



## **FLOOD RISK ASSESSMENT**

for

Proposed conversion of a ground floor shop  
To a self-contained flat at  
36 Cherry Tree Avenue  
Dover  
Kent CT16 2NL

on behalf of

**Mr M Uddin**

**Document Control Sheet**

**Project Title**      Proposed conversion of a ground floor shop to a self-contained flat at  
36 Cherry Tree Avenue, Dover, Kent CT16 2NL

**Document Title**    Flood Risk Assessment

**Job No.**              T-2024-017

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## Appendix A Architects Drawings

EMA-2023-175-01 – Existing Layout Plans &amp; Elevations

EMA-2023-175-02 – Proposed Layout Plans &amp; Elevations

Topographical Survey

## Appendix B Environment Agency Details

Product Data 4

Flood Prevention Diagram

## **1.0 EXECUTIVE SUMMARY**

- 1.1 Tridax Ltd has been commissioned by Mr Mohammed Uddin to undertake a Flood Risk Assessment for the proposed conversion work to 36 Cherry Tree Avenue, Dover CT16 2NL.
- 1.2 This Flood Risk Assessment Report (FRA) is prepared in accordance with the Technical Guidance to the National Planning Policy Framework (NPPF) and the Kent County Council Local Flood Risk Management Strategy ~ Guidance on Consultation. The Report takes into consideration the Dover District Council's Strategic Flood Risk Assessment, dated March 2019 together with the Environment Agency advice note and details the observations, calculates the probable flows that may be generated by the development and makes recommendations for the disposal of foul and surface water and identifies any special mitigation measures required to reduce the risks of flooding.
- 1.3 In preparing this Flood Risk Assessment, consultation has been undertaken with the Environment Agency regarding the extent of available information on flood risk at the Site. Flood Mapping and Product Data 4 information has now been provided by the Environment Agency which is derived using the detailed fluvial modelling of the River Dour, completed by JBA Consulting in 2015.
- 1.4 Tridax Ltd consider that with the inclusion of the mitigation measures recommended within this report that the site is sustainable in terms of flood risk and that the proposals do not increase the risk to the neighbouring properties.

## **2.0 STATUS**

- 2.1 This Report is prepared for the sole use of Mr Uddin and his agents in connection with the proposed development. No responsibility can be assumed for the Report if used by others.
- 2.2 For the purposes of the Contracts (Rights of Third Parties) Act 1999, nothing in this Report shall confer on any third party any right to enforce or benefit from any term of this Report

### 3.0 INTRODUCTION

#### Background

- 3.1 Tridax Ltd has been commissioned by Mr Uddin and requested to undertake a Flood Risk Assessment for the proposed conversion of a ground floor shop to provide a self-contained flat. The new flat will include a lounge, kitchen/dining area, bathroom and a single bedroom.

#### Site Location

- 3.2 The development site is an existing mid terraced property located at Ordnance Survey reference TR 31027 42574 (631027mE, 142574mN). The site is located approximately 20m southwest of the junction of Buckland Avenue/Barton Road/Cherry Tree Avenue and approximately 90m north of the River Dour. The existing site location, aerial and block plans are extracted in Frames 1, 2, 3 and 4 below and identified on the Architects drawing included in Appendix A of this report.



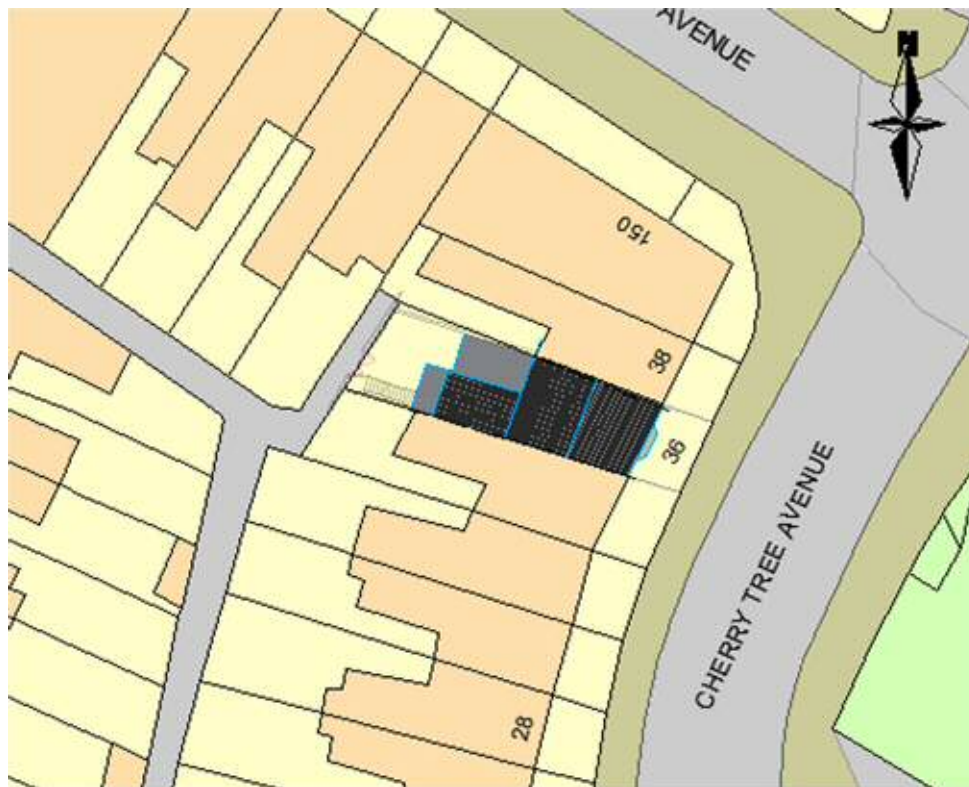
**Frame 1 – Location Plan – Site Edged Red**



**Frame 2 – Front Elevation**



**Frame 3 – Aerial Block Plan – Site Edged Red**

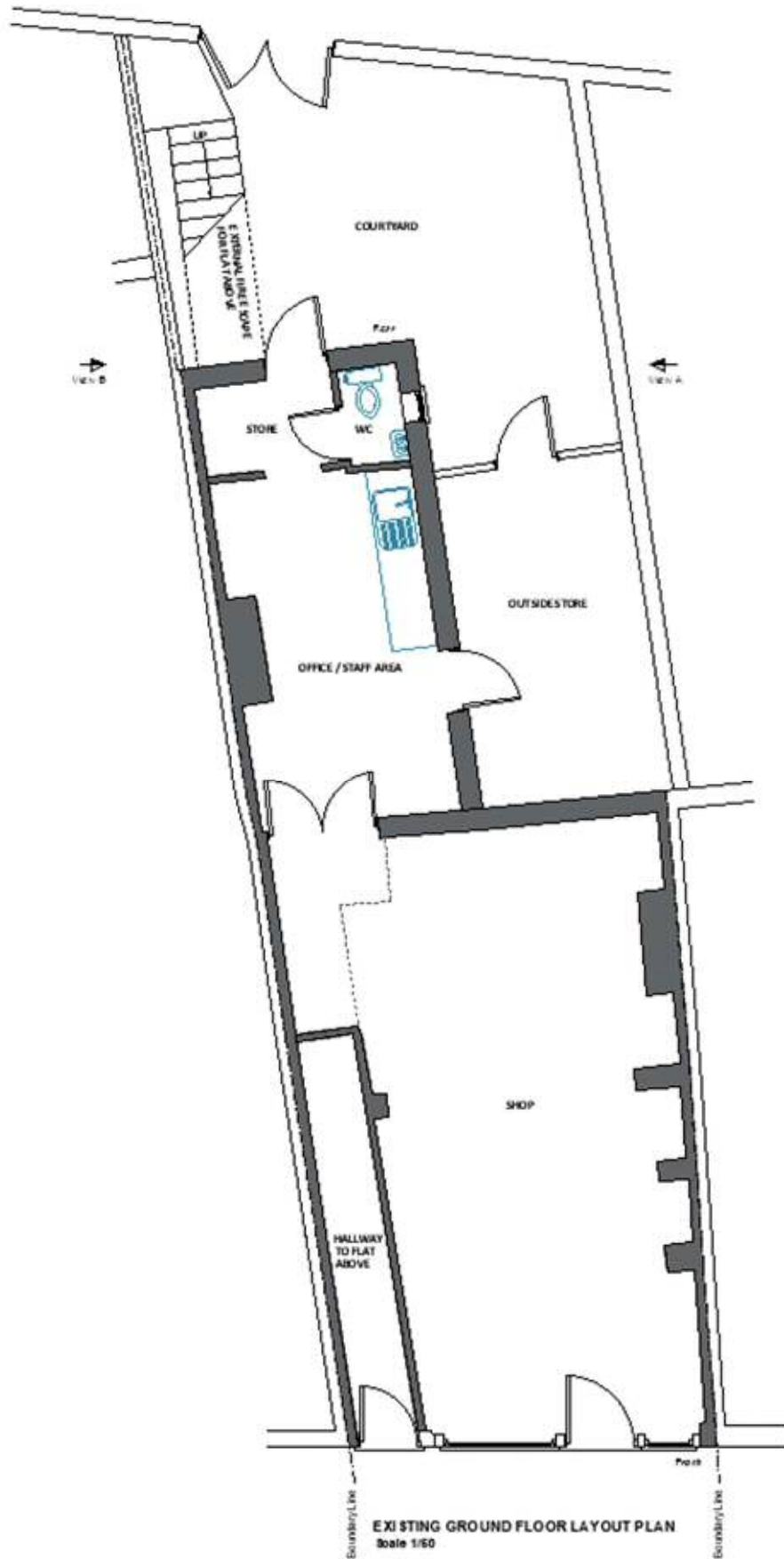


**Frame 4 – Block Plan**

### **Existing Site**

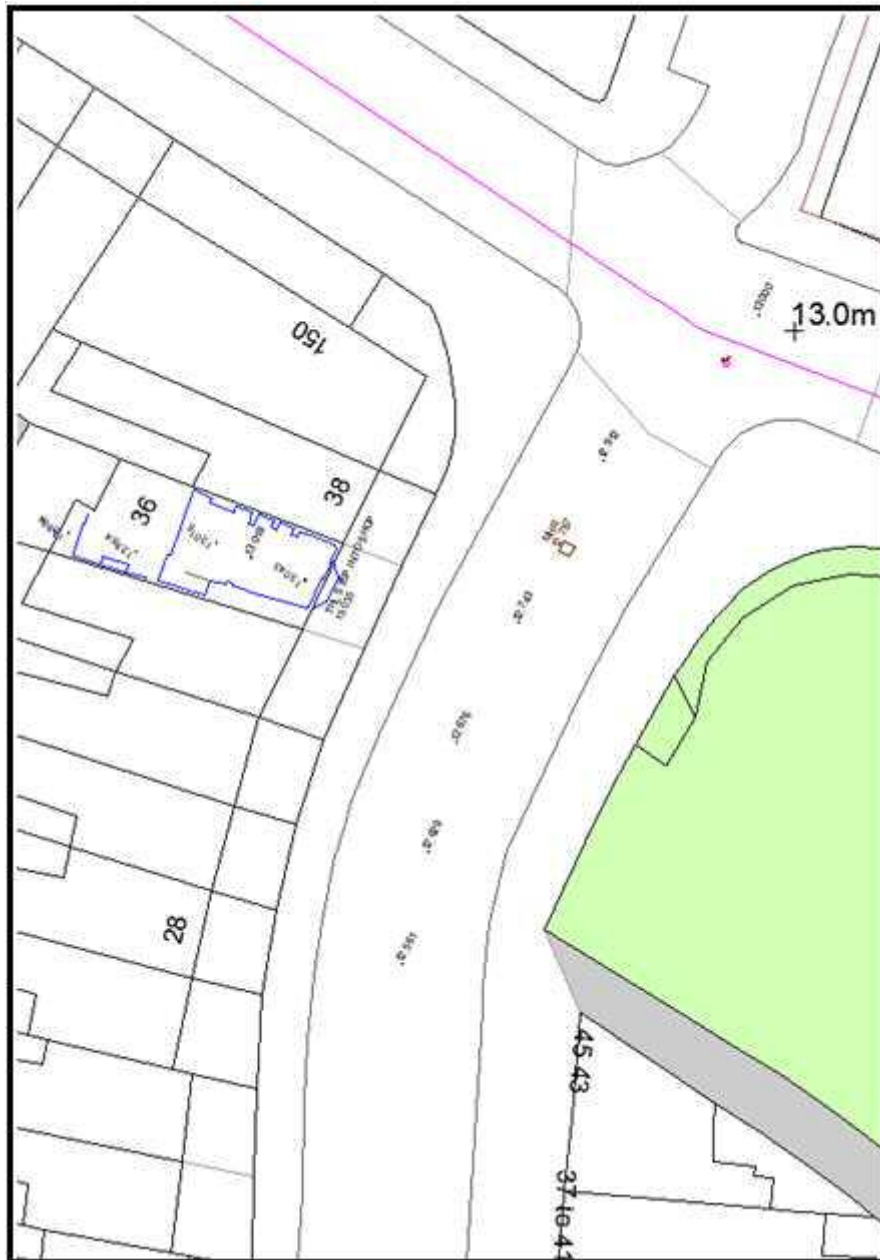
- 3.3 36 Cherry Tree Avenue is a conventional brick-built property set over three floors with rear two-storey additions and small courtyard garden. Off-road parking is provided at the front of the property directly from Cherry Tree Avenue. Access to the rear courtyard garden is via the footpath adjacent the northwest boundary. The total site area is approximately 130m<sup>2</sup> (0.013ha) with predominantly impermeable surface finishes. The Architects floor layout plans are included in Appendix A but also extracted in Frame 5 below.





**Frame 5 – Existing Ground Floor Layout Plan**

- 3.4 A copy of the detailed topographical survey is included in Appendix A and extracted as Frame 6 below. The ground levels on the centreline of the carriageway to the front of the property are shown to be 12.676m – 12.743m AOD. Levels at the entrance to the property is shown to be 13.033mAOD, with the ground floor levels indicated as the front of the property shown to be 13.043mAOD and at the rear 12.954mAOD. The external courtyard level is 12.880mAOD.



**Frame 6 – Topographical Survey**

3.5 Inspection of the public sewer records indicates that there is a public foul sewer approximately 1.3m deep located in the footpath adjacent the northwest boundary together with 100mmØ and 150mmØ public foul sewers identified in Cherry Tree Avenue adjacent the eastern site boundary. There are other foul sewers identified at this location together with public surface water sewers although not in close proximity to the site. It is assumed that the existing property discharges both foul and surface water drainage to the public foul system to the public foul sewer adjacent the northwest site boundary although this will require confirming. Extracts of the public sewer records are shown in Frame 7 below.



