

FLOOD RISK ASSESSMENT

PROPOSED BUILDING ALTERATIONS

8 BRUNSWICK ROAD

WITHINGTON, M20 4GA

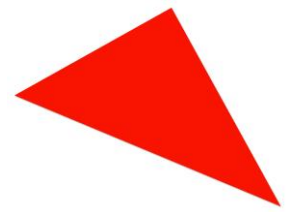
For

MANCHESTER RENT A HOME

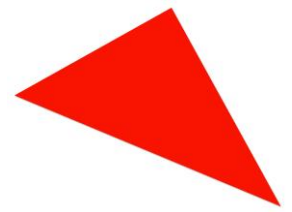


APRIL 2021
21-B-12974.100

Carley Daines And Partners Limited
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EXECUTIVE SUMMARY	
Site Parameters	Site Area – 300m ² Present Impermeable Area - existing hardstanding – 150m ² Post Development Impermeable Area (est 50%) – 150m ² INCREASE in Impermeable Area – ZERO NGR – 385243 (E) ; 393186 (N) Nearest Post Code – M20 4GA.
Flooding	This report has considered flooding from a variety of sources in accordance with NPPF guidelines, and it is believed that the site is not at risk of flooding, nor does the proposed development create a risk of flooding elsewhere. The overall risk has been assessed as MEDIUM – CONTROLLED TO LOW.



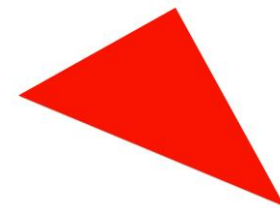
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1.0 INTRODUCTION

- 1.1 Carley Daines and Partners Limited have been commissioned Manchester Rent A Home to undertake a Flood Risk Assessment (FRA) and Drainage Strategy for this site in accordance with the requirements of National Planning Policy Guidelines (NPPG), published in 2016 and as since updated.

2.0 EXISTING SITE DETAILS

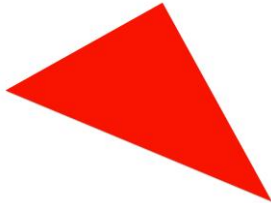
- 2.1 The site is located at number 8 Brunswick Road, Withington, Manchester. The overall site has an approximate area of 300m² (0.03ha). It is located at NGR 385243 (E) ; 393186 (N) and the nearest post code is M20 4GA. The mean site elevation is approximately 41m AOD.
- 2.2 The existing site is currently an existing semi-detached property, being used as 4 separate apartments, with a front and rear garden, and vehicle parking to the front of the property. It is accessed directly from Brunswick Road.
- 2.3 There are no rivers or major streams in the immediate vicinity of the site. The nearest major surface water feature, the river Mersey, feature is approximate 2 miles from the site, whilst there are a number of smaller small surface water brooks in the local area, the nearest being approx. 300m away.
- 2.4 The Lead Local Flood Authority (LLFA) is Manchester City Council.

3.0 PROPOSED DEVELOPMENT

- 3.1 Proposals have been made available to us by the schemes architect. The proposal consists of a new meter housing to the side of the property, and basement lightwells to the front and side of the premises.
- 3.2 The existing basement has been recently refurbished, and will be used as 'usable rooms' to a private apartment. The light wells are proposed to provide a better standard of light to aid both aesthetics and liveability/ quality of living for the dwelling, and also to act against damp. The proposed lightwells will be fitted with drainage channels connecting to the surface water system and also a pumped system which is to be used where required, to ensure adequate drainage is always provided.
- 3.3 Any residential development of this type is classified in Table 2 of the NPPG below, as within the "More Vulnerable" category in consideration of flood risk. The site and the location of the actual proposed works is in Flood Zone 2 (FZ2) – an area with medium risk of flooding (see appendix D), however it is noted that there is a small area the south east corner of the site shown as is a Flood Zone 3, although no works are proposed in this area.

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 stations, ambulance stations and fire stations and command centres and telecommunications installations required to be operational during flooding. • Emergency dispersal points. • Basement dwellings. • Caravans, mobile homes and park homes intended for permanent residential use³.



