Risk Assessments and Environment Agency flood risk mapping.

In conclusion, it is a policy requirement that flood risk assessments are proportionate, comprehensive and firmly based on the latest available data, so that planning decisions can demonstrate robust and sustainable flood risk management in accordance with national policies.

3.2 Local Planning Policy

Local authorities, such as the London Borough of Hillingdon, assess flood risk through an up-to-date local policy framework that reflects the requirements of the National Planning Policy Framework (NPPF, revised December 2024).

In Hillingdon, the primary sources of local flood risk policy and evidence are:

- The Strategic Flood Risk Assessment (SFRA) (2020): This document provides a thorough assessment of flood risk from all sources within the borough, supporting the application of the sequential and exception tests and guiding the safe planning and design of developments.
- The Local Flood Risk Management Strategy (LFRMS) (2016): The LFRMS outlines how Hillingdon manages and reduces local flood risks, especially from surface water, groundwater, and smaller watercourses.
- The Local Plan (Part 2, adopted 2020): This contains detailed flood risk and sustainable drainage policies, requiring developments to demonstrate flood risk reduction in line with the SFRA and wider national guidelines.

Collectively, these documents ensure that planning applications are assessed using the most current evidence and policy standards, so new development can be constructed and operated safely and sustainably in accordance with local and national guidance.

3.3 Flood Risk Zones, Vulnerability and Classification

These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences. They are shown on the Environment Agency's Flood Map for Planning available on the Environment Agency's web site, as indicated in the table below.

Table 1 – *Flood Zones*

Flood Zone	**Definition**
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Table 2 – *Flood Risk Vulnerability Classification*

Essential Infrastructure
● Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk. ● Essential utility infrastructure which has to be located in a flood risk area for operational reasons, including electricity generating power stations and grid and primary substations; and water treatment works that need to remain operational in times of flood. ● Wind turbines.
Highly Vulnerable

- Police and ambulance stations; fire stations and command centres; telecommunications installations required to be operational during flooding.
- Emergency dispersal points.
- Basement dwellings.
- Caravans, mobile homes and park homes intended for permanent residential use.
- Installations requiring hazardous substances consent (Where there is a demonstrable need to locate such installations for bulk storage of materials with port or other similar facilities, or such installations with energy infrastructure or carbon capture and storage installations, that require coastal or water-side locations, or need to be located in other high flood risk areas, in these instances the facilities should be classified as 'Essential Infrastructure').

More Vulnerable

- 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 establishments, nightclubs and hotels.
- Non–residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

Less Vulnerable

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

Water Compatible Development

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

* Landfill as defined in Schedule 10 to the Environmental Permitting (England and Wales) Regulations 2010.

Table 3 - *Flood risk vulnerability and flood zone 'compatibility'*

Flood Zones	**Flood Risk Vulnerability Classification**				
	Essential Infrastructure	**Highly Vulnerable**	**More Vulnerable**	**Less Vulnerable**	**Water Compatible**
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a†	Exception Test required†	✗	Exception Test required	✓	✓
Zone 3b*	Exception Test required*	✗	✗	✗	✓*

Key:
✓ Development is appropriate
✗ Development should not be permitted.

Notes to table 3:

- This table does not show the application of the Sequential Test which should be applied first to guide development to Flood Zone 1, then Zone 2, and then Zone 3; nor does it reflect the need to avoid flood risk from sources other than rivers and the sea;
- The Sequential and Exception Tests do not need to be applied to minor developments and changes of use, except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site;
- Some developments may contain different elements of vulnerability and the highest vulnerability category should be used, unless the development is considered in its component parts.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

* In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

Minor development in context of Planning Practice Guidance

Section 17 of the Planning Practice Guidance for Flood Risk and Coastal Change states:

Minor development means:

- minor non-residential extensions: industrial/commercial/leisure etc. extensions with a footprint less than 250 square metres.
- alterations: development that does not increase the size of buildings e.g. alterations to external appearance.
- householder development: For example; sheds, garages, games rooms etc. within the curtilage of the existing dwelling, in addition to physical extensions to the existing dwelling itself. This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling e.g. subdivision of houses into flats.

Furthermore section 18 of the Planning Practice Guidance for Flood Risk and Coastal Change looks at whether minor developments are likely to raise flood risk issues? It states:

Minor developments are unlikely to raise significant flood risk issues unless:

- they would have an adverse effect on a watercourse, floodplain or its flood defences;
- they would impede access to flood defence and management facilities, or;
- where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.

The Environment Agency's advice on flood risk assessment is helpful for ensuring extensions or alterations are designed and constructed to conform to any flood protection already incorporated in the property and include flood resilience measures in the design.

The Environment Agency's advice for minor developments – household extensions is to make sure floor levels are either no lower than existing floor levels or 300 millimetres (mm) above the estimated flood level. If your floor levels aren't going to be 300mm above existing flood levels, you need to check with your local planning authority if you also need to take flood resistance and resilience measures.