**Frame 7 – Extract of Public Sewer Records (Site Edged Red)**

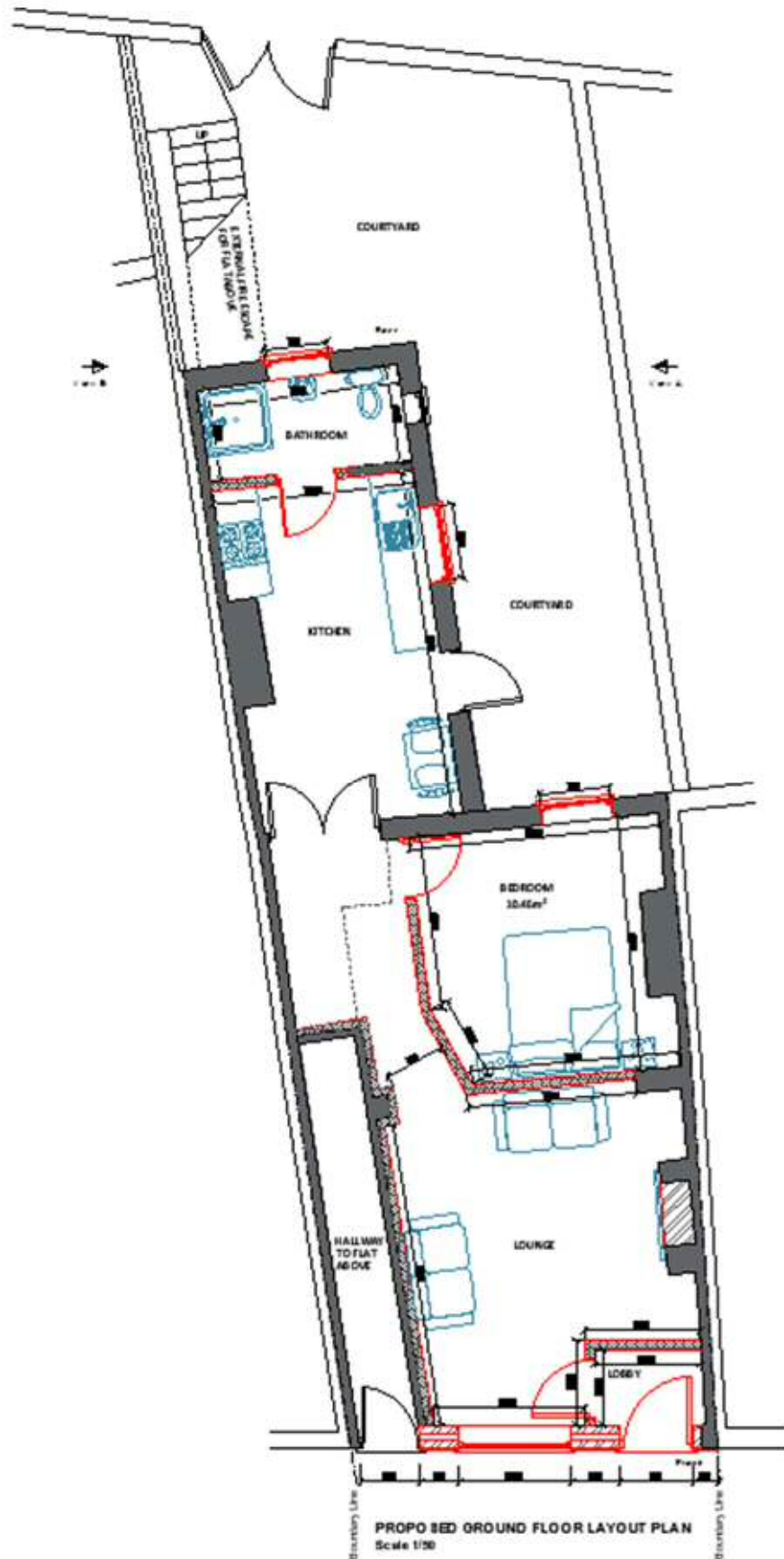
- 3.6 Inspection of the Geological Map of Great Britain indicates that the site will be underlain with a Bedrock of New Pit Chalk Formation – Chalk with superficial deposits of Head/Alluvium – Clay, Silt, Sand & Gravel and Alluvium – Clay, Silt, Sand & Gravel. Extracts of the Geological Map of Great Britain are shown in Frame 8 below.



**Frame 8 – Extract of the Geological Map of Great Britain**

### **Proposed Development**

- 3.7 The applicant is seeking to convert the existing ground floor shop to a single bed self-contained flat. All conversion work will be restricted to the ground floor level. The details are identified on the Architects drawings enclosed within Appendix A and as extracted in Frame 9 shown below. Post-development will not increase the footprint of the property nor the impermeable surface finishes. There may be scope to reduce the impermeable areas by replacing the impermeable courtyard surface finishes although the area is small and therefore insignificant. Therefore, there will be no increase in the quantity of surface water runoff generated by this development.



**Frame 9 – Proposed Ground Floor Plan**

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- 3.8 As this is a conversion of an existing property there is limited scope for raising of floor levels or creating additional walls. However, there is currently a rear doorway that will be sealed up during this work with a window installed approximately 1.1m above the finished floor level. The existing front elevation glazing and entrance door will be removed and replaced with new wall, window and entrance door. This will be undertaken in cavity brick/blockwork suitably bonded to the existing structure. The construction work will utilise flood resilient construction methods with the types of materials selected to prevent or reduce the risk of structural damage caused by flood or surface water runoff to prevent the growth of wet rot spores. The access points into the development site will remain as existing. The ground floor will provide a self-contained flat incorporating a Lounge, Kitchen/dining area, bathroom and single bedroom. There will be no direct access to floor levels above. There will be sleeping arrangements located at the ground floor level.
- 3.9 The Environment Agency recommends that finished floor levels (FFL) are set a minimum of 600mm above the design flood level if sleeping arrangements are provided at ground floor level or 300mm above the design flood level for all other habitable accommodation.
- 3.10 Surface water run-off will not be altered and will continue to be collected via guttering with associated rainwater downpipes. It is assumed that surface water runoff currently combines with the properties foul drainage within the site which then discharges to the public foul system identified adjacent the northwest boundary. There will be no opportunity to reduce surface water runoff although the introduction of permeable surface finishes to the rear courtyard may represent a minor improvement. There will be NO increase in surface water runoff generated by this redevelopment, therefore, there will not be an impact upon any adjacent properties.
- 3.11 The foul drainage requirements will be designed in accordance with Building Regulations to connect into the public foul drainage system via existing private foul drainage within the development site.

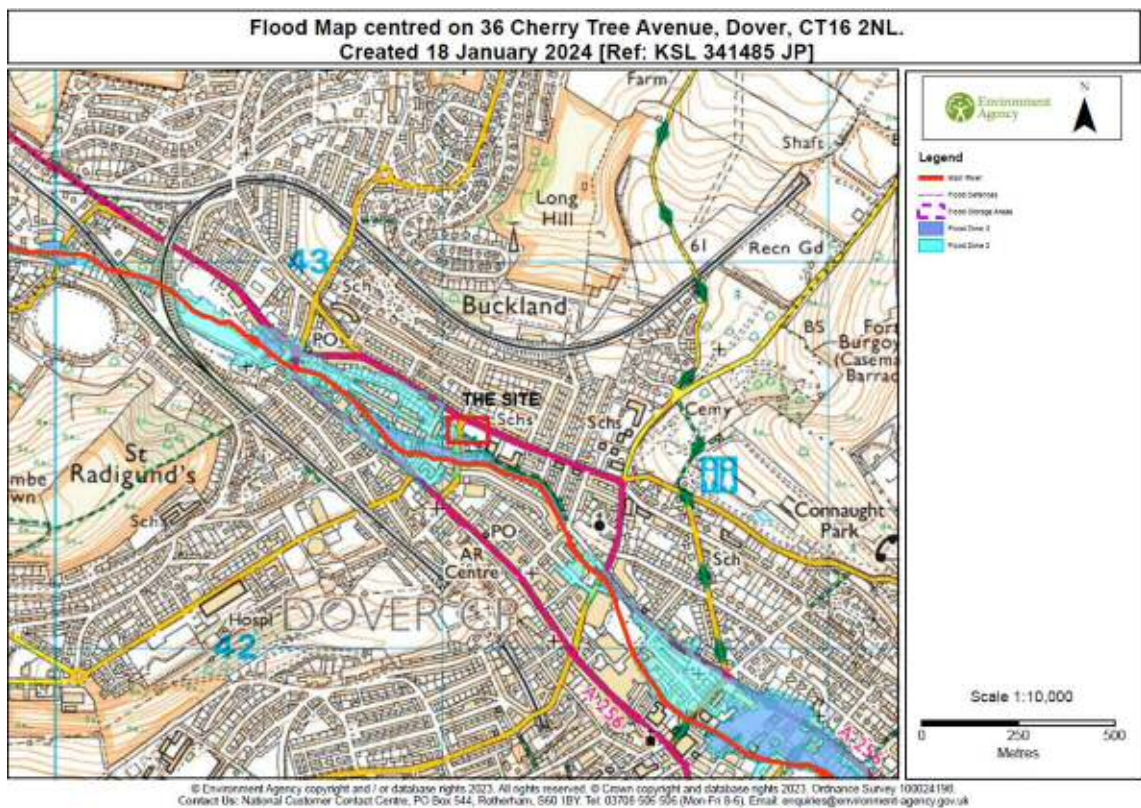
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## Requirement for Flood Risk Assessment

- 3.12 Flood risk is primarily regulated through planning policy. Key requirements with respect to flooding are outlined in the National Planning Policy Framework (NPPF) which was published in March 2012, revised in July 2018, and updated 19 February 2019.
- 3.13 The NPPF requires that an FRA should be submitted with planning applications for all sites over one hectare in area and all smaller sites within Flood Zones 2 and 3 to determine the risks of flooding at a development site (from all sources including rivers, the sea, sewers, and groundwater). An FRA is therefore an essential element in the overall acceptability of the proposed development in planning terms.
- 3.14 Guidance on the content of FRAs is contained in Technical Guidance to the National Planning Policy Framework which has been used to inform the scope and content of this FRA.
- 3.15 The primary resource for reviewing fluvial and tidal flood risks is via the Environment Agency (EA) indicative floodplain maps and analysis of their Product Data 4. These classify risks as follows:
- Flood Zone 1 (Low Probability): annual probability of flooding less than 1 in 1,000 (<0.1%);
  - Flood Zone 2 (Medium Probability): annual probability of flooding more than 1 in 1,000 (0.1%) but less than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding; and
  - Flood Zone 3 (High Probability): annual probability of flooding more than 1 in 100 (1%) for fluvial flooding or 1 in 200 (0.5%) for tidal flooding.
- 3.16 Inspection of the Environment Agency Product Data 4 Information together with discussions with them indicate that part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and that part of the site lies outside the extreme flood outline known as Flood Zone 1.

**Consultation**

3.17 In preparing this Flood Risk Assessment, consultation has been undertaken with the Environment Agency both at an initial contact and a further enquiry regarding the extent of available information on flood risk at the site which is extracted as the Flood Map in Frame 10 below. The Environment Agency Product 4 (Detailed Flood Risk) information is included in Appendix B. The information provided is based on the best data currently available.



**Frame 10 – Extract of Environment Agency Flood Maps**

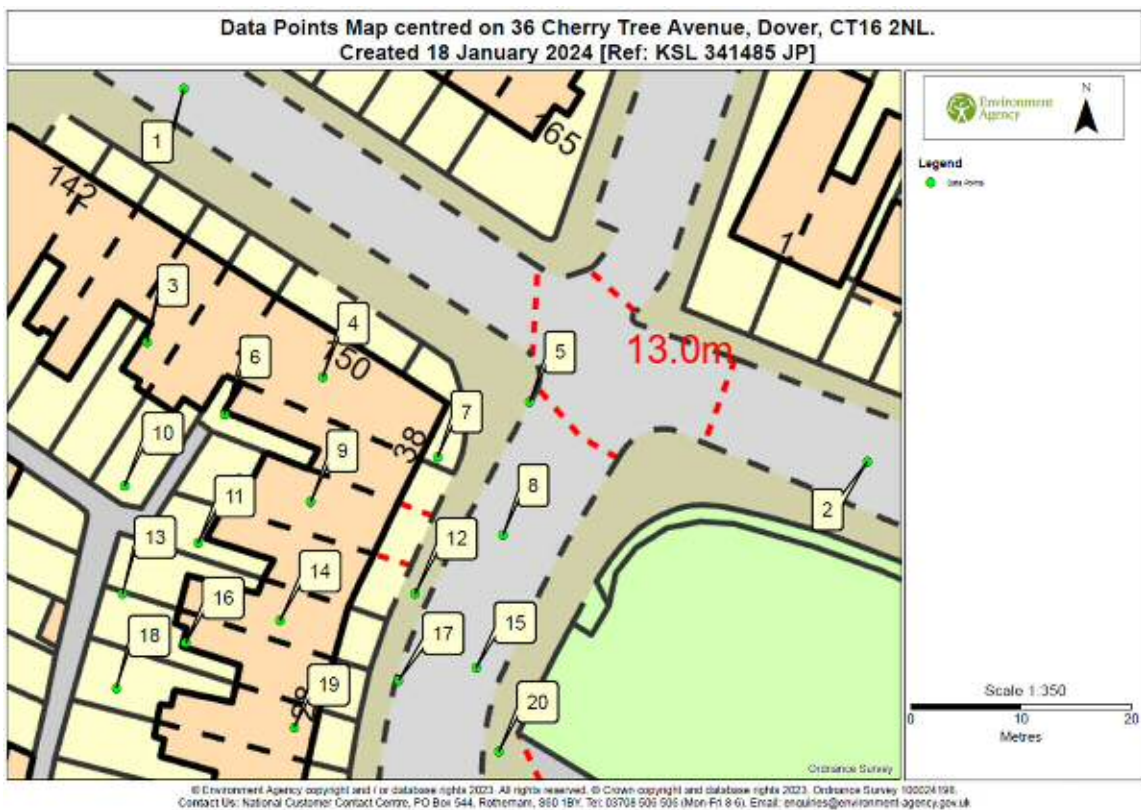
3.18 The Environment Agency Flood Map shows the natural floodplain for areas at risk from river and tidal flooding. The floodplain is specifically mapped ignoring the presence and effect of defences. Although flood defences reduce the risk of flooding they cannot completely remove that risk as they may be over topped or breached during a flood event. The Flood Map at this location has been derived using detailed fluvial modelling of the River Dour, completed by JBA Consulting in 2015.



