FLOOD RISK ASSESSMENT

Site address

3 Ashfield Close
Petersham
TW10 7AF

Date
15 August 2021

Prepared by
PWA Ltd

Contents

Flood map for planning

Your reference	Location (easting/northing)	Created
3 ASHFIELD CL	**518139/173083**	**14 Aug 2020 15:14**

Your selected location is in flood zone 1, an area with a low probability of flooding.

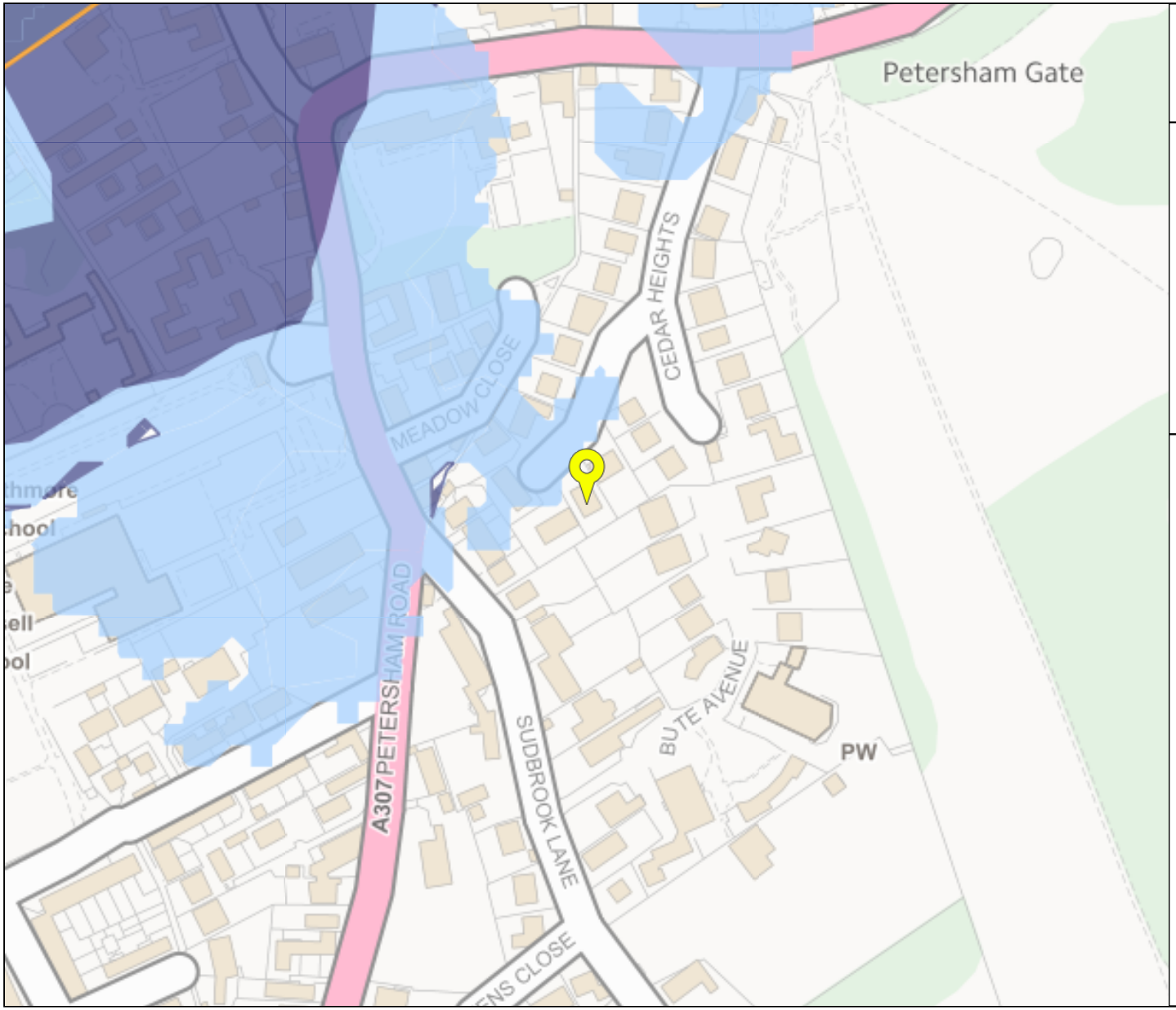
This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

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.