Installations requiring hazardous substances consent⁴. Where there is a demonstratable 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”⁵.
More Vulnerable - Hospitals - Residential institutions such as residential care homes, children’s homes, social services homes, prison 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 waste⁶. - Sites used for holiday or short-let caravans and camping, <i>subject to a specific warning and evacuation plan</i>.
Less Vulnerable - Police, ambulance and fire stations which are <i>not</i> 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 (except landfill and hazardous waste facilities). - Minerals working and processing (except for sand and gravel working). - Water treatment works which do <i>not</i> 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.)

³ For any proposal involving a change of use of land to a caravan, camping or chalet site, or to a mobile home site or park home site, the Sequential and Exception Tests should be applied.

⁴ See Circular 04/00: *Planning controls for hazardous substances* (paragraph 18) at: www.communities.gov.uk/publications/planningandbuilding/circular/planningcontrols

⁵ In considering any development proposal for such an installation, local planning authorities should have regard to planning policy on pollution in the National Planning Policy Framework.

⁶ For definition, see *Planning for Sustainable Waste Management: Companion Guide to Planning Policy Statement 10* at www.communities.gov.uk/publications/planningandbuilding/planningsustainable
See footnote 3.

Water-compatible development

- Flood control infrastructure.
- Water 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*.

Notes to Table 2:

- This classification is based partly on Department for Environment, Food and Rural Affairs and Environment Agency research on *Flood Risks to People (FD2321/TR2)* and also on the need of some uses to keep functioning during flooding.
- Buildings that combine a mixture of uses should be placed in to the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.
- The impact of a flood on the particularly uses identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and other risk mitigation measures needed to ensure the development is safe may differ between uses within a particular vulnerability classification.

- 3.4 Table 3 of the NPPG states that “more vulnerable” development is considered appropriate within FZ2. Therefore, the development passes the flood risk Sequential Test and the Exception Test does not need to be applied.

Table 3: Flood Risk Vulnerability and Flood Zone "Compatibility"

Flood risk vulnerability classification (see Table 2)		Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Zone (see table 1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b functional floodplain	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 guides development to Flood Zone 1 first, then Zone 2, and then Zone 3;
- Flood risk assessment requirements; or
- the policy aims for each flood zone.

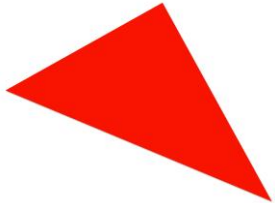
4.0 EFFECTS OF CLIMATE CHANGE

- 4.1 Reference is made to the Environment Agency document: Flood Risk Assessments: Climate Change Allowances dated February 2016 and updated in March 2020.

Table 2: Peak rainfall intensity allowance in small and urban catchments (use 1961 to 1990 baseline)

Applies across all England	Total potential change anticipated for 2015 - 2039	Total potential change anticipated for 2040 - 2069	Total potential change anticipated for 2070 - 2115
Upper end	10%	20%	40%
Central	5%	10%	20%

The site is unaffected by changes in sea levels.



5.0 PROBABILITY OF FLOODING

5.1 It is a requirement of the NPPG that flooding from all possible sources should be assessed. Accordingly, consideration must be given to the possibility of flooding from the following sources:

- rivers and watercourses
- sewers
- sea
- overland flows
- ground water
- reservoirs, canals and artificial sources

Consideration must also be given to the possibility of transferring flooding to other locations off site. In consideration of the above possible flood sources, the assessed risks are as follows:

5.2 Flooding from Rivers/Watercourses

The nearest river to the site, the river Mersey, is approximately 2 miles away to the south. The river at this location is at approximately 35m AOD, whilst the site lies at an elevation of 41m AOD. Therefore the site sits at a higher level to the rivers bank at its' nearest point, and the distance away is significant. Accordingly, the risk of flooding from the river and or local watercourses can be assessed as VERY LOW.

5.3 Flooding from the Sea

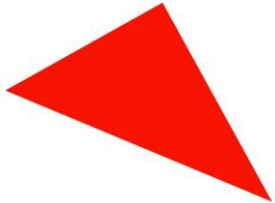
The site is at an elevation of 41m AOD and at least 50km from the nearest coastline, on Merseyside. The risk of flooding from the sea is therefore assessed as ZERO.