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- 3.19 The Flood Map indicates the probability of a flood of a particular magnitude, or greater, occurring in any given year. This is known as the Annual Exceedance Probability (AEP). Flood Zone 3 indicates areas of land having a 1 in 100 or greater annual probability (1% AEP) of flooding from rivers, or 1 in 200 or greater annual probability (0.5% AEP) of flooding from the sea. Flood Zone 2 indicates areas of land having up to a 1 in 1000 annual probability (0.1% AEP) of flooding from rivers or the sea. The flood map also shows the location of some flood defences and the areas that benefit from them.
- 3.20 Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences specifically in the event of flooding from rivers with a 1% (1 in 100) chance in any given year or flooding from the sea with a 0.5% (1 in 200) chance in any given year. If the defences were not there these areas would be flooded. An area of land may benefit from the presence of a flood defence even if the defence has overtopped if the presence of the defence means that the flood water does not extend as far as it would if the defence were not there.
- 3.21 The flood map is intended to act as a guide to indicate the potential risk of flooding. When producing it the Environment Agency use the best available data at the time of completion, considering historic flooding and local knowledge. The flood map is updated on a quarterly basis to account for any amendments required.
- 3.22 Ideally all accommodation should be set above the extreme level. However, if it is not practical to raise the ground floor that high then it may be acceptable to use flood resilient construction on the ground floor and provide safe refuge on the first floor. In either case a robust warning and evacuation plan should be specified as the property would be rendered inaccessible by the floodwater.
- 3.23 Information provided by the Environment Agency has been produced using a 2D TuFlow model. The floodplain has been represented as a grid and the flood water levels and/or depths have been calculated for each grid cell. The modelled flood levels/depths presented are for the closest most appropriate model grid cells.

3.24 On 19 Feb 2016, the ‘*Flood Risk Assessments: Climate change allowances*’ were published on gov.uk. which replaced the previous guidance allowances for Planners. The data provided in the Product Data 4 details provided by the Environment Agency includes the new allowances which have now been considered in this FRA and factored in to demonstrate the development will be safe from flooding. The **fluvial climate change** factors are now more complex reflecting the fact that the latest information shows a single uplift percentage across England cannot be justified. The Environment Agency will incorporate these new allowances into future modelling studies.

3.25 A map showing the location of the points from where the data is taken is shown in Frame 11 below. All levels and depths taken are from the River Dour Fluvial Mapping Study’ completed by JBA Consulting in 2015. Climate change (CC) data represents modelled levels with a 20% increase in river flows. A zero (0.00) figure indicates that the data point is outside of the flood extent for a particular return period at that location. Node 9 is centred on the property.



**Frame 11– Modelled Data Points**

3.26 The modelled undefended fluvial flood levels and depths are shown in Frames 12 and 13 below. The modelled undefended fluvial flood levels and depths including climatic change for the 1% AEP are shown in Frames 14 and 15 below.

Point ID	National Grid Reference		Modelled Fluvial Flood Levels for Annual Exceedance Probability (AEP) events shown (metres AOD)												
	Easting	Northing	Undefended												
			50% AEP	20% AEP	10% AEP	5% AEP	3.3% AEP	2% AEP	1.3% AEP	1% AEP	1% AEP + CC (20%)	0.4% AEP	0.1% AEP		
1	831019	142619	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	831090	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	831015	142596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	831031	142593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	831050	142590	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	831022	142589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	831041	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	831047	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	831030	142581	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	831013	142583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	831020	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	12.54
12	831039	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	831013	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	831027	142571	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
15	831045	142566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	831019	142569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
17	831038	142565	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.47
18	831012	142564	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
19	831029	142561	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.47
20	831047	142559	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Frame 12 – Modelled Fluvial Flood Levels – Undefended (metres AOD)**

It can be seen from Frame 12 above that in Undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC scenario. It should be noted that these nodes are not located at this property.

Point ID	National Grid Reference		Modelled Fluvial Flood Depths for Annual Exceedance Probability (AEP) events shown (metres)												
	Easting	Northing	Undefended												
			50% AEP	20% AEP	10% AEP	5% AEP	3.3% AEP	2% AEP	1.3% AEP	1% AEP	1% AEP + CC (20%)	0.4% AEP	0.1% AEP		
1	831019	142619	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	831090	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	831015	142596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	831031	142593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	831050	142590	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	831022	142589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	831041	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	831047	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	831030	142581	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	831013	142583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	831020	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
12	831039	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	831013	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	831027	142571	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
15	831045	142566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	831019	142569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
17	831038	142565	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
18	831012	142564	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
19	831029	142561	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
20	831047	142559	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Frame 13 – Modelled Fluvial Flood Depths – Undefended (metres AOD)**

It can be seen from Frame 13 above that in Undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC scenario. It should be noted that these nodes are not located at this property. The closest node identified (11) indicates a flood depth of 10mm. Node 14 which is approximately 12m away from the sites southern boundary indicates a flood depth of 220mm.

Point ID	National Grid Reference		Modelled Fluvial CC Flood Levels for AEP events shown (metres AOD)				
			Undefended				
	Easting	Northing	1% AEP + CC (30%)	1% AEP + CC (35%)	1% AEP + CC (45%)	1% AEP + CC (50%)	1% AEP + CC (105%)
1	631019	142619	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	12.55
12	631039	142573	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	12.48
15	631045	142566	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	12.48
17	631038	142565	0.00	0.00	0.00	0.00	12.47
18	631012	142564	0.00	0.00	0.00	0.00	12.49
19	631029	142561	0.00	0.00	0.00	0.00	12.48
20	631047	142559	0.00	0.00	0.00	0.00	0.00

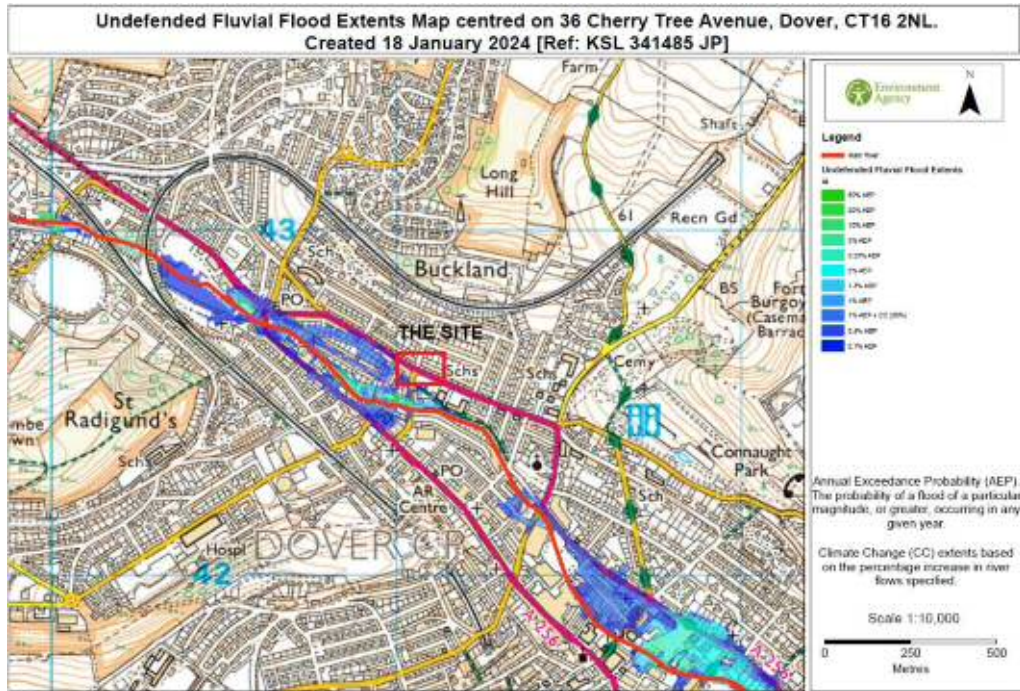
**Frame 14 – Modelled Undefended Fluvial Climatic Change Flood Levels for AEP Events as shown (metres AOD)**

It can be seen from Frame 14 above that in Undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC(105%) scenario. It should be noted that these nodes are not located inside the boundary of this property.

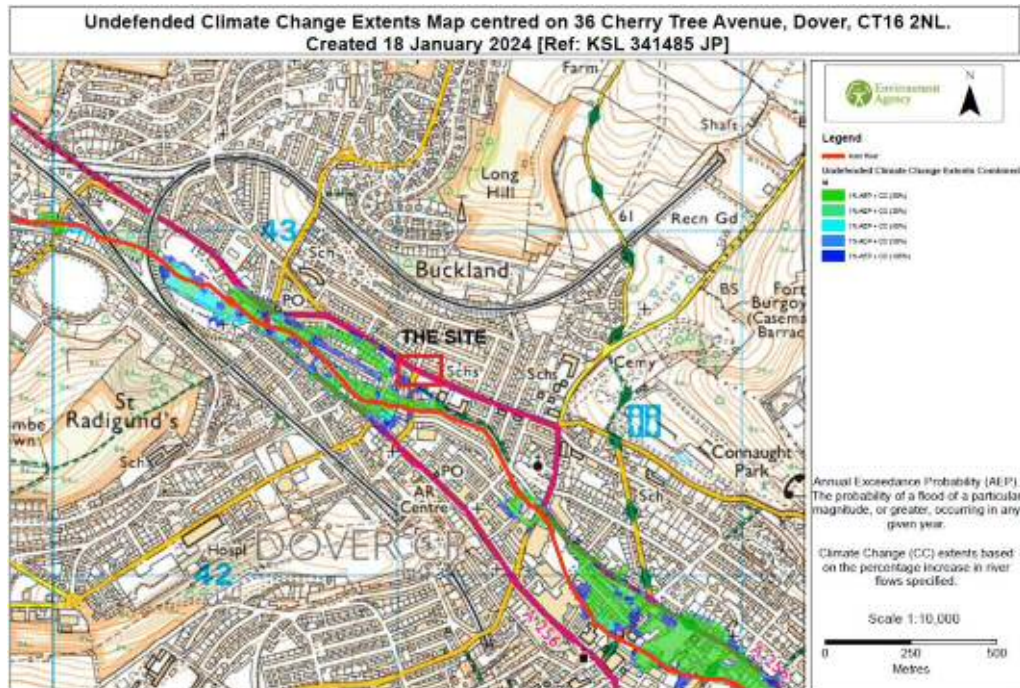
Point ID	National Grid Reference		Modelled Fluvial CC Flood Depths for AEP events shown (metres)				
			Undefended				
	Easting	Northing	1% AEP + CC (30%)	1% AEP + CC (35%)	1% AEP + CC (45%)	1% AEP + CC (50%)	1% AEP + CC (105%)
1	631019	142619	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	0.01
12	631039	142573	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	0.23
15	631045	142566	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	0.39
17	631038	142565	0.00	0.00	0.00	0.00	0.07
18	631012	142564	0.00	0.00	0.00	0.00	0.17
19	631029	142561	0.00	0.00	0.00	0.00	0.05
20	631047	142559	0.00	0.00	0.00	0.00	0.00

**Frame 15 – Modelled Undefended Fluvial Climatic Change Flood Depths for AEP Events as shown (metres AOD)**

It can be seen from Frame 15 above that in Undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC (105%) scenario. It should be noted that these nodes are not located inside the boundary of this property. The closest node identified (11) indicates a flood depth of 10mm. Node 14 which is approximately 12m away from the sites southern boundary indicates a flood depth of 230mm.



**Frame 16 – Undefended Modelled Fluvial Flood Extents Map**



**Frame 17 – Undefended Modelled Fluvial Climate Change Flood Extents Map**

- 3.27 This site is not identified to be within an area benefiting from flood defences as shown on the Flood Map extract above. There are no formal flood defences owned or maintained by the Environment Agency around this site. Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences specifically in the event of flooding from Rivers with a 1% (1 in 100) chance in any given year or flooding from the sea with a 0.5% (1 in 200) chance in any given year. If the defences were not there these areas would be flooded. An area of land may benefit from the presence of a flood defence even if the defence has overtopped if the presence of the defence means that the flood water does not extend as far as it would if it were not there.
- 3.28 The Environment Agency do not hold records of historic flood events from rivers and/or the sea affecting the area local to this site. Please be aware that this does not necessarily mean that flooding has not occurred here in the past. Flooding can occur from different sources such as rivers or the sea, surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system), overflowing or backing up of sewer or drainage systems which have been overwhelmed or groundwater rising up from underground aquifers. Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea.

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## 4.0 NATIONAL PLANNING POLICY FRAMEWORK CONTEXT

- 4.1 Inspection of the Environment Agency Website identifies that part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and also that part of the site lies outside the extreme flood outline known as Flood Zone 1. The mapping does not distinguish between high-risk areas and the functional floodplains, i.e. Flood Zones 3a and 3b.
- 4.2 The functional floodplain is defined by NPPF as land where water has to flow or be stored in times of flood during events that have a probability of occurrence of 1 in 20 (5%) or greater in any one year. The Practice Guide to NPPF goes on to further clarify this by adding the following definitions.
- (a) Areas which would naturally flood with an annual exceedance probability of 1 in 20 (5%) or greater, but which are prevented from doing so by existing infrastructure or solid buildings will not normally be defined as functional floodplain.
  - (b) Developed areas are also not generally considered to comprise functional floodplains, however, areas such as car parks that have been designed to provide flood storage and conveyance function may be.
  - (c) The functional floodplain may also include areas intended to provide transmission and storage of water from other sources of flooding (e.g. surface water).
- 4.3 Based on the information that has been provided by the Environment Agency and reference to the Dover District Council's Strategic Flood Risk Assessment, part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and also that part of the site lies outside the extreme flood outline known as Flood Zone 1..
- 4.4 Inspection of the Dover District Council Strategic Flood Risk Assessment outlines the following details.

- 4.4.1 The SFRA is at the core of the NPPF (PPS25) approach. It provides essential information on flood risk, taking climate change into account, thereby allowing the LPA to understand risk across its district so that the Sequential Test can be properly applied. The need for LPAs to consider flood risk when preparing Local Development Documents (LDD) and to produce SFRAs is highlighted in paragraphs 12 and 25 of PPS25, now replaced by NPPF paragraphs 93 – 108 *‘Meeting the challenge of climate change, flooding and coastal change’*
- 4.4.2 **Flood Zones 1** – Low probability of flooding – This zone is assessed as having less than a 1 in 1000 annual probability of river or sea flooding in any one year. *If the site is less than 1 hectare then a site-specific FRA will only be required if it lies within an area defined by either the Critical Drainage Zone or the Overtopping Hazard Zone, or if it is identified by the Council as being a site with specific critical drainage problems or is located within 20m of a main river.*
- 4.4.3 **Flood Zone 2** – Medium probability of flooding – This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding or between 1 in 200 and 1 in 1000 annual probability of sea flooding in any one year. *A site-specific FRA will be required, and this will need to be prepared in accordance with the requirements set out in PPS25, paragraphs 10 - 13 and annex E.*
- 4.4.4 **Flood Zone 3** – High probability of flooding - This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding or 1 in 200 or greater annual probability of sea flooding in any one year. *A site-specific FRA will be required, and this will need to be prepared in accordance with the requirements set out in PPS25, paragraphs 10 - 13 and annex E.*



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### ***Flooding from Surface Water Runoff and Overland Flow***

- 4.4.5 Overland flooding typically occurs in natural valley bottoms as normally dry areas become covered in flowing water and in low spots where water may pond. This flooding mechanism can occur almost anywhere but is likely to be of particular concern in any topographical low spot, or where the pathway for runoff is restricted by terrain or man-made obstructions.
- 4.4.6 Parts of the District have a very steep topography and are heavily urbanised. In addition, in many places surface water is discharged into the streams that flow through these towns. These streams flow predominantly in culverts through these densely populated urban areas and historically these have become surcharged during extreme rainfall events. This has resulted in surface water flowing in streets, which has caused flooding to properties in the past.