Environment Agency

Flood map for planning

Your reference
3 ASHFIELD CL

Location (easting/northing)
518139/173083

Scale
1:2500

Created
14 Aug 2020 15:14

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

0 20 40 60m

Page 2 of 2

2. OS SITE PLAN

Produced 18 Jun 2020 from the Ordnance Survey MasterMap (Topography) Database and incorporating surveyed revision available at this date.

The representation of a road, track or path is no evidence of a right of way. The representation of features as lines is no evidence of a property boundary.

Metres
0 10 20 30 40 50

1:1250

N

3, Ashfield Cl, Richmond
TW10 7AF

Supplied by: **Stanfords 18 Jun 2020**
Licence: © Crown Copyright and database rights 2020 OS100035409
Order Licence Reference: Ol1402997
Centre coordinates: 518139 173084

Version 1.0 Unversioned directory PDF

3. EXECUTIVE SUMMARY

3.1 Site details

Location	3 Ashfield Close, Petersham, TW10 7AF
Proposed development	Proposed two storey side and front extension to existing dwelling. Rear single storey side extension. Removal of existing two storey rear extension.
Flood Zone	Flood Zone 1.
Sequential and Exception Tests	Development is non-minor and and a Sequential Test should not be required. An Exception Test should not be required.

3.2 Flood Risk

Records of Historic Flooding	There are no recorded flooding for this site.
Fluvial (River) and Tidal (Sea) Flood risk	Low There have been no recorded flooding incidents associated with the River Thames and the site does not benefit from specific flood defences.
Pluvial (Surface Water) Flood Risk	Very low.
Flood Risk from Artifical (Canals and Resevoirs) Sources	Very low.
Groundwater Flood Risk	Low - Although the site is potentially susceptible to groundwater flooding no recorded incidents have been found. The site is within a CDA.
Development Impacts on Local Flood Risk	The development will minimally decrease the site's impermeable area. As such it is unlikely it that this will decrease surface water runoff-rates.

3.3 Flood Risk Mitigation Measures

Proposed	1. Construction should utilise flood resistant materials and utility services should be placed as high as practicable to reduce the impact of any flooding in the future. 2. Occupants will sign up for a EA Emergency Flood Warning Direct Service.
Surface Water Management (SuDS)	SuDS should be reviewed with LLFA to improve surface water run-off rates. Marginal increase in impermeable area.
Conclusion	The site will remain dry during all fluvial, tidal and surface water modelled events. With the proposed mitigation measures in place, the proposal will remain safe for it's lifetime and it is unlikely to have a significant impact upon local flood risk.

4. DEVELOPMENT PROPOSAL

4.1 The purpose of this report is to establish the flood risk to the site from all potential sources and, where possible, to propose suitable mitigation methods to reduce any risks to an acceptable level. It aims to make an assessment of whether the development will be safe for it's lifetime, taking into account climate change and the vulnerability of it's users, without increasing flood risk elsewhere.

4.2 The Environment Agency's standing advice lays out the process that must be followed when carrying out Flood Risk Assessments for developments:
- In flood zone 2 or 3 including minor development and change of use more than 1 hectare (ha) in flood zone 1;
- less than 1ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains and reservoirs);
- In an area within zone 1 which has critical drainage problems as notified by the Environment Agency.

4.3 The site
The site current use is residential
The site is accessed via Ashfield Close

4.4 Sequential Test
The development is considered to be non-minor and as such the Sequential Test may be required by the LLFA.