5.4 Flooding from Land

The site is located in flood zone 2, an area with a medium risk of flooding, with intermittent areas of flood zone 3 (high risk) locally . These flood zone areas are in-land, a significant distance from the nearest major surface water river or watercourse, and are in a built up urban district. Therefore it would be assessed that the reason these flood zones 2 and 3 exist in this area is due to flooding from land and from ground water. The sites lies at 41m AOD, whilst the northern end of Brunswick Road lies at 42m AOD, and the southern end 40m AOD respectively. Additionally Burlington Road to the north, the road which Brunswick Road runs perpendicular to, has similar falls from east to west. Therefore it can be seen that the land naturally falls from north west to south east in the local area, with the site being central to this. Mitigating measures to this risk of flooding would be to install suitable channel drainage bordering any entrance to the property, with a proposed step up of at least 150m. Additionally, any falls on the property such as gardens and driveways should fall away from the entrances – as this is an existing building it can be confirmed this is the case. Flooding from land is therefore assessed as MEDIUM.

5.5 Flooding from Ground Water

The possibility of flooding from groundwater has been considered. Similar to the above assessment of flooding from land, the site lies in a flood zone 2 and the natural topography in the local area falls towards and beyond the site. As the site is existing, mitigating measures from the original build such as siting the front entrance above the existing ground level were undertaken. A basement is



present in the building, however has no record of flooding due to mitigating measures in the form of specialist tanking and waterproofing. The most recent proposals include adding light wells to the front and side of the property to benefit the basement. The proposals for the light wells include suitable channel drainage, upstands on both the upper and lower ledges, and include a pumped system to prevent any risk of water ingress. This risk is assessed as MEDIUM - CONTROLLED.

5.6 Flooding from Sewers

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged or of inadequate capacity. Flooding is most likely to occur to combined sewers. The sewer information in the area shows sewers to be of substantial size and it is understood that there is no record of sewer flooding in the area. It can therefore be concluded that the risk of sewer flooding is VERY LOW.

5.7 Flooding from Reservoirs, Canals and Artificial Sources

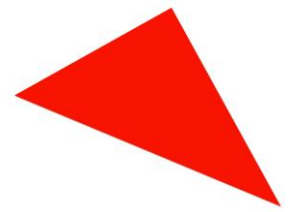
There are no reservoirs, canals or artificial sources of water within 10km of the site. Hence the risk is assessed as ZERO.

5.8 Flooding Elsewhere

This flood risk assessment also requires consideration to be given to the possibility of flooding being caused elsewhere. A properly designed and maintained site drainage system will meet the requirements of the sewerage provider, in that the pipelines will not flood at the critical 30-year rainfall event. Furthermore, NPPG guidelines require that all exceedance flows either infiltrate into the ground or are safely contained on site within underground or above ground safe storage areas such that there will be no risk of flooding of vulnerable or critical areas on site or other nearby areas. Despite the above stated however, this site as a whole is existing and has no record of such flooding, and it is deemed the property has a suitable existing drainage strategy in place and the proposals do not propose any increase in impermeable area on site nor would any surface water be displaced. The risk, therefore, of transferring flooding elsewhere is VERY LOW.

6.0 MITIGATION MEASURES

In view of the site being located in FZ2 and the medium risk of causing flooding elsewhere off site (see above) there are no further major mitigating measures proposed to the existing property. The mitigating measures proposed for the latest proposal of new light bays to the front and side of the property and a new meter unit to the side of the property would come in the form of suitably sized drainage channels to be installed in the light bays, connecting to the existing piped drainage system. Suitably designed weather checks/ lips should be constructed on both the upper and lower ledges to prevent water ingress. In addition to the above, a pumped system is proposed into the lower level of the light well to ensure in the event of failure of the drainage channels, any water would be pumped away to prevent risk to the basement windows. The rooms to which the light wells are proposed are 'useable rooms' e.g living rooms or kitchens and are not to be bedrooms. The proposed mitigation measures are deemed suitable to the nature of the proposals and would as such not pose any increase to the existing risk of flooding of the property.