4. Sources of flooding

4.1 Fluvial/Tidal

The Environment Agency's Flood Map for Planning (Rivers and Sea) provides a zoning system for flood risk from both rivers (fluvial) and the sea (tidal), illustrating the probability of flooding as well as highlighting areas currently benefiting from flood defences. It is important to note that the flood zones are defined according to the risk of flooding in the absence of such defences, in accordance with national planning guidance.

Figure 4 below displays the current extent of fluvial and tidal flood risk around the site, as indicated on the Flood Map for Planning.

The Flood Map confirms that the site lies within Flood Zone 3, which is classified as land having a high probability of flooding. This zone comprises areas where the annual probability of river flooding is greater than 1 in 100 (1%) or the chance of sea flooding is greater than 1 in 200 (0.5%).

Figure 4 – *Fluvial and tidal flood risk for the site and surrounding area, as shown on the Environment Agency Flood Map for Planning (Rivers and Sea)*

4.2 Historic Flooding

A review of flood risk evidence and strategic documents prepared by the London Borough of Hillingdon reveals no recorded incidents of historic flooding at the site.

4.3 Surface Water Flooding

Surface water (pluvial) flood risk in the area has been assessed using the Environment Agency's updated Flood Map for Surface Water (uFMfSW). Figure 5 below displays the predicted extent and depth of surface water flooding for the site and its surrounding context.

The uFMfSW indicates that the area in the vicinity of the development site is classed as being at low risk of surface water flooding. According to the map's classification, a 'low risk' area has an annual probability of flooding from surface water between 1 in 1,000 (0.1%) and 1 in 100 (1%).

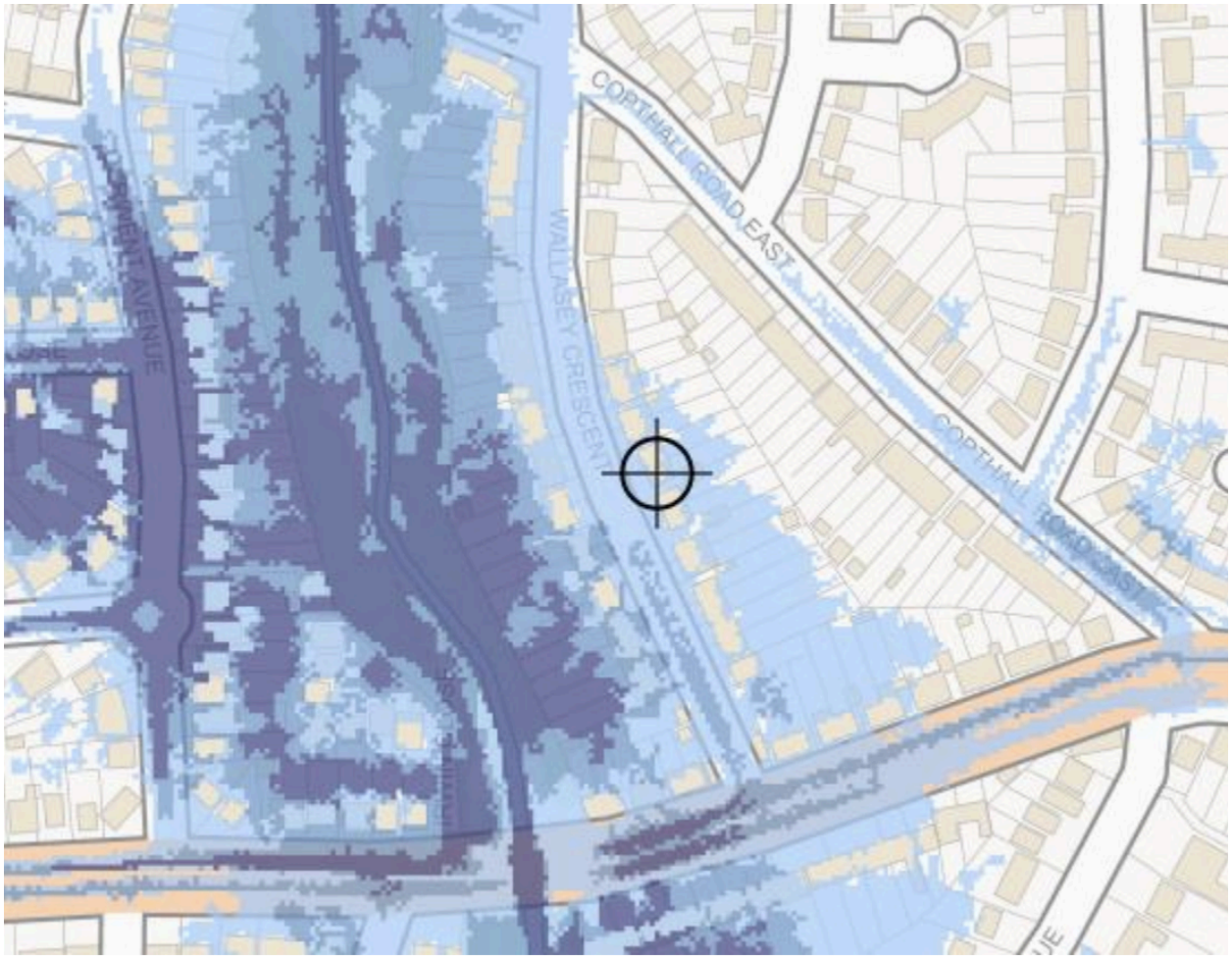


Figure 5 – *Surface water flood risk: Environment Agency Updated Flood Map for Surface Water (uFMfSW), site indicative location.*

4.4 Reservoir

The Environment Agency provides a Risk of Flooding from Reservoirs map which identifies the maximum possible extent of flooding that could occur in the unlikely event of a reservoir dam failure. The figure below illustrates the area that may be affected by

reservoir flooding in the vicinity of the development site.