4.5 Exception Test
The requirements for an Exception Test are given in Table 2 and are defined in terms of Flood Zone and vulnerability classification. Exception Test should not be required.

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.

Table 2: NPPF flood zone vulnerability compatibility

4.6 Site specific flood risk analysis

1.0 Fluvial (river) and Tidal (Sea) Flood Risk

Flood Zone 1: Less than 1 in 1000 (0.1%) annual probability of flooding.
The nearest potential source of Fluvial flooding to the site is considered to be the River Thames.
The site is considered unlikely to be affected by fluvial flooding.

2.0 Tidal Flooding

As with fluvial flood risk, tidal flood risk is assessed using flooding maps produced by the Environmental Agency. The EA tidal flood zone for zone 1 is defined as:
Flood Zone 1: Less than 1 in 1000 (0.1%) annual probability of flooding.

The site is outside the Thames Tidal Upriver Breach Inundation Model (compiled by Atkins Ltd 2017), meaning there are no depths or flood levels for the site and the site is considered unlikely to be affected by tidal flooding.

3.0 Pluvial (Surface Water) Flood Risk

A pluvial, or surface water flood, is caused when heavy rainfall creates a flood event independent of an overflowing water body. Surface water flooding occurs when high intensity rainfall leads to a run-off which flows over the ground surface, causing ponding in low lying areas when the precipitation rate is greater than the rate of infiltration or return into watercourses or when the drainage network has insufficient capacity.
The EA has no record of properties flooding in this CDA area, see 8.0 below.

4.0 Surface Water Flood Risk from Artificial Sources

An examination of OS mapping and the EA's mapping revealed that there are no significant reservoirs or canals in the area of the site.

5.0 Sewer Flooding

No specific information relating to sewer flooding incidents was found at or within the vicinity of the site.

7.0 Ground Water Flood Risk

Ground water flooding occurs when water rises from the underlying aquifer at the location of a spring where the underlying impermeable geology meets the ground surface. This tends to occur after much longer periods of intense precipitation, in often low lying areas where the water table is at a shallow depth.
The Environment Agency does not have any records of groundwater flooding at this location.

8.0 Critical Drainage Area

A Critical Drainage Area (CDA) is defined as 'a discrete geographic area where multiple and interlinked sources of flood risk cause flooding in one or more Local Flood Risk Zones during severe weather thereby affecting people, property or local infrastructure'. A CDA is defined in the Town and Country Planning (General Development Procedure) (Amendment) (No.2) (England) Order as 'an area within Flood Zone 1 which has critical drainage problems and which has been notified to the local planning authority by the Environment Agency.
The site is located within a CDA, ref: Group 8-005 Petersham, LLFA London Borough of Richmond upon Thames. Flooding with this CDA is relatively confined.
See APPENDIX E, Fig 3.8.5a and Fig 3.8.5b.

4.6 Potential Impacts of the Development on Local Flood Risk

1.0 Change in ground cover (sqm)

	Impermeable	Permeable	Total
Existing	196	300	496
Proposed	219	277	496

2.0 The make up of the proposed areas are as follows:

Location	Existing	Proposed
Building	133	184
Driveway	63	35
Garden	300	277

4.7 Flood Mitigation Measures

1.0 SuDS, Options for Implementation:

- Store rainwater for later use.
- Use infiltration techniques, soak aways, permeable paving or attenuation storage tanks.
- Discharge directly to a water course.
- Discharge rainwater directly to a surface water sewer/drain.

2.0 Flood Resilience

Flood resilient construction uses methods and materials that reduce the impact from a flood, ensuring that structural integrity is maintained and the drying out and cleaning required, following inundation, is minimised.

Flood resilience design and measures that should be implemented are outlined below:

2.1 Doors

- Seal doors around edges and openings. Composite material will be used with passive protection meaning that minimal intervention will be required in the event of flooding.