### ***Impact of Climate Change on the SFRA Study Area***

- 4.4.7 The Environment Agency Flood Zone maps are based on current day sea levels and climate conditions; however, to gain an understanding of the impact of rising sea levels, the Flood Zone maps have been re-produced using the 2115 predicted extremes.
- 4.5 There are generally three significant policies in relation to flood risk which are:-
- 4.5.1 All development will be controlled so as not to give rise to flooding or surface, groundwater, or aquifer pollution. Surface water should be disposed of as close to source as possible or attenuated before discharge to a watercourse or surface water sewer. Surface water should not be allowed to enter the foul system.
- 4.5.2 Areas within Zones 2 and 3 at risk from fluvial flooding are identified on the Environment Agency Flood Map. Planning applications for development on sites of more than 1 hectare within these areas must be accompanied by a flood risk assessment appropriate to the scale of and nature of the development, the level of flood risk, and the protection afforded by the existing defences. Development in undeveloped areas at risk from fluvial flooding will only be permitted in exceptional circumstance. In developed areas at risk from fluvial flooding,

development will only be permitted where appropriate flood defence measures are taken, and it can be demonstrated that there is no increased risk of flooding to other sites.

- 4.5.3 Generally the Local Authority will, in consultation with the Environment Agency, ensure that new developments safeguard existing tidal and fluvial defences. Where works are being carried out in proximity to a tidal or fluvial flood defence the Council will seek to safeguard and where possible extend public access to the waterfront and protect and enhance existing ecological features, the existing flood defences, and access to flood defence facilities for operational maintenance purposes.
- 4.6 Planning permission will be refused for residential development in areas at risk of fluvial or tidal flooding, as identified by the Environment Agency, unless it can be shown that the site is defended to an appropriate standard. Where a site is protected to an appropriate standard the development will be required to show appropriate measures to ensure the safety of the occupiers of the accommodation from flooding.
- 4.7 Generally, development will only be permitted where the District Planning Authority is satisfied that suitable sustainable urban drainage methods, or an alternative method as agreed with the drainage authority designed to mitigate any adverse effects of surface water run-off, are included as an integral part of the development and measures are proposed to ensure the future maintenance of such schemes.
- 4.8 According to Table 2 of the Technical Guidance to NPPF (see Frame 18 below), the site usage is considered to be 'More Vulnerable', (dwelling houses).

Essential Infrastructure	<ul style="list-style-type: none"> <li>Essential transport infrastructure (including mass evacuation routes) which has to cross the area at risk; and strategic utility infrastructure, including electricity generating power stations and grid and primary substations.</li> </ul>
Highly Vulnerable	<ul style="list-style-type: none"> <li>Police stations, Ambulance stations and Fire stations and Command Centres and telecommunications installations required to be operational during flooding.</li> <li>Emergency dispersal points.</li> <li>Basement dwellings.</li> <li>Caravans, mobile homes and park homes intended for permanent residential use.</li> <li>Installations requiring hazardous substances consent.<sup>19</sup></li> </ul>
More Vulnerable	<ul style="list-style-type: none"> <li>Hospitals.</li> <li>Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.</li> <li>Buildings used for: dwelling houses; student halls of residence; drinking establishments; nightclubs; and hotels.</li> <li>Non-residential uses for health services, nurseries and educational establishments.</li> <li>Landfill and sites used for waste management facilities for hazardous waste.<sup>20</sup></li> <li>Sites used for holiday or short-let caravans and camping, <b>subject to a specific warning and evacuation plan.</b></li> </ul>
Less Vulnerable	<ul style="list-style-type: none"> <li>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.</li> <li>Land and buildings used for agriculture and forestry.</li> <li>Waste treatment (except landfill and hazardous waste facilities).</li> <li>Minerals working and processing (except for sand and gravel working).</li> <li>Water treatment plants.</li> <li>Sewage treatment plants (if adequate pollution control measures are in place).</li> </ul>

**Frame 18- Extract of NPPF Table 2 - Land Use Vulnerability**

4.9 Reference to Frame 19 below, Table 3 of the Technical Guidance to NPPF, the 'More vulnerable' land use **does not** require the **exception test** performing for Flood Zone 2.

**Table D.3<sup>22</sup>: Flood Risk Vulnerability and Flood Zone 'Compatibility'**

Flood Risk Vulnerability classification (see Table D2)		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone (see Table D.1)	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test required	✓	✓
	Zone 3a	Exception Test required	✓	✗	Exception Test required	✓
	Zone 3b 'Functional Floodplain'	Exception Test required	✓	✗	✗	✗

**Frame 19 - Extract of NPPF Table 3**

**Sequential Test**

4.10 Local Planning Authorities (LPA) are encouraged to take a risk-based approach to proposals for developments in or affecting flood risk areas through the application of the Sequential Test and the objectives of this test are to steer new development away from high-risk areas towards those at lower risk of flooding.

However, in some areas where developable land is in short supply there can be an overriding need to build in areas that are at risk of flooding. In such circumstances, the application of the Sequential Test is used to ensure that the lower risk sites are developed before the higher risk ones. The Sequential Test can be considered adequately demonstrated if both of the following criteria are met:

- The Sequential Test has already been carried out for the site (for the same development type) at the strategic level (Local Plan)
- The development vulnerability is appropriate to the Flood Zone

4.11 Based on the information that has been provided by the Environment Agency and determined by this assessment, the following functional floodplain test is applied.

Do predicted flood levels show that the site will be affected by an event having a return period of 1 in 20 years or less? **X**

Is the site defended by flood defence infrastructure that prevents flooding for events having a return period of 1 in 20 years or greater? **✓**

Does the site provide a flood storage or floodwater conveyance function? **X**

Does the site contain areas that are 'intended' to provide transmission and storage of water from other sources? **X**

Is site within the functional floodplain (Zone 3b). **No**

**This development site is NOT located in a functioning floodplain.**

4.12 NPPF states that the Local Planning Authority should apply the sequential approach as part of the identification of land for development in areas at risk from flooding. The objective of the sequential test is to ensure that lower risk sites are developed before sites in higher risk areas. When applying the test, it is extremely important to ensure that the subject site is only compared with sites that are available for development and are similar in size. This requires a comprehensive knowledge of development sites within the Dover District and is normally applied as part of the Local Development Framework process.

However, when applying the test to sites that have not been assessed as part of the LDF it is often necessary to apply a site-specific test.

- 4.13 The second level of appraisal is through the application of the more detailed and refined flood risk information contained within the Strategic Flood Risk Assessments (SFRA). Such a document has been prepared for the Dover District and this has been referenced to as part of this site-specific FRA.
- 4.14 The most detailed stage at which the sequential approach can be applied is at site-based level. Careful consideration can then be given to the sites topography and development uses can provide opportunities to locate more vulnerable buildings on higher parts of the site and allow less vulnerable items such as recreation areas or car parking to be placed in higher risk areas.

## Exception Test

4.15 By reference to Table 3 of the NPPF (Frame 19 above) it can be seen that an Exception Test is **not** required. The remainder of this report will assess and recommend appropriate flood mitigation measures and assess the flood risk to and arising from the proposed development in order to ensure the following objectives have been met.

- Ascertain the impact of the proposed development on the flood risk in the surrounding area.
- Recommend appropriate flood mitigation measures in line with the recommendations of current best practice.
- Demonstrate that the development provides wider sustainability benefits to the community that outweigh flood risk.
- The development should be on developable, defined as a site that is in a suitable location for housing, or previously developed land.
- A Flood Risk Assessment must demonstrate that the development will be safe, without increasing flood risk elsewhere and where possible, will reduce flood risk overall.

## 5.0 ENVIRONMENTAL CONDITIONS

### Topography

- 5.1 The site is the ground floor of an existing property currently used as a shop. The floor levels above do not form part of this development proposal. A topographical survey identifies the following ground levels. The ground levels on the centreline of the carriageway to the front of the property are shown to be between 12.676m – 12.743m AOD. Levels at the entrance to the property are shown to be 13.033mAOD, with the ground floor level indicated as the front of the property as 13.043mAOD and at the rear 12.954mAOD. The external courtyard level is 12.880mAOD. The local topography is generally flat with only minor variations in levels towards the River Dour and the coastline. The entrance threshold into the property appears to be set approximately 30mm above the footway level.

### Flood Defences

- 5.2 The site is identified on the Environment Agency Flood Map as not benefiting from Flood Defences. It should be noted that the flood map (flood zones) at this location have been derived using a generalised computer modelling study completed in 2020 (using JFLOW modelling techniques) and would not necessarily be aware of any localised walls or structures defending the site. The Environment Agency has taken the decision to retire the datasheet regarding 'Areas that benefit from flood defences' as they have concluded it no longer meets the needs and potentially creates a false sense of security for users. Dover Harbour Board is responsible for Dover Harbour. The defences consist of harbour arms, jetties, sea walls, groynes and shingle beach. The majority of the Dover frontage is enclosed by the outer harbour breakwaters. The Wellington Dock gates are opened 1.5 hours before high tide and closed 1.5 hours after high tide. There is no flap on the outfall and therefore the River Dour is tidally influenced. The Ports Dover Western Docks Revival (DWDR) is an ongoing construction project including the development of Wellington Dock.

### Historical Flooding

- 5.3 The Environment Agency do not keep records of Historic flood events. However, reference to the Dover District Council Strategic Flood Risk Assessment, Section 1.4, notes that fluvial flooding was recorded in 2000 and 2001 because of the

River Dour exceeding its channel capacity. The historic records have been updated and presented as a map in Appendix A.1 of Dover's SFRA report together with a table that identifies the date of each event and details included in Appendix A.3 of that report.



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## Flood Hazards

5.4 Technical Guidance to NPPF identifies six potential sources of flooding and requires that all potential sources that could affect the proposed development are considered.

- Flooding from rivers or fluvial flooding
- Flooding from the sea or tidal flooding
- Flooding from land
- Flooding from groundwater
- Flooding from sewers
- Flooding from reservoirs, canals, and other artificial sources

### 5.5 Flooding from rivers or fluvial flooding

Part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and part of the site lies outside the extreme flood outline known as Flood Zone 1. Data provided by the Environment Agency indicates that part of this site is at a **Very Low Risk** of Fluvial flooding as identified in the 'undefended' modelled scenarios.

### 5.6 Flooding from the sea or tidal flooding

Part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and part of the site lies outside the extreme flood outline known as Flood Zone 1. Data provided by the Environment Agency indicates that part of this site is at a **Very Low Risk** of Fluvial flooding as identified in the 'undefended' modelled scenarios.

### 5.7 Flooding from land

During times of extreme rainfall, surface water flows along the streets potentially resulting in water collecting in low-lying areas. Under normal conditions this surface water is managed via the highway drains, however, under extreme conditions these may become overwhelmed and consequently water can pond in these areas. Data provided by the Environment Agency and extracted below as Frame 20, indicates that this site is at a **Very Low Risk** of surface water flooding



**Frame 20 – Extent of Surface Water Flooding**

5.8 Flooding from groundwater

British Geology Surveys website indicates the site is likely to be underlain by a Bedrock of New Pit Chalk Formation – Chalk with superficial deposits of Head/Alluvium – Clay, Silt, Sand & Gravel and Alluvium – Clay, Silt, Sand & Gravel. The site is not located within a Groundwater Source Protection Zone. The external levels will be reduced to be a minimum 150mm below the ground floor level therefore the risk from groundwater flooding will be **Very Low**.

5.9 Flooding from sewers

The public sewer records identify that there are public foul and surface water sewers in close proximity to this site. The risk of flooding from sewers is considered to be **low**.

5.10 Flooding from reservoirs, canals, and other artificial sources

By reference to the Flood Map extract below in Frame 21 the site is not within the maximum extent of flooding from reservoirs.



Maximum extent of flooding from reservoirs:

- when river levels are normal
- when there is also flooding from rivers
- ⊕ Location you selected

**Frame 21 – Maximum extent of flooding from reservoirs**

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## Risk and Controls

5.11 Considering the hazards identified above at the site, the following requiring consideration and/or mitigation measures.

- Flooding of any new property (Considered)
- Emergency egress through flood water (Considered)
- Displacement of flood water (Considered)
- Health & financial implications of flooding (Considered)
- Loss of mitigation measures during building lifetime (Considered)
- Flood Warning (Considered)

5.12 Flooding of new property

The ground floor levels will be set a minimum 150mm above the finished external ground levels therefore any flood water will be able to flow around the property, so the risk of internal flooding is reduced.

5.13 Emergency egress through flood water

The site is located on land above the 1% AEP level so therefore a dry escape route is available therefore the need for any specialist rescue by the Emergency Services or the need for wading through floodwater can be avoided.

5.14 Displacement of flood water

As the proposed development does not increase the footprint there will be no reduction in the potential capacity of the storage zone.

5.15 Health & Financial Implications

The construction work will utilise flood resilient construction methods.

#### 5.16 Loss of mitigation measures during the lifetime of the property

A copy of this report should be included with the 'New Homeowners Handbook' and any potential purchaser made aware of the mitigation measures included on the site and the long-term maintenance requirement.

#### 5.17 Flood Warning

Whilst the probability of an event of sufficient magnitude to cause floodwaters to reach the levels discussed in this report is low, the risk of such an occurrence is always present. With the sophisticated techniques now employed by the Environment Agency to predict the onset of flood events the opportunity now exists for all residents within the flood risk area to receive flood warnings. This forewarning could be sufficient to either allow occupants to evacuate the area or prepare themselves and the property for a flood event. It is therefore recommended that the Environment Agency's Floodline Service is contacted to find out if it is possible to register for Floodline Warnings Direct, which is a free service that provides flood warnings direct by telephone, mobile, fax or pager.

#### **Off Site Impact**

- 5.18 There is no increased risk associated with this development and there should be no impact on any neighbouring properties. There is no increase in displaced flood water generated by this development.

#### **Residual Risk**

- 5.19 With the introduction of the controls discussed, the potential for harm to life or damage to property for this site is considered to be very low level.

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## 6.0 SURFACE WATER DRAINAGE

### Existing Discharge

6.1 The existing site characteristics are summarised as below.

Total Site Area	0.013 hectares (130m <sup>2</sup> )
Current Site Condition	Developed ~ 'Brownfield'
Existing Impermeable Area	130m <sup>2</sup>
Proposed Impermeable Area	130m <sup>2</sup>
Existing Surface Water	Discharges to public system
Discharge Method	As existing.

### Proposed Discharge

6.2 The requirement of NPPF is that the surface water run-off from the development proposals replicates the natural drainage characteristics of the pre-developed site. There are no proposals to enlarge the property or to undertake any external works other than minor alterations to openings to the perimeter walls, therefore the intention is that surface water disposal remains as it currently does and continues to discharge to the public sewer. There will be no increase in surface water runoff from this site.