Figure 6 – Predicted extent of reservoir flood risk (Environment Agency Reservoir Flood Map), site indicated.

According to the map, the development lies within the maximum flood outline from Ruislip Lido reservoir, which is managed by the London Borough of Hillingdon. While this means the site could be affected in the event of a dam failure, it is important to note that reservoir flooding remains a highly improbable event. There have been no fatalities as a result of reservoir flooding in the UK since 1925.

All large reservoirs are subject to strict safety regulations under the Reservoirs Act 1975, which requires regular inspection and supervision by qualified reservoir panel engineers. The Environment Agency acts as the enforcement authority for these safety standards in England, ensuring reservoirs are routinely inspected and all critical maintenance is undertaken.

4.5 Groundwater

Groundwater conditions at the site have been reviewed using the Environment Agency's Groundwater Vulnerability Map. As shown in Figure 7, the development is located in an area classified as having medium groundwater vulnerability.

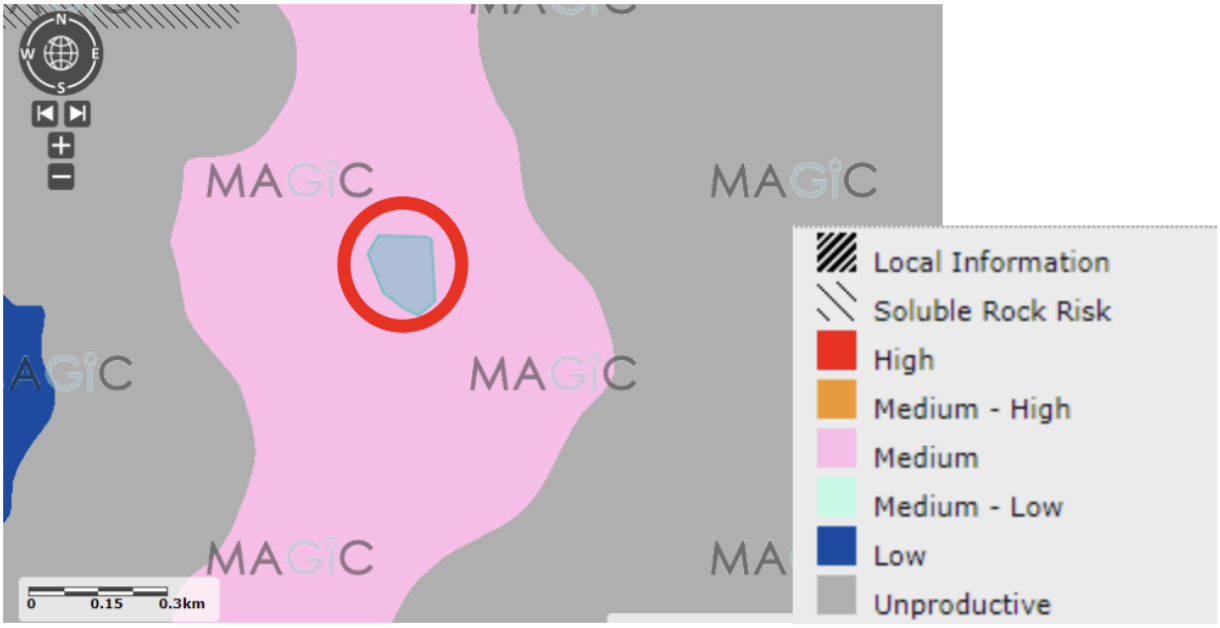


Figure 7 – Groundwater vulnerability mapping for the site (site location highlighted).

Further review of DEFRA's MAGIC Map reveals that the site is not situated within any designated Groundwater Source Protection Zone, as shown in Figure 8.