2.2 Underground drainage

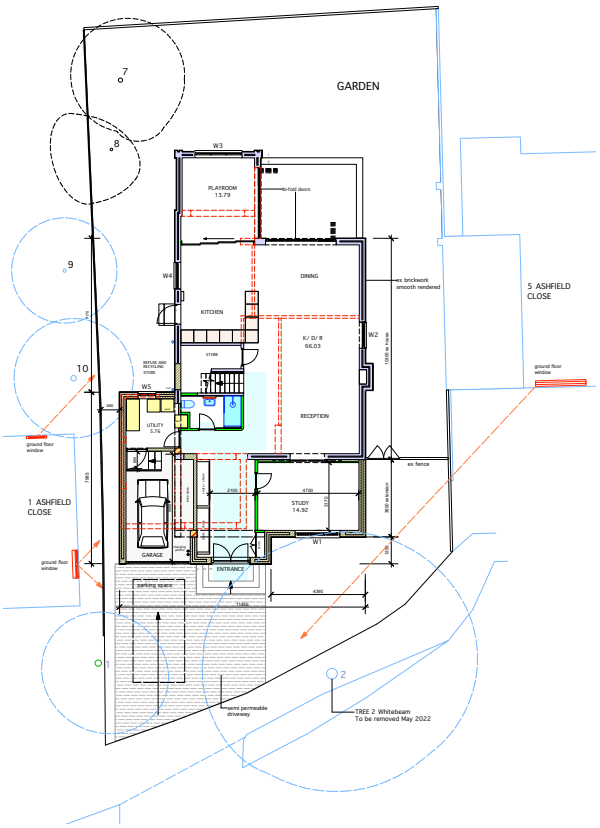
- Avoid the use of metal for any underground piping
- Use closed cell insulation for pipes that are below predicted flood level
- Provide non-return valves for the drainage system to prevent back water flow
- Use uPVC or clay pipework for fouls and surface water drainage.
- Utility services such as fuse boxes, meters, mains cables, gas pipes, phone lines and electrical sockets should be positioned as high as practicable.
- All external openings for pipes or vents below 400mm to be sealed around pipe or vent with expanding foam and mastic.

4.8 Emergency Plan

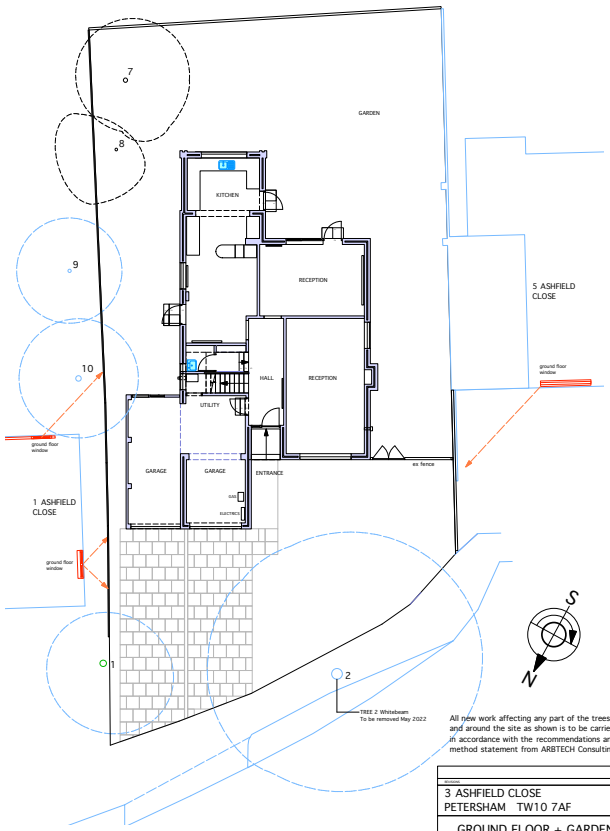
The dangers associated with flood water to people are possible injury and/or death. This can occur as a result of drowning or being carried along by waters into hard objects.
As the site will remain dry during all modelled scenarios the Flood Hazard can be classified as low.