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## CONCLUSIONS AND RECOMMENDATIONS

- 7.0 The conclusions of this Flood Risk Assessment for the proposed conversion of the existing ground floor shop to provide a single bed self-contained flat are as follows. This assessment demonstrates that by introducing the recommendations made in this report the development will be safe, without increasing flood risk elsewhere.
- 7.1 The Flood Map at this location has been derived using detailed fluvial modelling of the River Dour, completed by JBA Consulting in 2015. and updated in 2016. Analysis of the Environment Agency Product Data 4 Information identifies that part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and part of the site lies outside the extreme flood outline known as Flood Zone 1.
- 7.2 The development is for the conversion of an existing shop premises to for a self-contained residential flat. Classified as 'more vulnerable' use. The footprint of the building envelope will not increase therefore there is no reduction in the potential storage for displaced water during an extreme event. The ground levels on the centreline of the carriageway to the front of the property are shown to be 12.676m – 12.743m AOD. Levels at the entrance to the property is shown to be 13.033mAOD, with the ground floor levels indicated as the front of the property shown to be 13.043mAOD and at the rear 12.954mAOD. The external courtyard level is 12.880mAOD.
- 7.3 There will be no increase in surface water runoff generated by this development. Post-development does not increase the impermeable surface finishes. There is potential to introduce approximately 20m<sup>2</sup> of permeable surfaces should the owner wish to replace the rear courtyard, but this will have an insignificant impact.
- 7.4 Reference to Table 3 of the Technical Guidance to NPPF, 'More vulnerable' land use does not require the exception test performing for Flood Zone 2 development sites.

- 7.5 Part of the site lies within the outline of a Flood Zone 2 (Medium Probability) with a 0.1% probability of fluvial flooding in any given year and part of the site lies outside the extreme flood outline known as Flood Zone 1. The proposed layout seeks to locate the development in the lower risk areas of the site.
- 7.6 Frame 12 identifies that in the undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC scenario. **It should be noted that these nodes are not located at this property.**
- 7.7 Frame 13 identifies that in the undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC scenario. **It should be noted that these nodes are not located at this property.** The closest node identified (11) indicates a flood depth of 10mm. Node 14 which is approximately 12m away from the sites southern boundary indicates a flood depth of 220mm.
- 7.8 Frame 14 identifies that in the undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC(105%) scenario. **It should be noted that these nodes are not located inside the boundary of this property.**
- 7.9 Frame 15 identifies that in the undefended scenario all nodes are outside all flood extents except nodes 11, 14, 16,17,18 and 19 which are only impacted in the 0.1% AEP + CC (105%) scenario. **It should be noted that these nodes are not located inside the boundary of this property.** The closest node identified (11) indicates a flood depth of 10mm. Node 14 which is approximately 12m away from the sites southern boundary indicates a flood depth of 230mm.
- 7.10 It can be seen that in the 0.1% AEP + CC (105%) scenario the closest node point 11 indicates a flood level of 12.55mAOD. The proposed developments rear floor level will be set at 12.954mAOD, which is 404mm above the flood level. The proposed developments front floor level, where sleeping is proposed, will be set at 13.043mAOD, which is 493mm above the flood level. Land at the



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front entrance to the property is above the 1% AEP level so therefore a dry escape route and safe refuge is available therefore avoiding the need for any specialist rescue by the Emergency Services or the need for wading through floodwater.

- 7.11 As this development is for converting only the ground floor of the existing property there will be limited scope for raising floor levels above those that currently exist.
- 7.12 The risks have been considered for the flooding hazards associated with site, with the following mitigation measures required.
- 7.13 A copy of this report should be included with the 'New Homeowners Handbook' and any potential future purchaser made aware of the mitigation measures included on the site and the long-term maintenance requirement.
- 7.14 The owners of the new properties are to be encouraged to register for 'Floodline' Warnings Direct.
- 7.15 This report should be issued to the Environment Agency via the planning process and confirmation obtained that the mitigation measures including all finished floor levels are acceptable to minimise the risk to life and damage to the development and that drainage conditions are not worsened elsewhere as a result of this development.
- 7.16 The risks have been considered for the flooding hazards associated with site, with the following mitigation measures required in accordance with CLG2007.
- (a) The ground floor levels will remain as existing. It is recommended that the external ground levels to the front and rear walls are lowered to a minimum 150mm below the internal ground floor levels.
  - (b) *Floors* – The ground floor of the existing building is assumed to be of solid construction which provides an effective seal against water rising up through the floor. Solid concrete floors generally suffer less damage than suspended floors and are less expensive and faster to restore following exposure to floodwater.

- (c) *Walls* – new walls should be constructed in brickwork and blockwork at ground floor level. The use of stud walls and plasterboard on the ground floor of the development should be avoided wherever possible as these absorb water and generally need to be removed and rebuilt after a flood event.
  - (d) All external doors are to be of good quality and fitted with suitable seals to limit ingress of water should an extreme flood event occur.
  - (e) There should be no openings such as air bricks below the predicted extreme level to avoid ingress of water should an extreme event occur.
  - (f) *Services* - Boilers should be mounted on a wall above the level that floodwater is likely to reach. Electricity sockets should be located at least one metre above floor (or well above likely flood level) with distribution cables dropping from an upper level. Service meters should also be at least one metre above floor level (or well above likely flood level) and placed in plastic housings.
- Tridax Limited considers that with the inclusion of the above, the site is sustainable in terms of flood risk and that the proposals do not increase the risk to the neighbouring properties.

# **APPENDIX A**

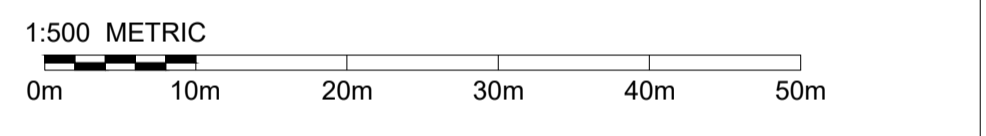
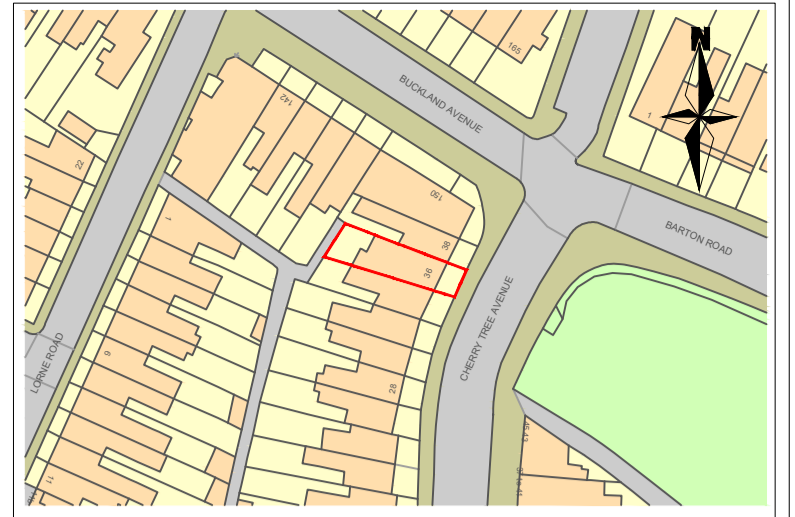
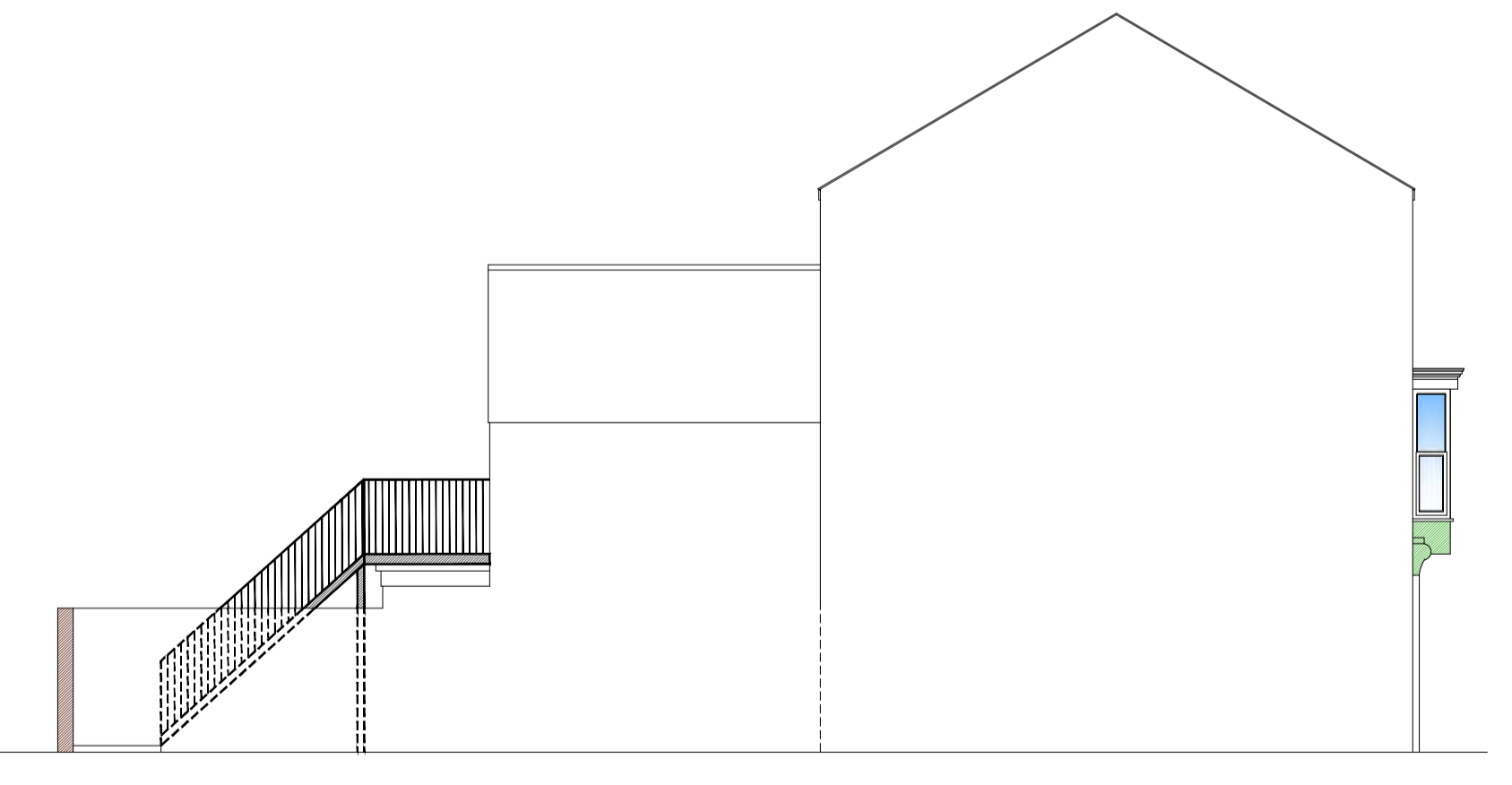
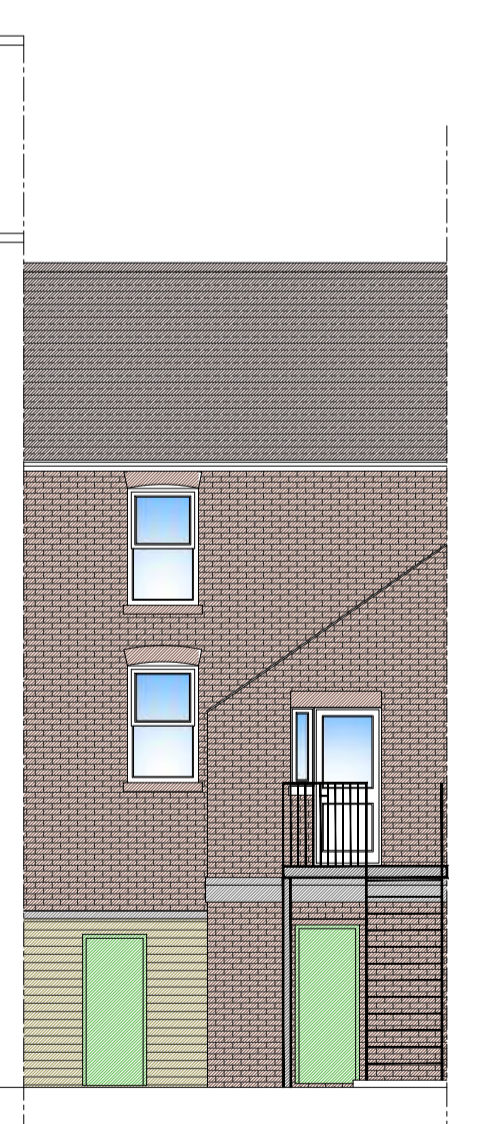
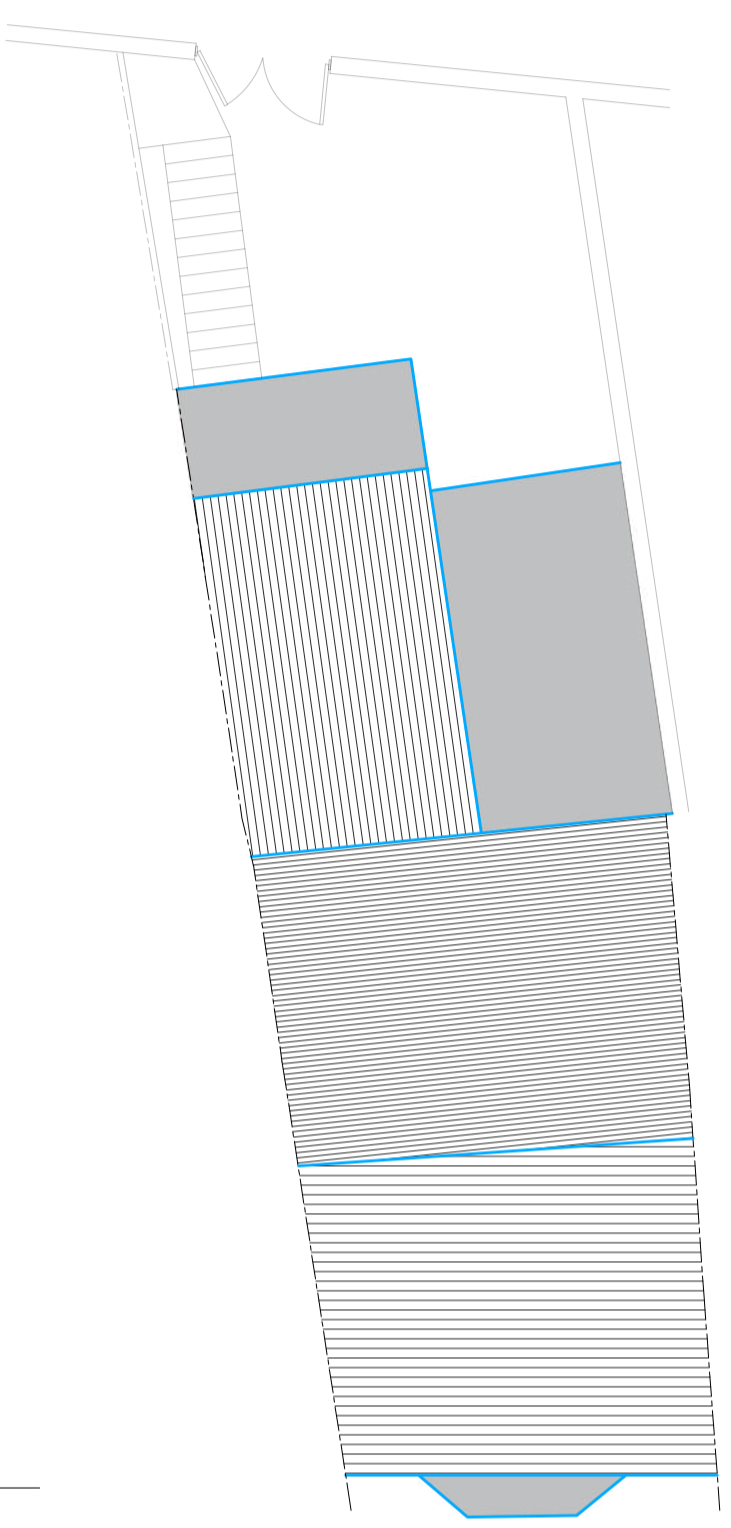
## **Drawings**