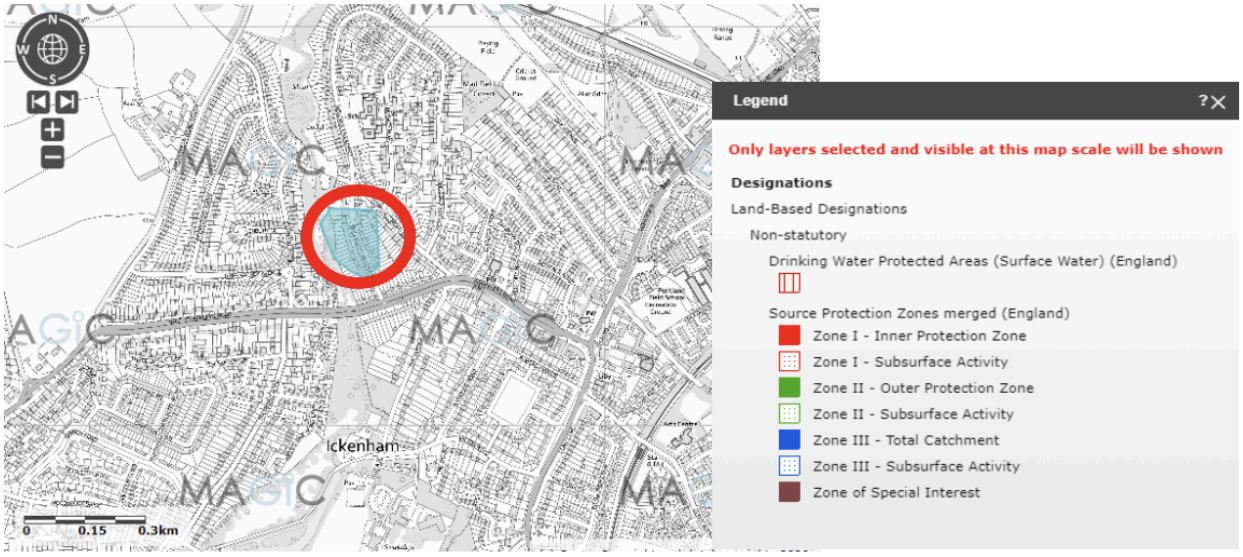


Figure 8 – *Groundwater Source Protection Zones, site highlighted.*

As the proposed development is expected to involve only limited groundworks, the risk of affecting groundwater resources is assessed to be minimal. However, it is recommended that a groundwater mitigation plan be prepared in advance, to be implemented should high groundwater levels be discovered during the construction phase.

4.6 Geology

Geological information for the site has been obtained from the British Geological Survey's online mapping resources.

Superficial deposits at the development location are classified as Alluvium, composed of clay, silt, sand, and gravel. These materials were deposited during the Quaternary Period, within the last two million years, reflecting the influence of former river environments in the area.

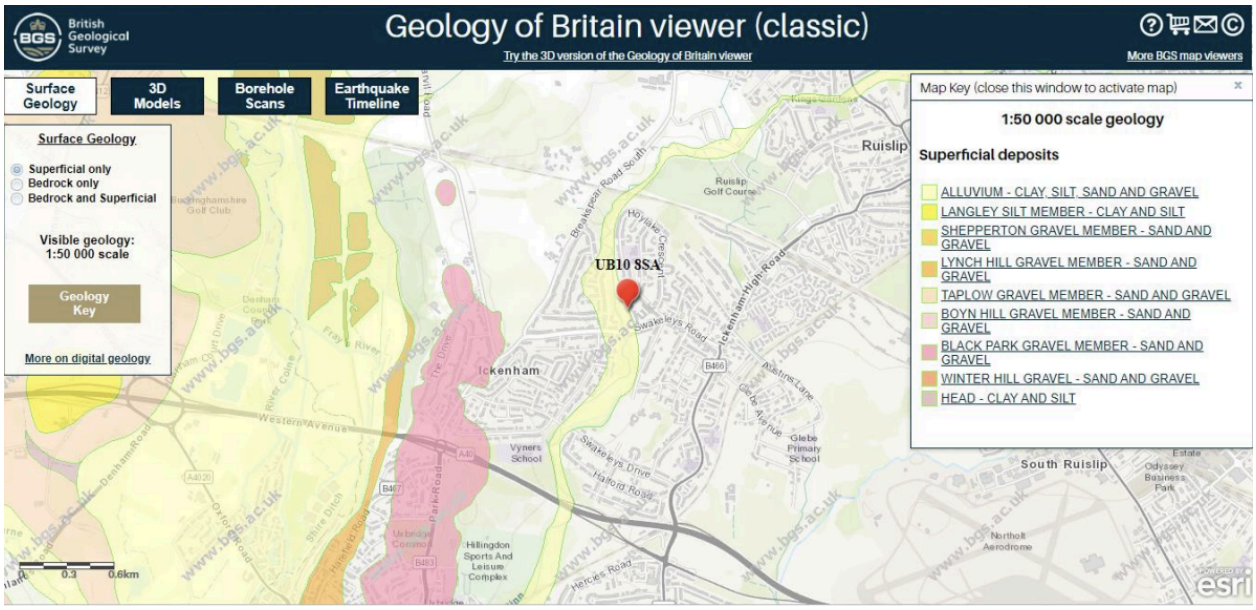


Figure 9 – *Superficial geology at the development site (source: British Geological Survey).*

The underlying bedrock at the site is identified as the Lambeth Group, consisting of clay, silt, and sand. This sedimentary bedrock dates from the Palaeogene Period (approximately 48 to 59 million years ago), a time when the landscape was characterised by swamps, estuaries, and deltaic conditions.