The use of a Flood Emergency Plan is therefore sufficient for the proposed development.
The occupants should subscribe to the EA Flood Warnings Direct Service which is a free service offered by the EA providing flood warnings by phone, SMS and email.
EA operates a 24 hour service on 0345 988 1188.

APPENDIX A
Development plans



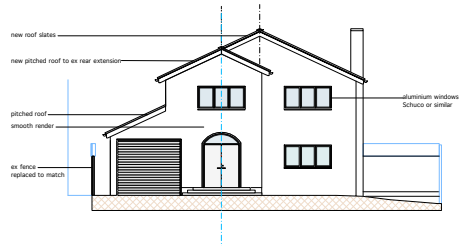
PROPOSED GROUND FLOOR PLAN



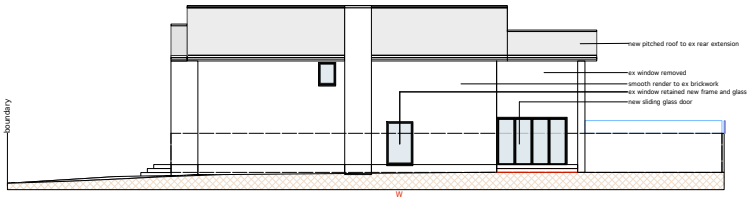
EXISTING GROUND FLOOR PLAN

All new work affecting any part of the trees on and around the site as shown is to be carried out in accordance with the recommendations and method statement from ARBTECH Consulting Ltd

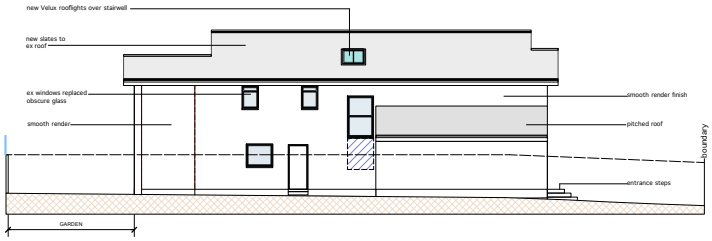
3 ASHFIELD CLOSE PETERSHAM TW10 7AF	
GROUND FLOOR + GARDEN	
10.05.21	1:100 @ A2 AC2-501
PWA 14 EVE ROAD ISLEWORTH TW7 7HS 07962 571310	