EMA-2023-175-01 – Existing Layout Plans & Elevations

EMA-2023-175-02 – Proposed Layout Plans & Elevations

Topographical Survey

1:25 5m  
4m  
3m  
2m  
1m  
0m  
1:25 10m  
1:100 10m  
9m  
8m  
7m  
6m  
5m  
4m  
3m  
2m  
1m  
0m  
1:100 10m  
9m  
8m  
7m  
6m  
5m  
4m  
3m  
2m  
1m  
0m  
1:50 10m  
9m  
8m  
7m  
6m  
5m  
4m  
3m  
2m  
1m  
0m



**Key to hatching**

- Denotes brickwork on plan
- Denotes blockwork on plan
- Denotes studwork on plan

**FOR INFORMATION ONLY  
NOT FOR CONSTRUCTION PURPOSES**

01	First issue to planning	09/01/2023
00	First issue to client	08/01/2023
Rev	Description	Date
<b>NOTES</b>		
1. The Contractor should check all dimensions on site.		
2. It is the Contractors responsibility to ensure compliance with building regulations and current codes of practice.		
3. Drawings cannot take into account any drains or underground works not locatable by visual survey of the site.		
4. Commencement of any building works prior to full building regulation approval is entirely at the clients risk.		
5. <b>IT IS THE CLIENTS RESPONSIBILITY TO CHECK THAT THE EZ-PLANS DRAWINGS THAT ARE ISSUED FOR CONSTRUCTION TO ENSURE THAT THEY SHOW THE CORRECT MATERIAL TYPES / COLOURS BEFORE THE BUILDER PLACES ANY ORDER FOR BUILDING MATERIALS.</b>		

**EZ-PLANS**  
Design Office, Studio 23, Tridax Business Park, Honeywood Parkway,  
White Cliffs Business Park, Whitfield, Dover, Kent, CT16 3QX - Office: 01304 820777  
Email: info@ezplans.co.uk

CLIENT <b>Mohammed Uddin</b>	PROJECT Conversion of ground floor shop to a self contained flat at 36 Cherry Tree Ave, Dover, CT16 2NL
DRAWING Existing layout plans and elevations	SCALES As shown
STATUS <b>FOR INFORMATION</b>	DATE 14/12/2023
	SIZE A1
	Rev 01
	EMA-2023-175-01

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**PROPOSED GROUND FLOOR LAYOUT PLAN**  
Scale 1/50



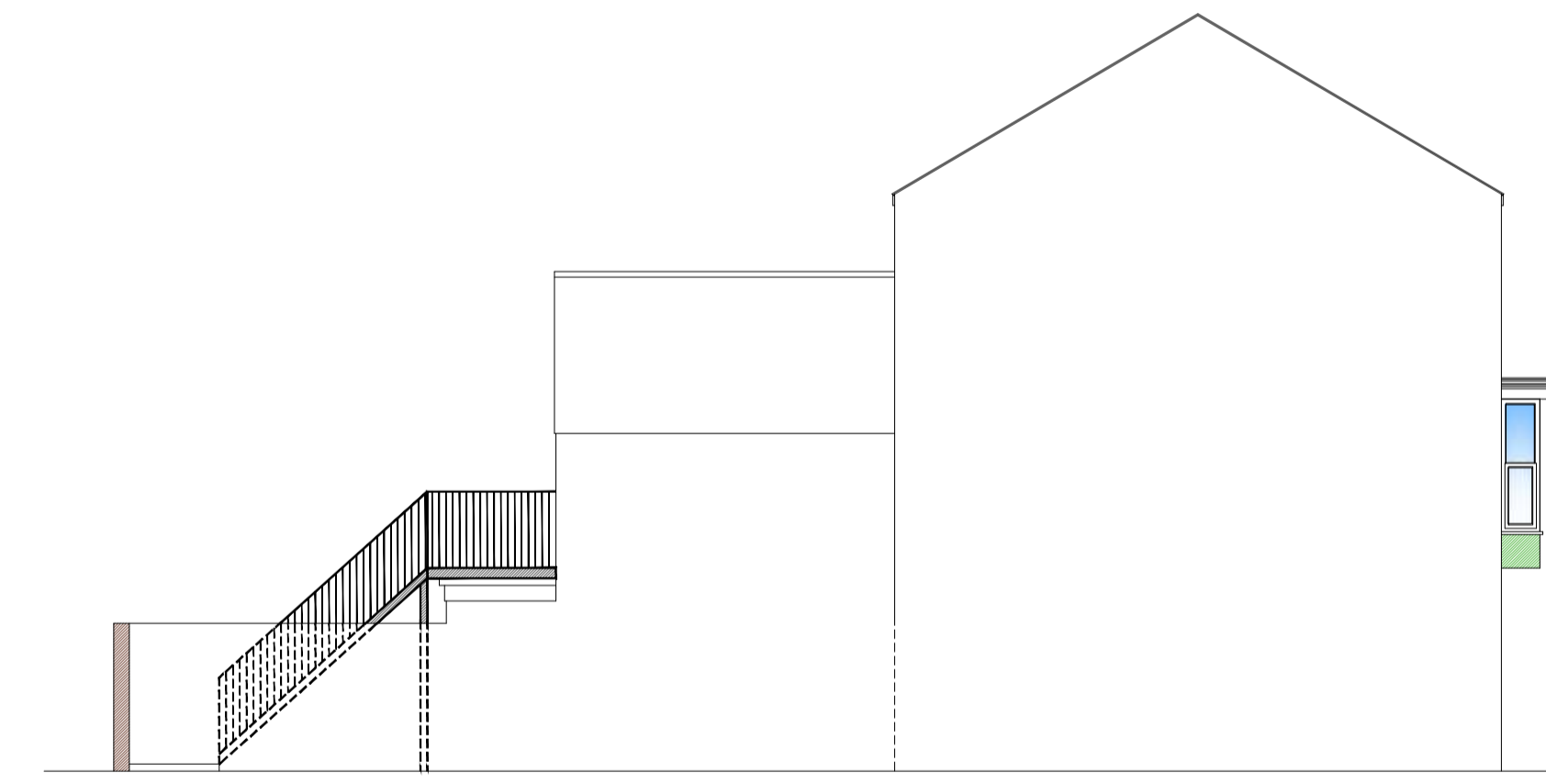
**PROPOSED FRONT ELEVATION**  
Scale 1/100



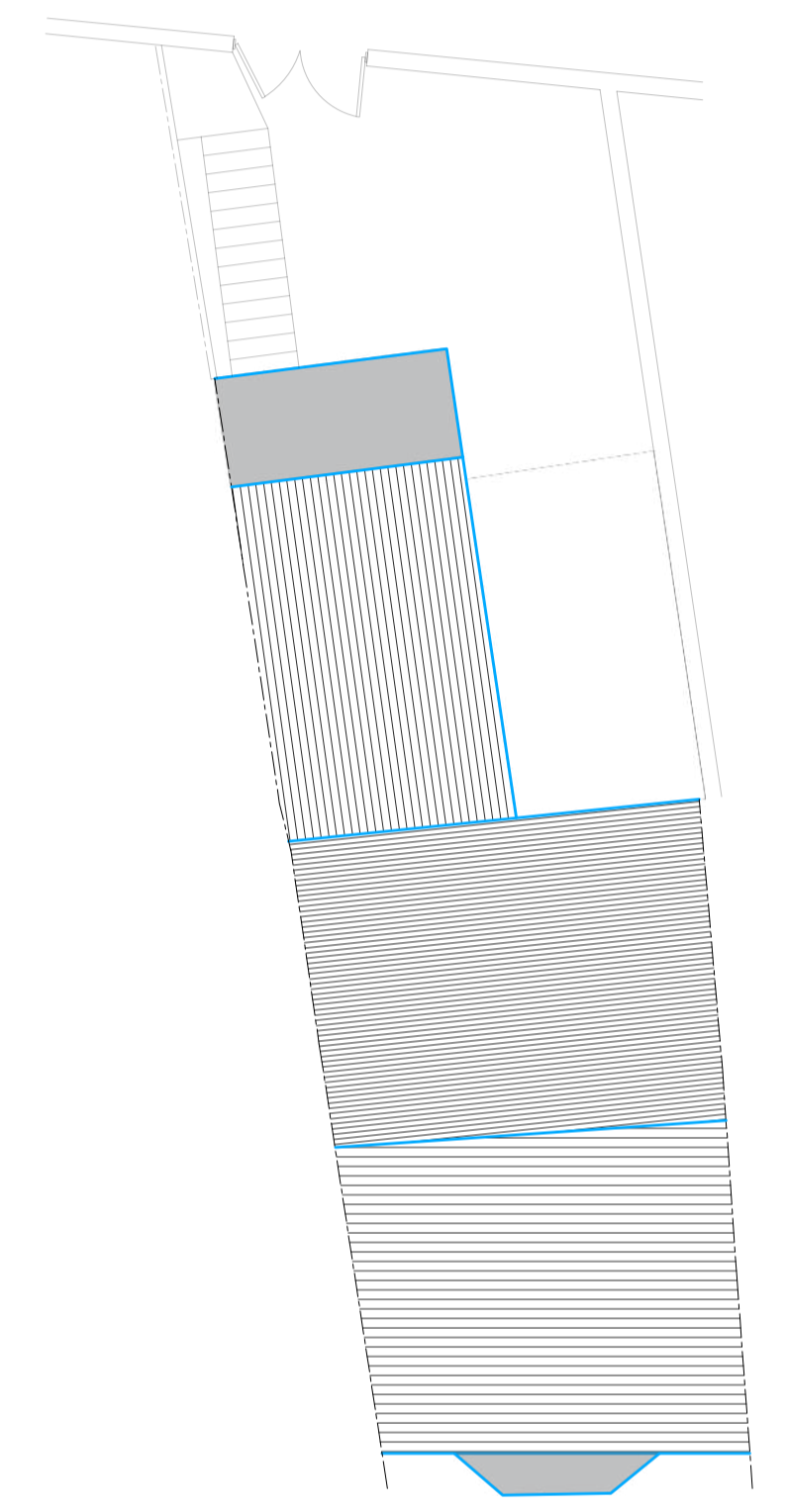
**PROPOSED SIDE ELEVATION - View A**  
Scale 1/100



**PROPOSED REAR ELEVATION**  
Scale 1/100



**PROPOSED SIDE ELEVATION - View B**  
Scale 1/100



**PROPOSED ROOF LAYOUT**  
Scale 1/100

**FOR INFORMATION ONLY  
NOT FOR CONSTRUCTION PURPOSES**

Rev	Description	Date
01	First issue to planning	09/01/2023
00	First issue to client	08/01/2023

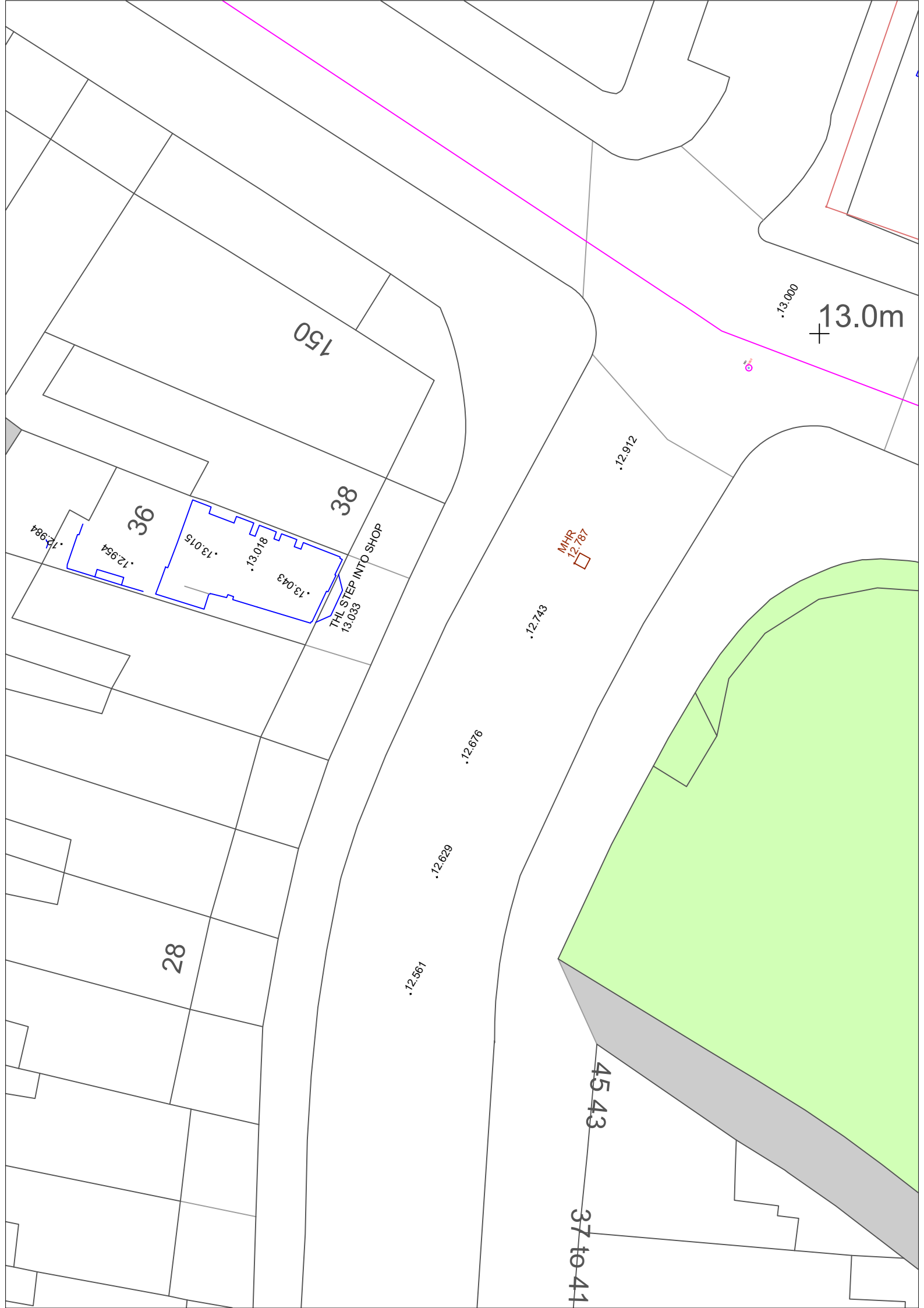
**NOTES**

- The Contractor should check all dimensions on site.
- It is the Contractors responsibility to ensure compliance with building regulations and current codes of practice.
- Drawings cannot take into account any drains or underground works not locatable by visual survey of the site.
- Commencement of any building works prior to full building regulation approval is entirely at the clients risk.
- IT IS THE CLIENTS RESPONSIBILITY TO CHECK THAT THE EZ-PLANS DRAWINGS THAT ARE ISSUED FOR CONSTRUCTION TO ENSURE THAT THEY SHOW THE CORRECT MATERIAL TYPES / COLOURS BEFORE THE BUILDER PLACES ANY ORDER FOR BUILDING MATERIALS.**