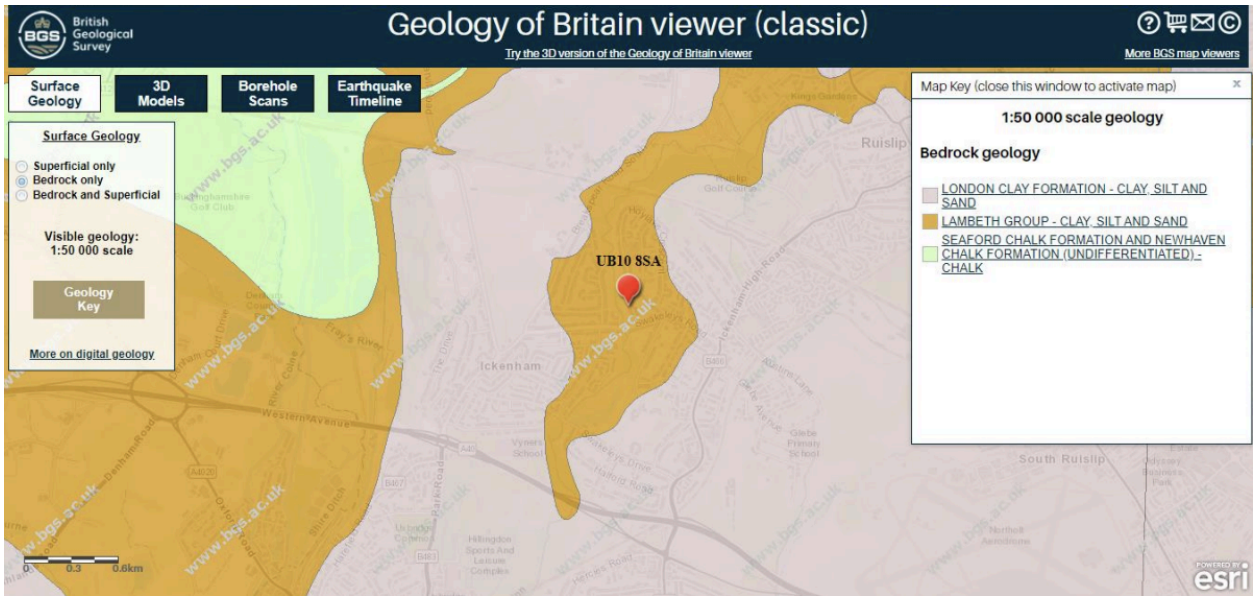


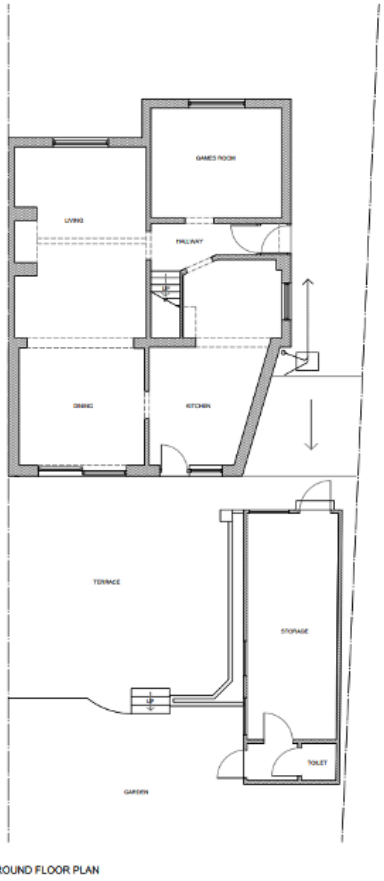
Figure 10 – *Bedrock geology beneath the development site (source: British Geological Survey).*

5. Proposed development

This Flood Risk Assessment (FRA) has been prepared in support of a planning application for a two-storey extension to the existing residence at 20 Wallasey Crescent, Ickenham, UB10 8SA.

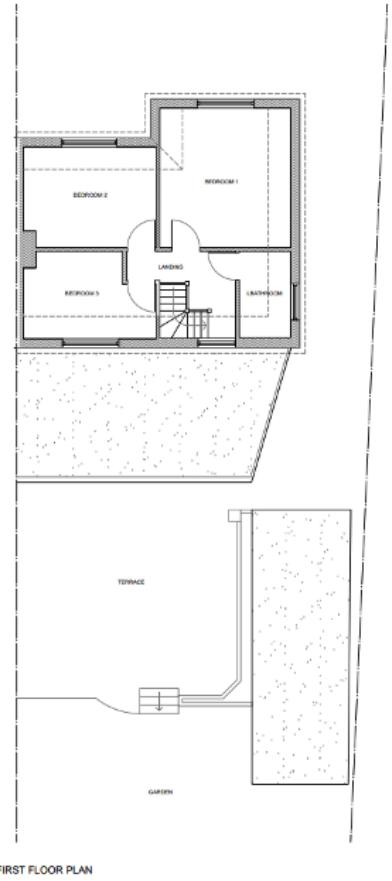
According to Table 2 of the Planning Practice Guidance, residential properties are classified as ‘More Vulnerable’ developments. The Environment Agency's Flood Map for Planning (Rivers and Sea) shows that the site is situated within Flood Zone 3, which indicates an annual flood probability of greater than 1 in 100 (1%). More Vulnerable minor developments are considered acceptable within Flood Zone 3.