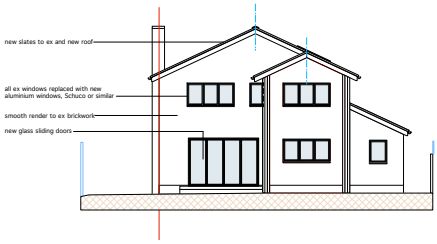
FRONT ELEVATION north west



SIDE ELEVATION south west



SIDE ELEVATION north east



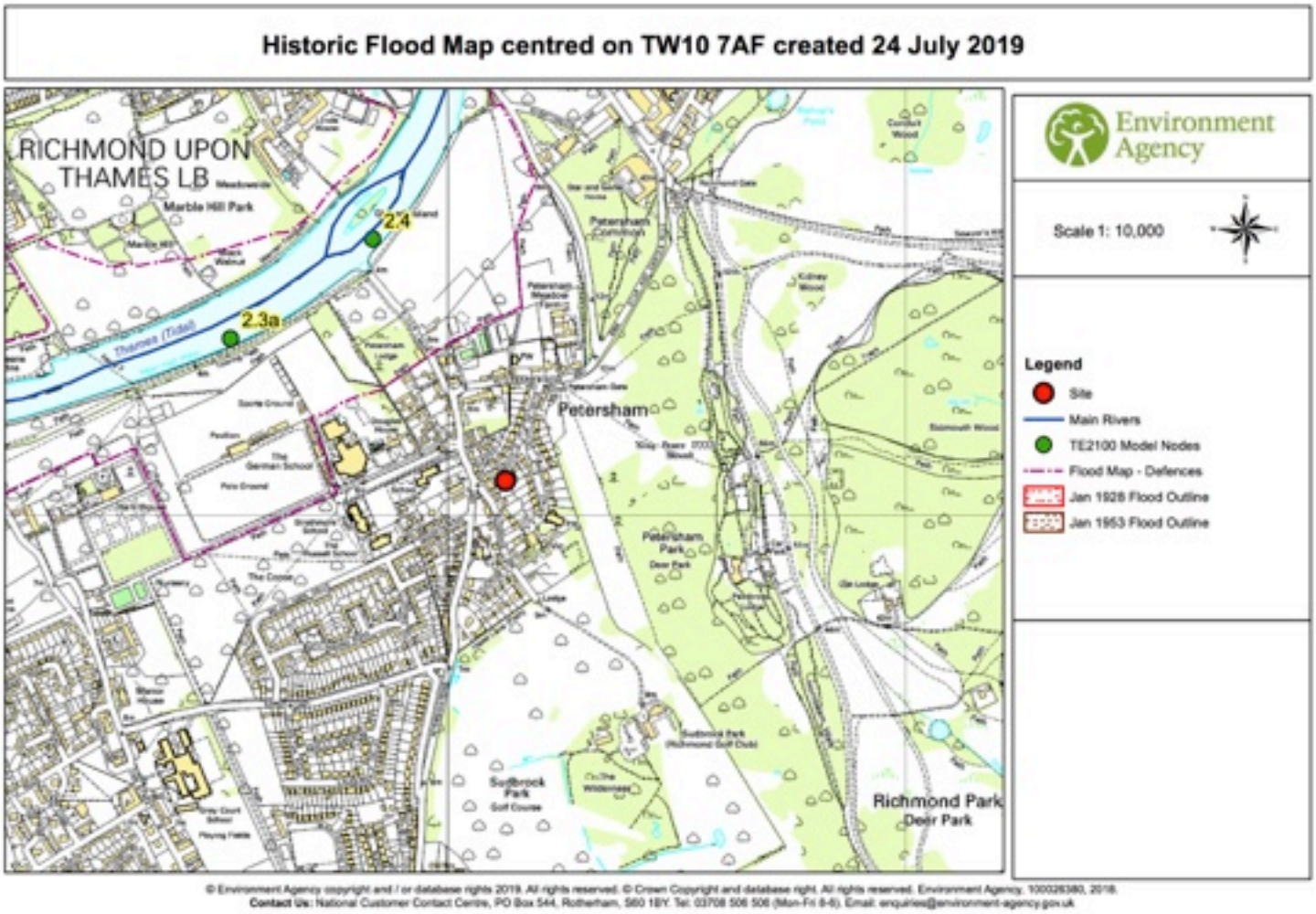
BACK ELEVATION south east

PROPOSED ELEVATIONS

3 ASHFIELD CLOSE PETERSHAM TW10 7AF	
PROPOSED ELEVATIONS	
10.05.21	1:100 @ A2 AC2-505
PWA 14 EVE ROAD ISLEWORTH TW7 7HS 07962 571310	