7.0 FLOOD RISK MANAGEMENT MEASURES

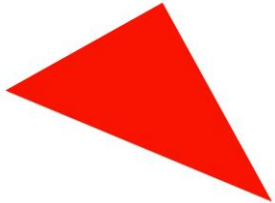
- 7.1 In the event of extreme emergency, the local authority and other emergency services have contingency plans for dealing with consequences of flooding.
- 7.2 The existing finished floor level of the building is at least 150mm above surrounding external ground, with specialist tanking to basements, and the surrounding areas are sloped so to direct surface water away from the buildings, which will avoid the risk of damage to buildings and contents from overland flood flows around the site.
- 7.3 The existing site drainage system is deemed suitable, and there are no increases in proposed hard standing areas which would act as additional catchments to surface water.
- 7.4 Home owners and landlords will be responsible for the maintenance of private drainage systems on site to ensure satisfactory performance. United Utilities will be responsible for the maintenance of any public sewers on the site.
- 7.5 Any flood flows onto the site from adjoining properties will either be retained on site safely or be encouraged to pass across the site such that there is no increased risk of flooding to buildings and other vulnerable areas.

8.0 OFF-SITE IMPACTS

- 8.1 Proposed alterations to the property will be designed and constructed in accordance with Part H of The Building Regulations, Sewers for Adoption, and any additional requirements of United Utilities, the LLFA, and the Environment Agency, as appropriate.
- 8.2 All on-site roofs and paving areas currently drain into the existing surface water drainage system – the proposed building amendments will not increase the total hardstanding areas, thus no additional capacity will be added to the existing drainage system - thereby ensuring there will be no off-site flood flows generated by the development.

9.0 RESIDUAL RISKS

- 9.1 This Flood Risk Assessment, prepared in accordance with NPPG and EA Guidelines, demonstrates that the risk of on-site flooding from all sources resulting from the proposed development can generally be regarded as being low to medium. In light of the development being sited in a flood zone 2, local to some areas of flood zone 3.
The existing property has been originally designed incorporating sufficient mitigating measures to prevent flooding to the property, and the proposed amendments to the property to not create any further risk of flooding, therefore the mitigated risk of flooding can be assessed as CONTROLLED.
- 9.2 Furthermore, it is believed that the risk of transferring flooding elsewhere is negligible and any proposed amendments would not increase this risk to greater than that which currently exists.
- 9.3 Accordingly, and notwithstanding any other planning issues, it is not considered that the proposed development has any adverse effects on the current site, or the surrounding area in respect of flooding. Providing the advice contained within the Flood Risk Assessment is implemented, there are no adverse residual risks to either the development or the surrounding area.



10.0 CONCLUSIONS

The site is located in FZ2 on the EA Flood Map – an area considered to have a medium probability of fluvial flooding. Risks of flooding have been explored, and the effects of the proposed amendments to the site. In this instance this site is an existing building, with the proposed amendments of adding a light well to the existing basement, and a meter housing unit to the side of the property. The proposed amendments will not increase the amount of surface area on the site, nor will the increase the risk of flooding to the property. The risks of the proposals have been assessed in this report, and suitable mitigation measures suggested which would alleviate any risks. Therefore this report can conclude that the risk of flooding has been assessed as LOW and CONTROLLED.

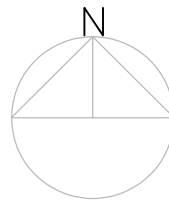
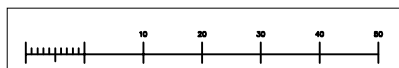
SIGNED (electronically)

A Mulligan

**A Mulligan BEng
CARLEY DAINES AND PARTNERS LIMITED**



Site Boundary



Simon R Miles
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Didsbury
Manchester
T: 07778 137830
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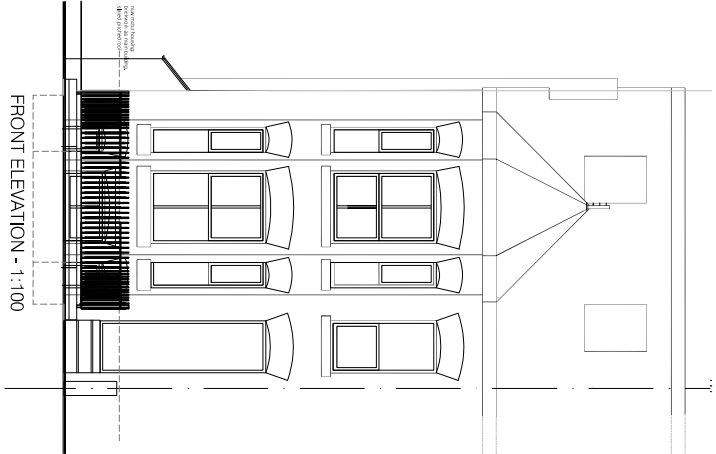
Do not scale. Contractors must check all dimensions on site before preparing production drawings or commencing any work. This drawing and its design is the copyright of S.R.Miles Ltd and may not be reproduced in any form whatsoever without their prior express written consent.