Design Office, Studio 23, Tridax Business Park, Honeywood Parkway,  
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Email: [info@ezplans.co.uk](mailto:info@ezplans.co.uk)

CLIENT <b>Mohammed Uddin</b>	PROJECT Conversion of ground floor shop to a self contained flat at 36 Cherry Tree Ave, Dover, CT16 2NL
DRAWING Proposed layout plans and elevations	SCALES As shown
STATUS <b>FOR INFORMATION</b>	DATE 14/12/2023
	SIZE A1
	Dwg No. <b>EMA-2023-175-02</b>
	REV 01

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150

36

38

28

45  
43

37 to 41

13.000  
+ 13.0m

MHR  
12.787

THE STEP INTO SHOP  
13.033

12.954

13.015

13.018

13.043

12.984

12.567

12.629

12.676

12.743

12.912

## **APPENDIX B**

### **Environment Agency Details**

Product Data 4

Flood Prevention Diagram

Product 4 (Detailed Flood Risk) for: 36 Cherry Tree Avenue, Dover, CT16 2NL  
Requested by: Steve Carr  
Reference: KSL 341485 JP  
Date: 18 January 2024

## Contents

- Flood Map Confirmation
- Flood Map Extract
- Model Output Data
- Data Point Location Map
- Modelled Flood Outlines Map
- Defence Details
- Historic Flood Data
- Historic Flood Map
- Use of information for Flood Risk Assessment and updated climate change requirements 2021

The information provided is based on the best data available as of the date of this letter.

You may feel it is appropriate to contact our office at regular intervals, to check whether any amendments/ improvements have been made to the data for this location. Should you contact us again, after a period of time, please quote the above reference in order to help us deal with your query.

Please refer to the [Open Government Licence](#) which explains the permitted use of this information.



## Flood Map Confirmation

### The Flood Map:

Our Flood Map shows the natural floodplain for areas at risk from fluvial and tidal flooding. The floodplain is specifically mapped ignoring the presence and effects of flood defences. Although flood defences reduce the risk of flooding they cannot completely remove that risk as they may be overtopped or breached during a flood event.

The Flood Map shows the probability of a flood of a particular magnitude, or greater, occurring in any given year. This is known as the Annual Exceedance Probability (AEP). Flood Zone 3 indicates areas of land having a 1 in 100 or greater annual probability (1% AEP) of flooding from rivers, or a 1 in 200 or greater annual probability (0.5% AEP) of flooding from the sea. Flood Zone 2 indicates areas of land having up to a 1 in 1000 annual probability (0.1% AEP) of flooding from rivers or the sea. The Flood Map also shows the location of some flood defences.

The Flood Map is intended to act as a guide to indicate the potential risk of flooding. When producing it we use the best data available to us at the time of completion, taking into account historic flooding and local knowledge. The Flood Map is updated on a quarterly basis to account for any amendments required. These amendments are then displayed on the internet at <https://flood-map-for-planning.service.gov.uk/>.

### At this Site:

The Flood Map shows that parts of this site lie within the outline of the 0.1 % (Flood Zone 2) chance of flooding from rivers in any given year.

The Flood Map also shows that this site lies outside the extreme flood outline (0.1%), known as Flood Zone 1.

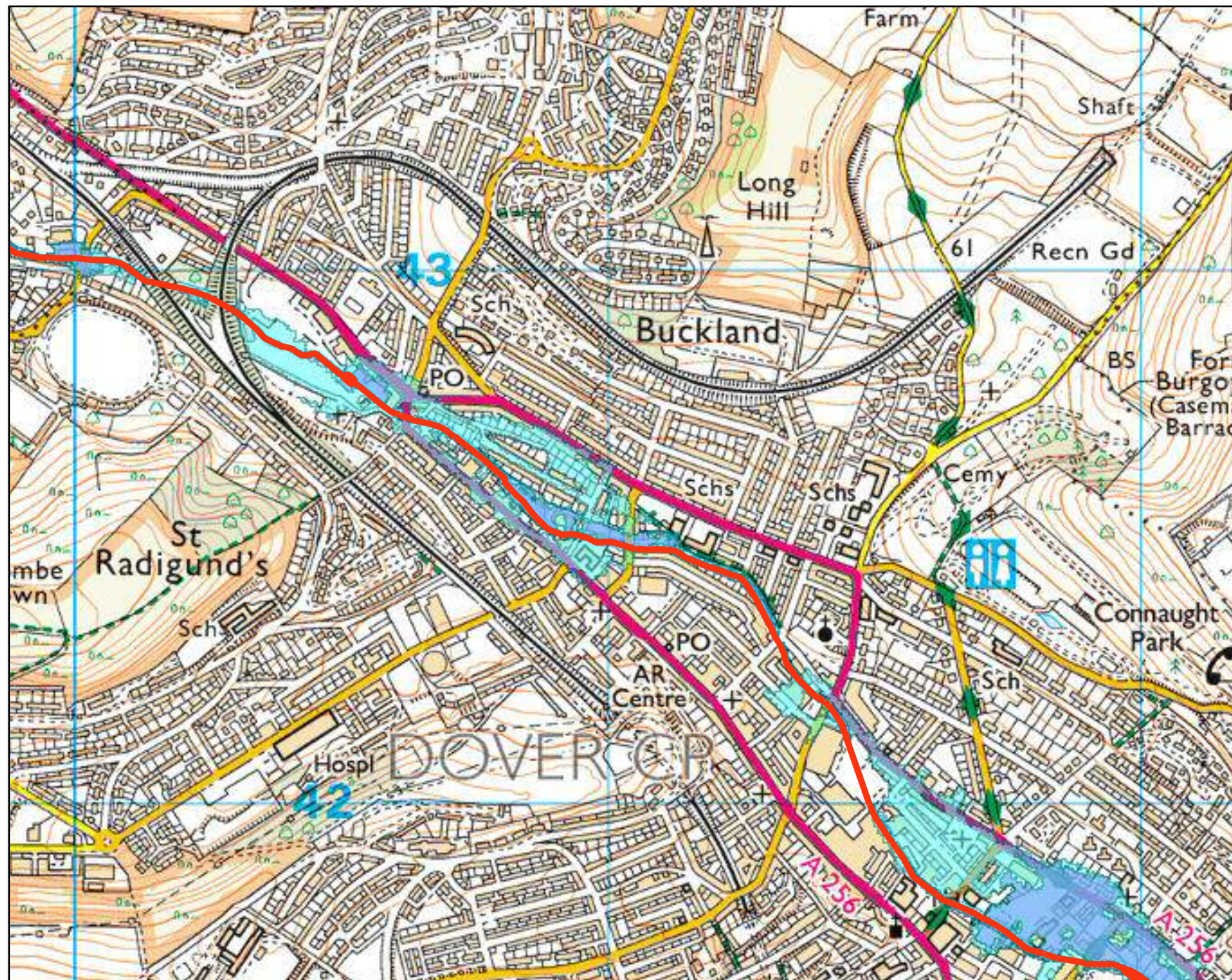
Enclosed is an extract of our Flood Map which shows this information for your area.

### Method of production

The Flood Map at this location has been derived using detailed fluvial modelling of the River Dour, completed by JBA Consulting in 2015.

# Flood Map centred on 36 Cherry Tree Avenue, Dover, CT16 2NL.

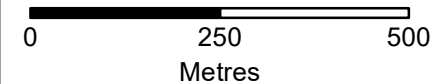
Created 18 January 2024 [Ref: KSL 341485 JP]



## Legend

- Main River
- Flood Defences
- Flood Storage Areas
- Flood Zone 3
- Flood Zone 2

Scale 1:10,000



## Model Output Data

You have requested flood levels and/or depths for various return periods at this location.

### 2D

A 2D TuFLOW model has been used to represent the floodplain as a grid. The flood water levels and/or depths have been calculated for each grid cell. The modelled flood levels / depths presented here are for the closest most appropriate model grid cells. Any additional information you may need to know about the modelling from which they are derived and/or any specific use or health warnings for their use are set out below.

The table below gives fluvial flood depths and levels taken from the 2D model.

A map showing the location of the points from which the data is taken is enclosed. Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

**Data Points Map centred on 36 Cherry Tree Avenue, Dover, CT16 2NL.**  
**Created 18 January 2024 [Ref: KSL 341485 JP]**



**Legend**

 Data Points

Scale 1:350



Ordnance Survey

Table 1: Modelled fluvial flood levels for Annual Exceedance Probability (AEP) events shown (mAOD)

Point ID	National Grid Reference		Modelled Fluvial Flood Levels for Annual Exceedance Probability (AEP) events shown (metres AOD)										
			Undefended										
	Easting	Northing	50% AEP	20% AEP	10% AEP	5% AEP	3.3% AEP	2% AEP	1.3% AEP	1% AEP	1% AEP + CC (20%)	0.4% AEP	0.1% AEP
1	631019	142619	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.54
12	631039	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
15	631045	142566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
17	631038	142565	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.47
18	631012	142564	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.48
19	631029	142561	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.47
20	631047	142559	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Data taken from The River Dour Mapping Study, completed by JBA in 2015.

Climate change (CC) data represents modelled levels with the percentage increase in river flows specified.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

There are no health warnings or additional information for these levels, or the model from which they were produced.

Table 2: Modelled fluvial flood depths for Annual Exceedance Probability (AEP) events shown (m)

Point ID	National Grid Reference		Modelled Fluvial Flood Depths for Annual Exceedance Probability (AEP) events shown (metres)											
	Easting	Northing	Undefended											
			50% AEP	20% AEP	10% AEP	5% AEP	3.3% AEP	2% AEP	1.3% AEP	1% AEP	1% AEP + CC (20%)	0.4% AEP	0.1% AEP	
1	631019	142619	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01
12	631039	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22
15	631045	142566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38
17	631038	142565	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
18	631012	142564	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
19	631029	142561	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04
20	631047	142559	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Data taken from The River Dour Mapping Study, completed by JBA in 2015.

Climate change (CC) data represents modelled depths with the percentage increase in river flows specified.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

There are no health warnings or additional information for these depths, or the model from which they were produced.

Table 3: Modelled Flood Levels accounting for Climate Change

Point ID	National Grid Reference		Modelled Fluvial CC Flood Levels for AEP events shown (metres AOD)				
			Undefended				
	Easting	Northing	1% AEP + CC (30%)	1% AEP + CC (35%)	1% AEP + CC (45%)	1% AEP + CC (50%)	1% AEP + CC (105%)
1	631019	142619	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	12.55
12	631039	142573	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	12.48
15	631045	142566	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	12.48
17	631038	142565	0.00	0.00	0.00	0.00	12.47
18	631012	142564	0.00	0.00	0.00	0.00	12.49
19	631029	142561	0.00	0.00	0.00	0.00	12.48
20	631047	142559	0.00	0.00	0.00	0.00	0.00

Data taken from The River Dour Mapping Study, completed by JBA in 2015 and updated with additional climate change data in 2016.

Climate change (CC) data represents modelled levels with the percentage increase in river flows specified.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

There are no health warnings or additional information for these levels, or the model from which they were produced.

Table 4: Modelled Flood Depths accounting for Climate Change

Point ID	National Grid Reference		Modelled Fluvial CC Flood Depths for AEP events shown (metres)				
			Undefended				
	Easting	Northing	1% AEP + CC (30%)	1% AEP + CC (35%)	1% AEP + CC (45%)	1% AEP + CC (50%)	1% AEP + CC (105%)
1	631019	142619	0.00	0.00	0.00	0.00	0.00
2	631080	142585	0.00	0.00	0.00	0.00	0.00
3	631015	142596	0.00	0.00	0.00	0.00	0.00
4	631031	142593	0.00	0.00	0.00	0.00	0.00
5	631050	142590	0.00	0.00	0.00	0.00	0.00
6	631022	142589	0.00	0.00	0.00	0.00	0.00
7	631041	142585	0.00	0.00	0.00	0.00	0.00
8	631047	142578	0.00	0.00	0.00	0.00	0.00
9	631030	142581	0.00	0.00	0.00	0.00	0.00
10	631013	142583	0.00	0.00	0.00	0.00	0.00
11	631020	142578	0.00	0.00	0.00	0.00	0.01
12	631039	142573	0.00	0.00	0.00	0.00	0.00
13	631013	142573	0.00	0.00	0.00	0.00	0.00
14	631027	142571	0.00	0.00	0.00	0.00	0.23
15	631045	142566	0.00	0.00	0.00	0.00	0.00
16	631019	142569	0.00	0.00	0.00	0.00	0.39
17	631038	142565	0.00	0.00	0.00	0.00	0.07
18	631012	142564	0.00	0.00	0.00	0.00	0.17
19	631029	142561	0.00	0.00	0.00	0.00	0.05
20	631047	142559	0.00	0.00	0.00	0.00	0.00

Data taken from The River Dour Mapping Study, completed by JBA in 2015 and updated with additional climate change data in 2016.