Figures 11-13 show the existing floor layouts, and Figures 14-16 show the proposed layouts.



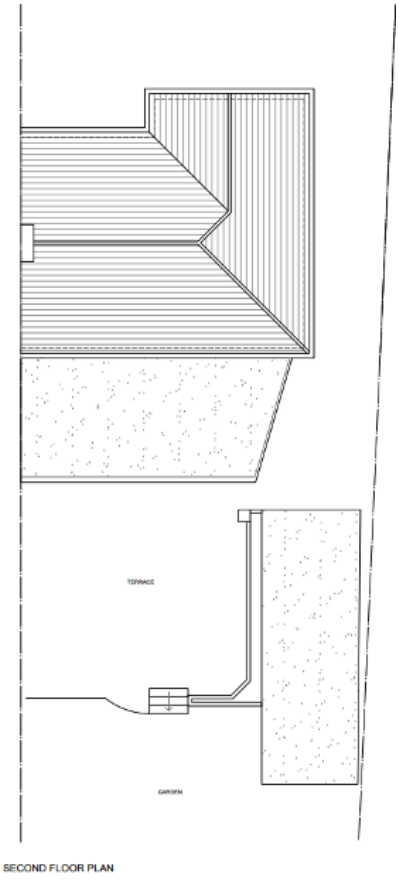
GROUND FLOOR PLAN

Figure 11
Existing ground floor plan



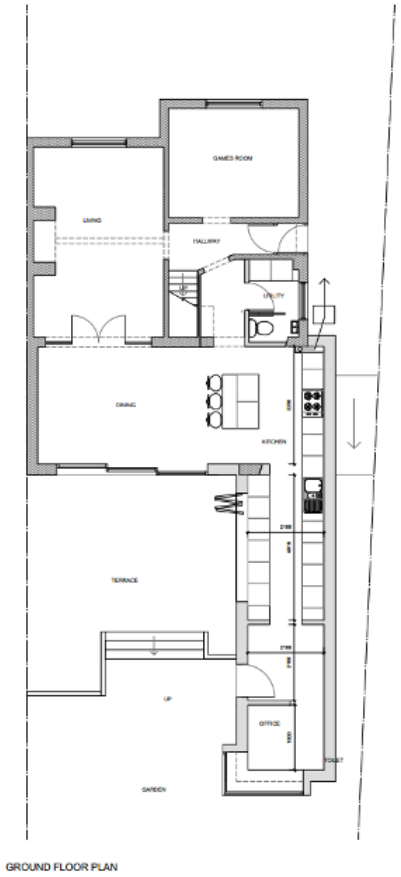
FIRST FLOOR PLAN

Figure 12
Existing first floor plan



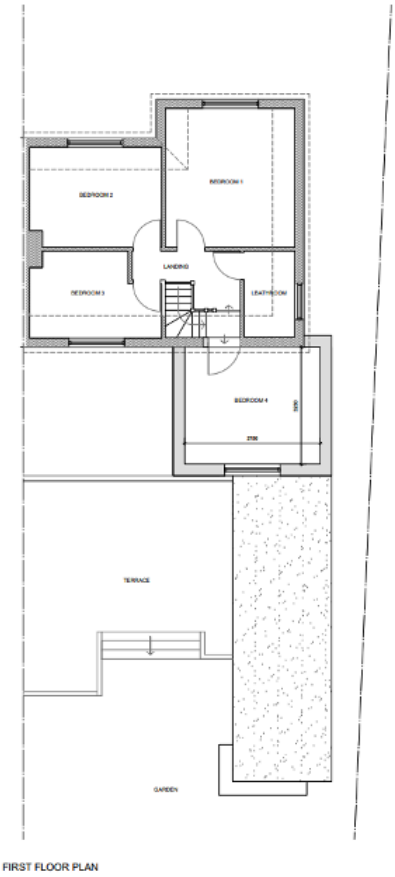
SECOND FLOOR PLAN

Figure 13
Existing second floor plan



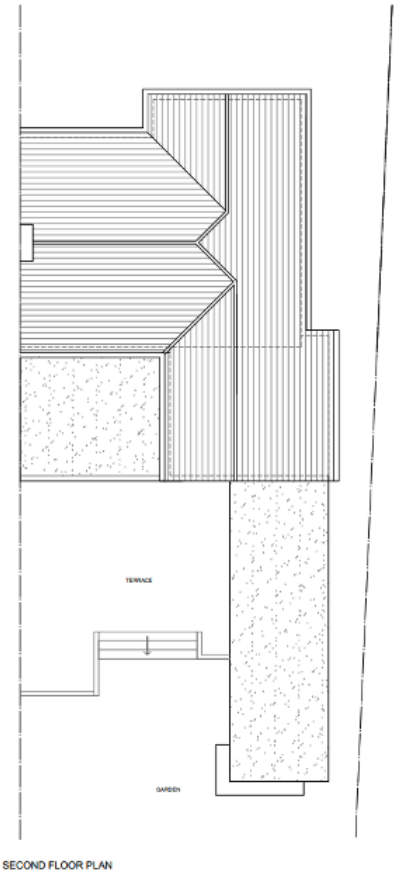
GROUND FLOOR PLAN

Figure 14
Proposed ground floor plan



FIRST FLOOR PLAN

Figure 15
Proposed first floor plan



SECOND FLOOR PLAN

Figure 16
Proposed second floor plan

6. Surface Water Drainage

The current surface water runoff rate for the site can be established using the Modified Rational Method, expressed as Q = 2.78 × Cv × Cr × Ri × A.