Project :
8 Brunswick Road Withington
Title :
OS location plan
Drawing number : 21 267 PL000
Issue :
Client :
Mr P Keaveney

Scale :
1:1250 @ A4
Date :
23.03.2021
CAD Ref :
21 267
Drawn by :
SRM

SRM

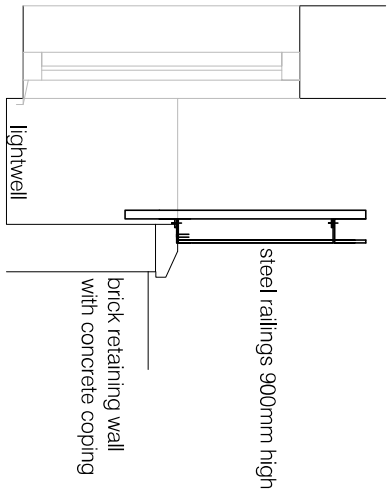
Simon R Miles BA Hons Dip Arch RIBA
Chartered Architect



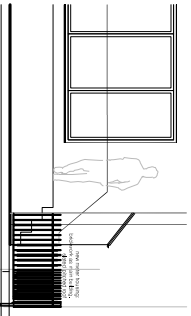
FRONT ELEVATION - 1:100



SIDE ELEVATION - 1:100



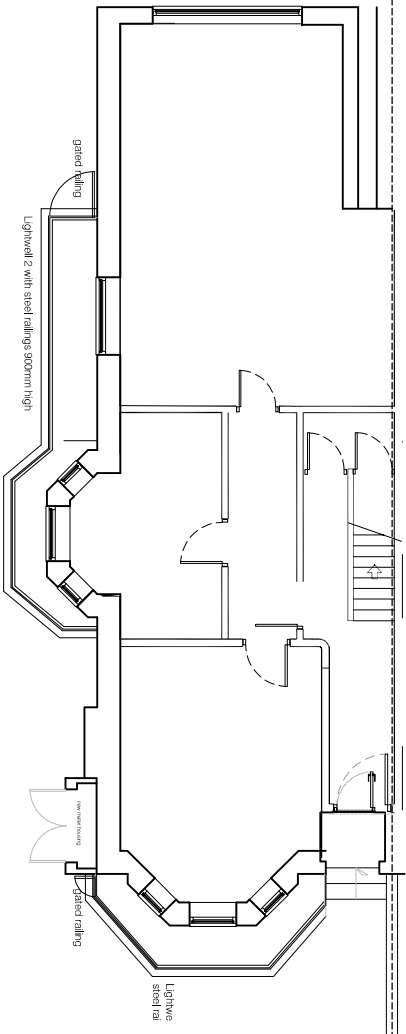
SECTION THRO LIGHTWELL - 1:25



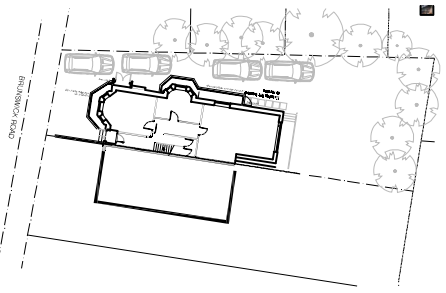
REAR ELEVATION



proposed railing style



SITE PLAN - 1:100



BLOCK PLAN 1:500

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March 2021
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Revision	Date	Revision note	Notes



Project: 8 Burnswick Road Winton
Title: Lightwell and meter housing details
Drawing number: 21/267 FL100
Date: 21/267
Client: P Keaveney

Author: AS NOTED@AK
Date: 25.03.2021
Check: 21/267
Drawn: SRM



Flood map for planning

Your reference
12974Brunwick

Location (easting/northing)
385246/393178

Created
28 Apr 2021 19:32

Your selected location is in flood zone 2, an area with a medium probability of flooding.