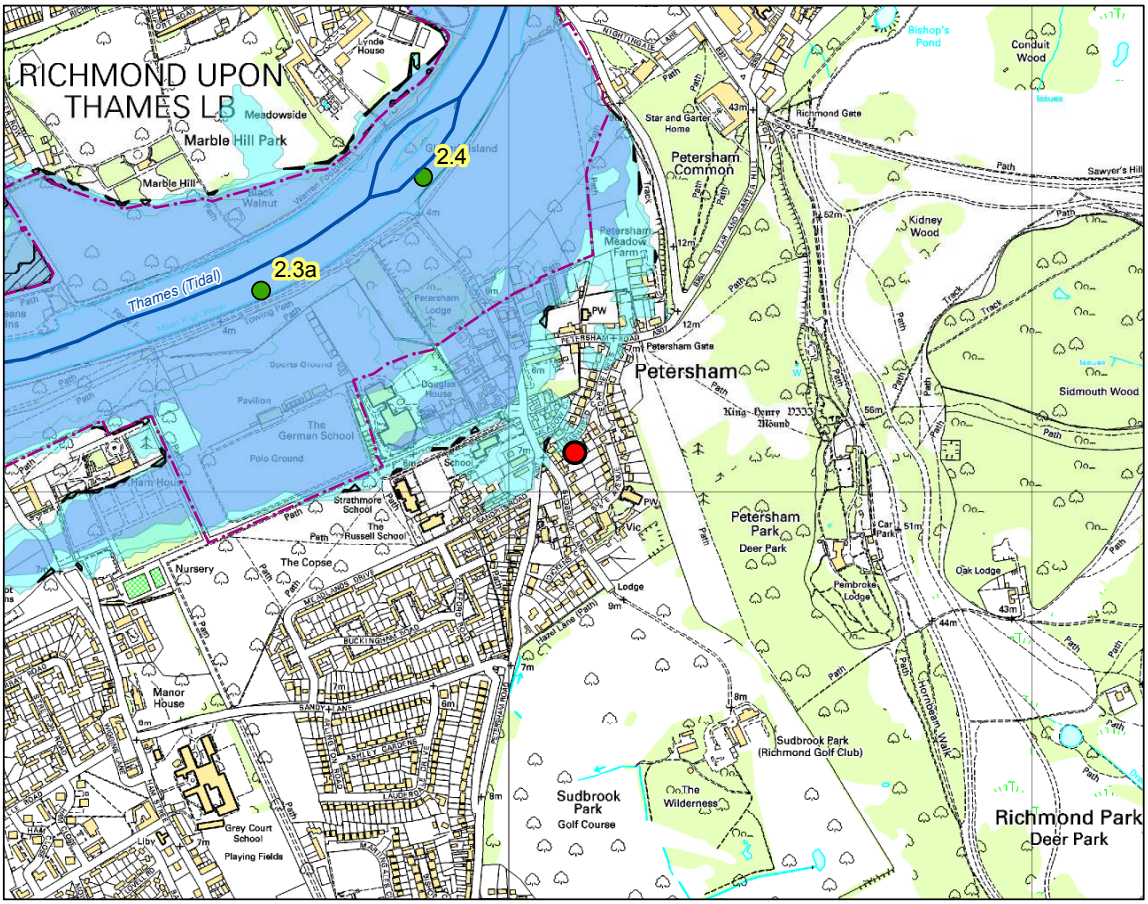
APPENDIX B
Site photos

APPENDIX C



APPENDIX D

Detailed FRA Map centred on TW10 7AF created 24 July 2019



Environment Agency

Scale 1: 10,000

Legend

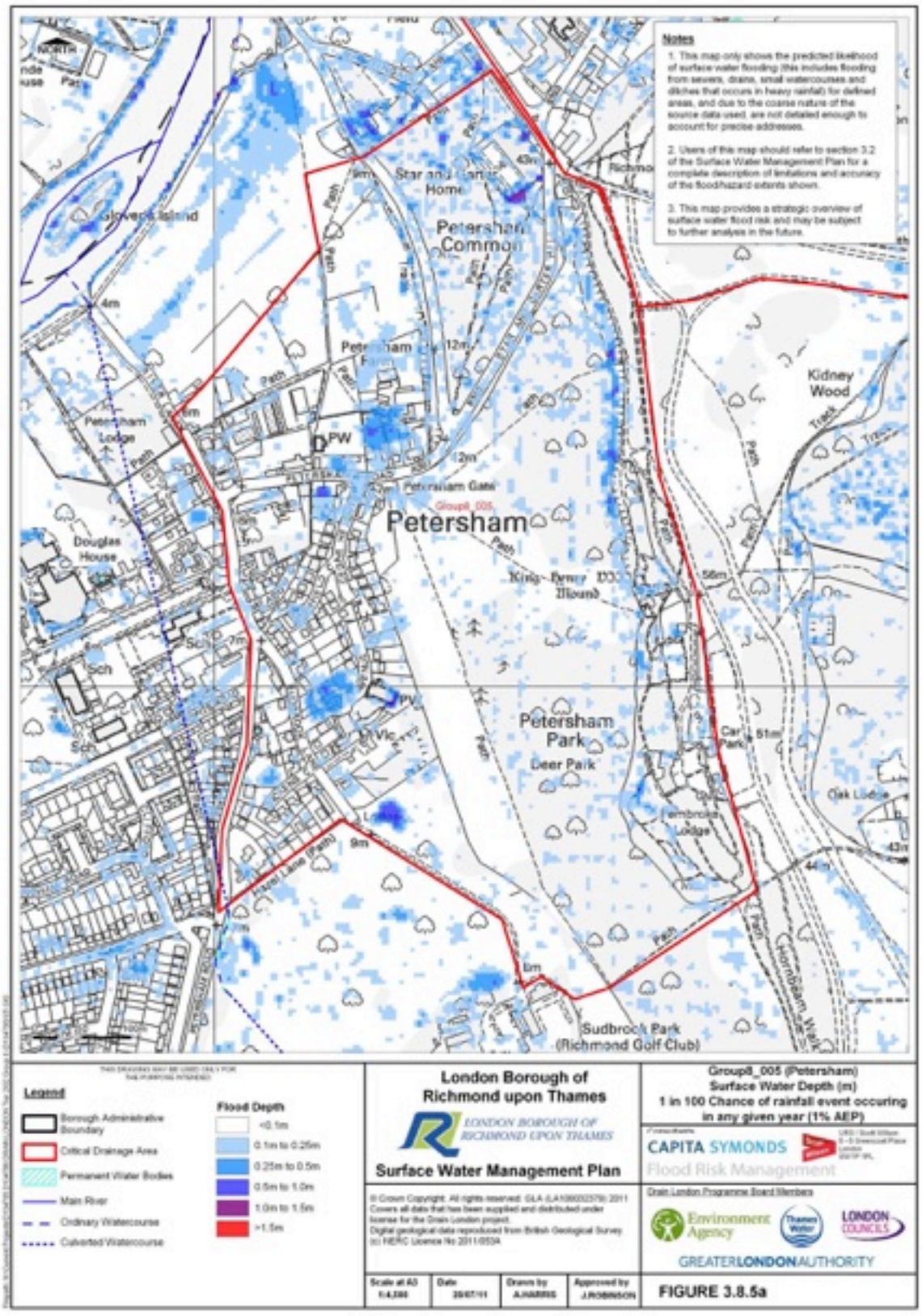
- Site
- Main Rivers
- TE2100 Model Nodes
- Flood Map - Defences
- Flood Map - Flood Storage Areas
- Areas Benefitting from Flood Defences
- Flood Map - Flood Zone 3
- Flood Map - Flood Zone 2

Flood Map for Planning (assuming no defences)

Flood Zone 3 shows the area that could be affected by flooding:
- from the sea with a 0.5% or greater chance of occurring each year
- or from a river with a 1% or greater chance of occurring each year.

Flood Zone 2 shows the extent of an extreme flood from rivers or the sea with up to a 0.1% chance of occurring each year.

APPENDIX E
Figure 3.8.5a



APPENDIX E
Figure 3.8.5b