Cv = 0.75 – representing fully impermeable areas such as existing roads and hardstanding
Cr = 1.3 – Routing coefficient (as per CIRIA C697 recommendations)
Ri = 120 mm rainfall intensity
A = 0.025 ha, equivalent to the present impermeable area of 250 m²
Q = 2.78 × 0.75 × 1.3 × 120 × 0.025
Q = 8.13 l/s

According to Hillingdon Council's document 'Minor Development Flood Risk Assessment Requirements', run-off from minor developments, including proposed

extensions, should not be discharged directly to the public sewer network. Instead, it should be managed on site by means such as soakaways or attenuation tanks.

It is recommended that appropriate solutions are put in place to direct collected surface water, including rainwater from roofs, to water butts and/or a soakaway facility. There is sufficient garden area to support the use of a soakaway.

Based on this approach, it is anticipated that the proposed development will not result in on-site surface water flooding for events up to the 1 in 30 year and 1 in 100 year plus climate change scenarios, nor will it lead to an increased risk of surface water or sewer flooding elsewhere.

7. Hierarchy of disposing surface water

Both the Planning Practice Guidance and Part H of the Building Regulations set out that, where possible, surface runoff should be discharged as high as possible in the following hierarchy of drainage methods:

- to the ground via infiltration;
- to a surface water body;
- to a surface water sewer, highway drain, or other drainage system;
- and only as a last resort, to a combined sewer.

7.1 Infiltration

It is advised that suitable arrangements are made to channel surface water, including rainwater from roofs, to water butts and/or a soakaway. The garden area is sufficiently large to accommodate an effective soakaway system.

8. Use of SuDS

The National Planning Policy Framework (December 2024), associated Planning Practice Guidance, and relevant Ministerial Statements all prioritise the use of Sustainable Drainage Systems (SuDS) to effectively manage surface water from new developments. There is sufficient space within the curtilage of the property to accommodate SuDS features. It is therefore recommended that options such as water butts and/or soakaways are considered to minimise surface water runoff from the site.

9. Management of flood risk

9.1 Fluvial

A review of fluvial and tidal flood risk indicates that the property lies within Flood Zone 3, which is associated with an annual probability of flooding greater than 1 in 100 (1%). Table 2 of this report confirms that residential uses fall under the ‘More Vulnerable’ category; according to Environment Agency guidance, minor More Vulnerable developments may be permitted in Flood Zone 3, subject to the application of sequential testing. It is further advised that residents sign up for the Environment Agency’s Flood Warning Service, which is available locally, and prepare a flood response plan for use in the event of severe flooding. Further information on flood planning is provided in section 9.5 of this report.

9.2 Surface Water

The development site is considered to be at low risk of surface water flooding, indicating a flood probability of between 1 in 1,000 (0.1%) and 1 in 100 (1%) in any given year. In line with the Environment Agency’s standing advice for minor developments, it is recommended that finished floor levels should not be set lower than those of the existing building. Additionally, incorporating flood resistance and resilience measures at the design stage is advised, with further details provided in section 9.3 of this report. Hillingdon Council’s guidance document, 'Minor Development Flood Risk Assessment Requirements,' specifies that surface water from minor developments, such as new extensions, should not be discharged directly into the sewer system, but must instead be managed on site via features like soakaways or tanks. Therefore, it is recommended that effective systems are put in place to manage surface water runoff, including roof water, by directing it to water butts and/or a designated soakaway area. The available garden space is sufficient to accommodate an appropriate soakaway solution.

9.3 Flood Resistance and Resilience Measures

It is proposed the development incorporates flood resilience and resistance measures. This would ensure that any extreme flooding and flooding in exceedance events could be mitigated against. Such measures include:

- External walls rendered resistant to flooding to higher level;
- External ventilation outlets, utility points and air bricks fitted with removable waterproof covers;
- Non-return valves fitted to all drain and sewer outlets;

- Manhole covers secured;
- Anti-siphon fitted to all toilets;
- Kitchen units of solid, water resistant material;
- Use of MDF carpentry (i.e. skirting, architrave, built-in storage) avoided at ground floor level.

9.4 Safe access and egress

Residents are advised to register for the Environment Agency's Flood Warning Service, which is available in this area. This service is intended to provide a minimum of two hours' advance warning of potential flooding, giving sufficient time to put safety procedures in place.

In the event that evacuation is required, a suitable emergency escape route is available: head south onto Wallasey Crescent, then at the end of the road turn east onto Swakeleys Road and continue for approximately 50 metres to reach an area within Flood Zone 1.

9.5 Flood plan

As the development is located within Flood Zone 3, it would be sensible to establish and implement a flood warning and evacuation plan following completion of the development. This plan should include residents registering with the Environment Agency's flood warning service.