This means:

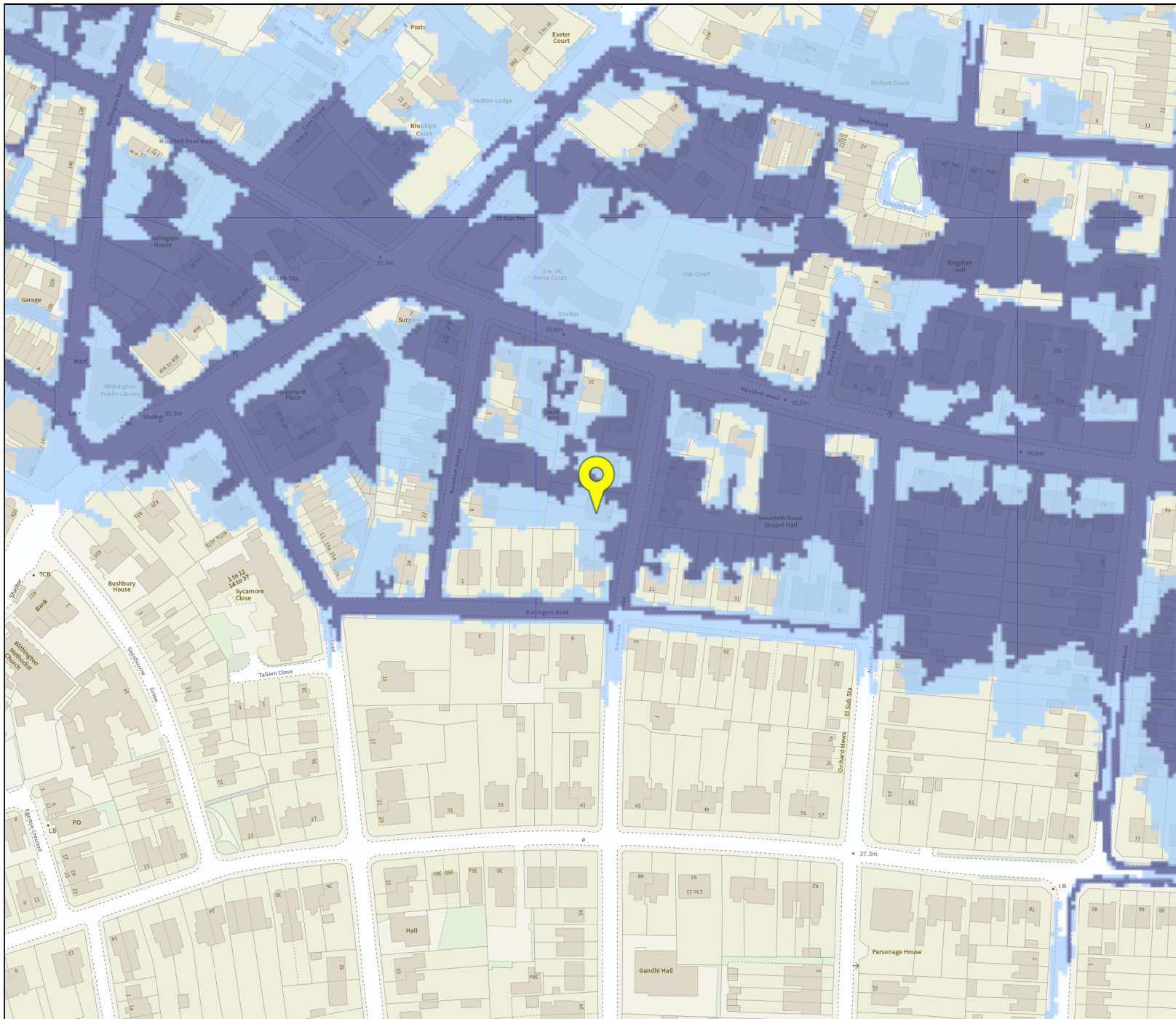
- you must complete a flood risk assessment for development in this area
- you should follow the Environment Agency's standing advice for carrying out a flood risk assessment (see www.gov.uk/guidance/flood-risk-assessment-standing-advice)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

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<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>



Flood map for planning

Your reference
12974Brunwick

Location (easting/northing)
385246/393178

Scale
1:2500

Created
28 Apr 2021 19:32

-  Selected point
-  Flood zone 3
-  Flood zone 3: areas benefiting from flood defences
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Flood storage area


0 20 40 60m