The flood warning service provides three levels of warning to help you prepare for flooding and respond appropriately.

Flood Warning		What is means?	When it's used?	What to do?
Flood Alert		Flooding is possible. Be prepared.	Two hours to two days in advance of flooding.	Be prepared to act on your flood plan. Prepare a flood kit of essential items. Monitor local water levels and the flood forecast on our website.
Flood Warning		Flooding is expected. Immediate action required.	Half an hour to one day in advance of flooding.	Move family, pets and valuables to a safe place. Turn off gas, electricity and water supplies if safe to do so. Put flood protection equipment in place.

Severe Flood Warning		Severe flooding. Danger to life.	When flooding poses a significant threat to life.	Stay in a safe place with a means of escape. Be ready should you need to evacuate from your home. Co-operate with the emergency services. Call 999 if you are in immediate danger.

Recommended Flood Plan:

Before a flood

- Find out if you are at risk of flooding;
- Find out if you can receive flood warnings;
- Prepare and keep a list of all your contacts to hand or save them on your mobile phone/tablet;
- Think about what items you can move now and what you would want to move to safety during a flood such as pets, cars, furniture and electrical equipment;
- Know how to turn off gas, electricity and water supplies;
- Prepare a flood kit of essential items and keep it handy. It can include copies of important documents, a torch, a battery-powered or wind-up radio, blankets and warm clothing, waterproofs, rubber gloves and a first aid kit including all essential medication.

On receipt of a flood warning

- Tune into your local radio station on a battery or wind-up radio;
- Fill jugs and saucepans with water;
- Grab your already prepared flood kit;
- Collect blankets, torch, first aid kit, medication and food;
- Move important documents, personal items, valuables and lightweight belongings upstairs or to high shelves;
- Raise large items of furniture, or put him in large bags if you have them;
- Move people, outdoor belongings, cars and pets to higher ground;
- Switch off water, gas and electricity at mains when water is about to enter your home. Do not touch sources of electricity when in standing water;
- Fit flood protection products, if you have them, for example flood boards, air brick covers and sandbags;
- If you do not have non-return valves fitted, plug water inlet pipes with towels or cloths; Know your means of escape;
- Listen to the advice of the emergency service and evacuate if told to do so;
- Avoid walking or driving through flood water. 300mm of fast flowing water can knock over an adult and two feet of water can move a car.

After a flood

- If you have flooded, contact your insurance company as soon as possible;
- Take photographs and videos of your damaged property as a record for your insurance company;
- If you don't have insurance, contact your local authority for information on grants and charities that may help you;
- Flood water can contain sewage, chemicals and animal waste. Always wear waterproof outerwear, including gloves, wellington boots and a face mask;

- Have your electrics, central heating and water checked by qualified engineers before switching them back on.

10. Conclusions

The assessment of flood risk from fluvial and tidal sources shows that 20 Wallasey is located within Flood Zone 3, and as such has a flood risk associated with events of greater than a 1 in 100 (1%) annual probability. As outlined in Table 2 of this report, residential properties are classified as ‘More Vulnerable’; the Environment Agency’s guidance for minor developments confirms that ‘More Vulnerable’ minor developments in Flood Zone 3 can be permitted, subject to the application of the sequential test.

The property is considered to be at low risk of surface water flooding, with an estimated risk between 1 in 1,000 (0.1%) and 1 in 100 (1%) in any year. In accordance with the Environment Agency’s standing advice for minor developments, it is recommended that finished floor levels are not set below those of the existing building. It is also advisable to consider flood resistance and resilience measures as part of the design process; further information on these measures is provided in section 9.3 of this report.

Hillingdon Council’s guidance for minor development flood risk assessment requires that surface water from minor development, such as new extensions, should not connect directly to the public sewer network, but should instead be managed on site through features such as soakaways or attenuation tanks. It is therefore recommended that appropriate solutions are put in place to manage surface water, including roof water, and direct it to a water butt and/or a soakaway. The existing garden provides sufficient space for an adequate soakaway facility.

There is no evidence of historic flooding at the development site. The site falls within an area that could be affected in the unlikely event of a reservoir failure, according to Environment Agency mapping. Should evacuation become necessary, a suitable emergency egress route is available: residents should proceed south onto Wallasey Crescent, then east onto Swakeleys Road, continuing for approximately 50 metres to reach Flood Zone 1.

It is further recommended that residents register for the Environment Agency’s Flood Warning Service, which is available locally, and prepare a flood plan for implementation during any extreme flood events. Further information regarding flood planning is included in section 9.5 of this report.

Based on the available evidence concerning flood risk, it is considered that the proposed development can be safely accommodated in flood risk terms, will not increase flood risk elsewhere, and therefore represents appropriate development in accordance with the National Planning Policy Framework (NPPF).

11. Disclaimer

The authors expressly disclaim responsibility for any error or omission in this assessment arising from or in connection with any incorrect assumptions. Opinions, conclusions, and any recommendations contained in this report are based on the information and circumstances evaluated at the time of preparation. Responsibility is also disclaimed for any error or omission arising from those opinions, conclusions, or recommendations. No liability is accepted for the use of this report or its contents by any third party.