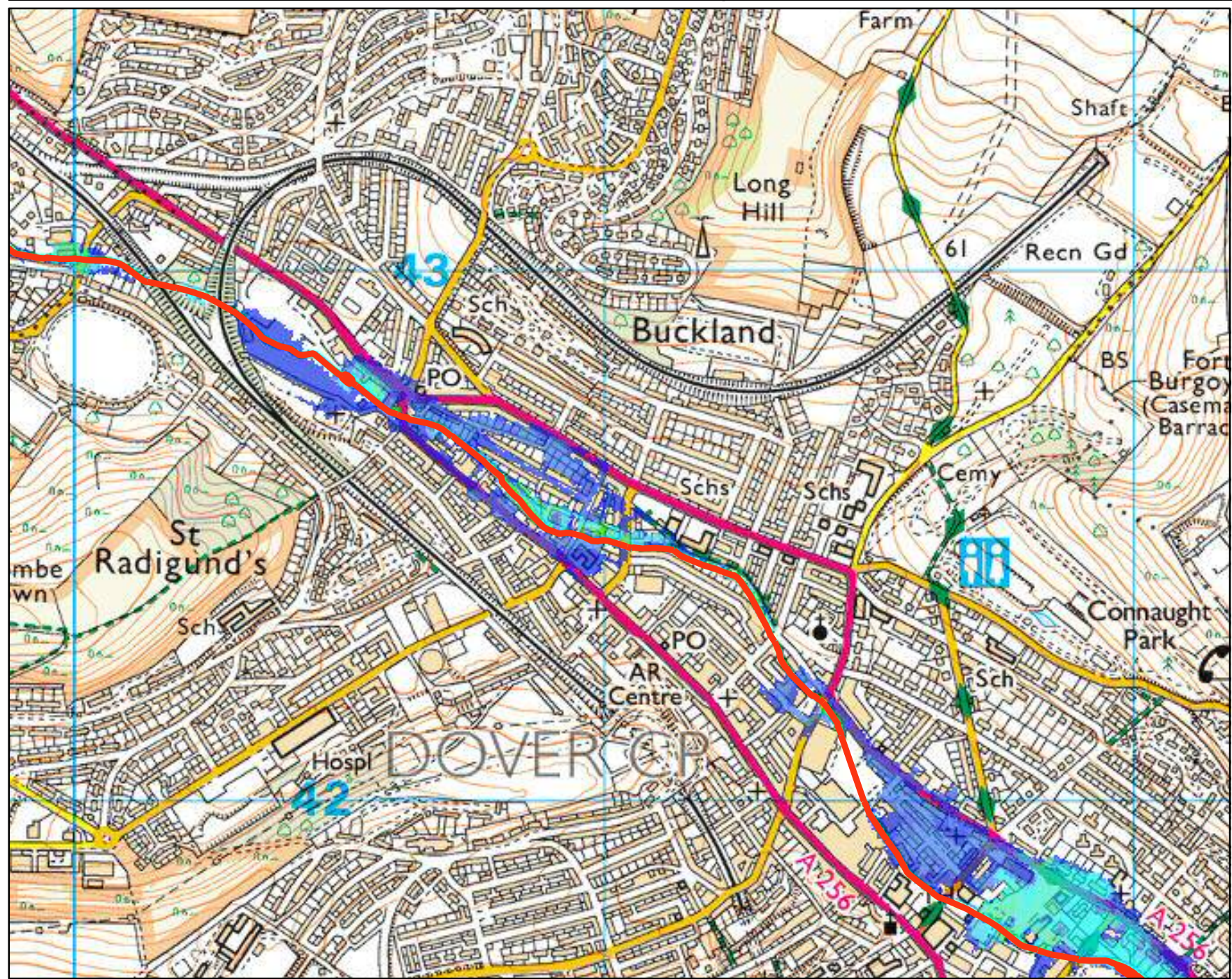
Climate change (CC) data represents modelled depths with the percentage increase in river flows specified.

Values of 0.00 indicate locations at which the selected points lie outside of a particular modelled flood extent.

There are no health warnings or additional information for these depths, or the model from which they were produced.



# Undefended Fluvial Flood Extents Map centred on 36 Cherry Tree Avenue, Dover, CT16 2NL. Created 18 January 2024 [Ref: KSL 341485 JP]



**Legend**

- Main River

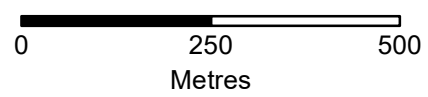
**Undefended Fluvial Flood Extents**

Id	Color	Description
50% AEP	Dark Green	50% AEP
20% AEP	Medium Green	20% AEP
10% AEP	Light Green	10% AEP
5% AEP	Yellow-Green	5% AEP
3.33% AEP	Light Cyan	3.33% AEP
2% AEP	Light Blue	2% AEP
1.3% AEP	Medium Blue	1.3% AEP
1% AEP	Blue	1% AEP
1% AEP + CC (20%)	Dark Blue	1% AEP + CC (20%)
0.4% AEP	Very Dark Blue	0.4% AEP
0.1% AEP	Black	0.1% AEP

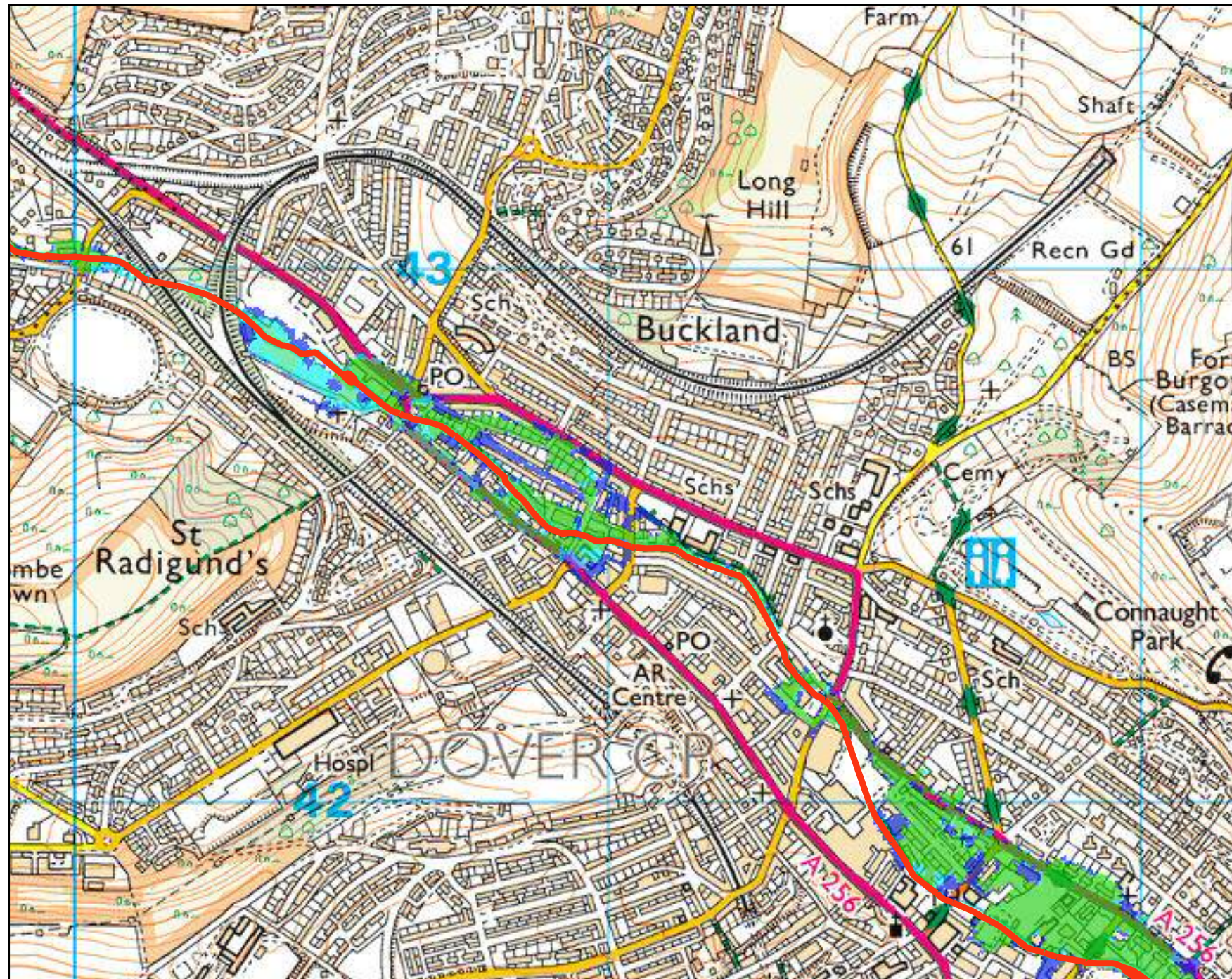
Annual Exceedance Probability (AEP). The probability of a flood of a particular magnitude, or greater, occurring in any given year.

Climate Change (CC) extents based on the percentage increase in river flows specified.

Scale 1:10,000



# Undefended Climate Change Extents Map centred on 36 Cherry Tree Avenue, Dover, CT16 2NL. Created 18 January 2024 [Ref: KSL 341485 JP]



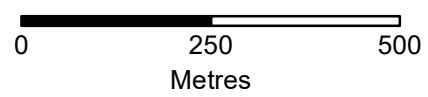
## Legend

- Main River
- Undefended Climate Change Extents Combined**
- Id**
- 1% AEP + CC (30%)
- 1% AEP + CC (35%)
- 1% AEP + CC (45%)
- 1% AEP + CC (50%)
- 1% AEP + CC (105%)

Annual Exceedance Probability (AEP). The probability of a flood of a particular magnitude, or greater, occurring in any given year.

Climate Change (CC) extents based on the percentage increase in river flows specified.

Scale 1:10,000



## Defence Details

### Dover Harbour

Dover Harbour Board is responsible for Dover Harbour. The defences consist of harbour arms, jetties, sea walls, groynes and shingle beach. The majority of the Dover frontage is enclosed by the outer harbour breakwaters. The Wellington Dock gates are opened 1.5 hours before high tide and are closed 1.5 hours after high tide. There is no flap on the outfall and therefore the River Dour is tidally influenced. The Port's Dover Western Docks Revival (DWDR) is an ongoing construction project including the development of Wellington Dock.

### **Areas Benefiting from Flood Defences**

The Environment Agency has taken the decision to retire this dataset and remove it from the Flood Map for Planning portal. This is because we have determined that it no longer meets the customer needs and creates a false sense of security for users.

To understand the long-term risk of flooding to an area, you can use the [Check Your Long Term Flood Risk portal](#): this will provide an understanding of flood risk from rivers and sea, taking into account the presence and condition of defences, and other sources of flood risk such as from surface water and reservoirs.

## Historic Flood Data

We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this property. However, please be aware that this does not necessarily mean that flooding has not occurred here in the past, as our records are not comprehensive.

We would therefore advise that you make further enquiries locally with specific reference to flooding at this location. You should consider contacting the relevant Local Planning Authority and/or water/sewerage undertaker for the area.

Please be aware that flooding can come from different sources. Examples of these are:

- from rivers or the sea
- surface water (i.e. rainwater flowing over or accumulating on the ground before it is able to enter rivers or the drainage system)
- overflowing or backing up of sewer or drainage systems which have been overwhelmed
- groundwater rising up from underground aquifers

Currently the Environment Agency can only supply flood risk data relating to the chance of flooding from rivers or the sea. However you should be aware that in recent years, there has been an increase in flood damage caused by surface water flooding or drainage systems that have been overwhelmed.

## Additional Information

### Information Warning - OS background mapping

The mapping of features provided as a background in this product is © Ordnance Survey. It is provided to give context to this product. The Open Government Licence does not apply to this background mapping. You are granted a non-exclusive, royalty free, revocable licence solely to view the Licensed Data for non-commercial purposes for the period during which the Environment Agency makes it available. You are not permitted to copy, sub-license, distribute, sell or otherwise make available the Licensed Data to third parties in any form. Third party rights to enforce the terms of this licence shall be reserved to OS.

### Planning advice and guidance

The Environment Agency are keen to work with partners to enable development which is resilient to flooding for its lifetime and provides wider benefits to communities. If you have requested this information to help inform a development proposal, then we recommend engaging with us as early as possible by using the pre-application form available from our website:

<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Complete the form in the link and email back to [kslplanning@environment-agency.gov.uk](mailto:kslplanning@environment-agency.gov.uk).

We recognise the value of early engagement in development planning decisions. This allows complex issues to be discussed, innovative solutions to be developed that both enables new development and protects existing communities. Such engagement can often avoid delays in the planning process following planning application submission, by reaching agreements up-front. We offer a charged pre-application advice service for applicants who wish to discuss a development proposal.

We can also provide a preliminary opinion for free which will identify environmental constraints related to our responsibilities including flooding, waste, land contamination, water quality, biodiversity, navigation, pollution, water resources, foul drainage or Environmental Impact Assessment.

## Flood Risk Assessments Guidance

### Flood risk standing advice for applicants

In preparing your planning application submission, you should refer to the Environment Agency's Flood Risk Standing Advice and the Planning Practice Guidance for information about what flood risk assessment is needed for new development in the different Flood Zones. This information can be accessed via:

<https://www.gov.uk/flood-risk-assessment-standing-advice>

<http://planningguidance.planningportal.gov.uk/>

<https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications>

<https://www.gov.uk/guidance/flood-risk-and-coastal-change>

You should also consult the Strategic Flood Risk Assessment and flood risk local plan policies produced by your local planning authority.

You should note that:

1. Information supplied by the Environment Agency may be used to assist in producing a Flood Risk Assessment where one is required, but does not constitute such an assessment on its own.
2. This information covers flood risk from main rivers and the sea, and you will need to consider other potential sources of flooding, such as groundwater or overland runoff. You should discuss surface water management with your Lead Local Flood Authority.
3. Where a planning application requires a FRA and this is not submitted or deficient, the Environment Agency may well raise an objection due to insufficient information

## Updated climate change requirements for flood risk assessments

On 20/07/2021 the 'Flood risk assessments: climate change allowances' were updated and published on gov.uk. You can view the updated allowances at ['Flood risk assessments: climate change allowances'](#).

The data provided in this product **does not** include the new allowances. You will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding. The Environment Agency will incorporate the new allowances into future modelling studies. It remains the applicant's responsibility to demonstrate through their proposals and flood risk assessments that new development will be safe in flood risk terms for its lifetime.

### Surface Water

We have provided two national Surface Water maps, under our Strategic Overview for flooding, to your Lead Local Flood Authority who are responsible for local flood risk (i.e. surface runoff, ground water and ordinary watercourse), which alongside their existing local information will help them in determining what best represents surface water flood risk in your area.

Your Lead Local Flood Authority have reviewed these and determined what it believes best represents surface water flood risk. You should therefore contact this authority so they can provide you with the most up to date information about surface water flood risk in your area.

You may also wish to consider contacting the appropriate relevant Local Planning Authority and/or water/sewerage undertaker for the area. They may be able to provide some knowledge on the risk of flooding from other sources. We are working with these organisations to improve knowledge and understanding of surface water flooding.

**If you live in an area that is at risk of flooding, there are things you can do to reduce the damage that a flood can do to your home. The illustration below shows some examples.**

### Electrical sockets

Raising electrical sockets, fuse boxes and associated wiring to at least 1.5 metres above ground floor level will limit the risk of them being damaged by water during a flood. You may be able to use them again once the water has receded and the electricity supply is restored. If rewiring, bring cables down the wall from the top to the raised socket so that cabling doesn't get affected. Controls and ventilation systems should also be well above floor level.

### TV and hi-fi

Mount your TV or hi-fi and speakers on the wall.

### Walls

Use lime-based plaster instead of gypsum on walls.

### Flood sacks

These are a lighter, modern version of sandbags. The sacks need to be soaked in water so they expand, then placed around the entrances to your home to protect against flood water. If they have not been in contact with contaminated water, they can be left to dry and shrink and can be reused. They take up little storage and can be cost-effective.

### Doors and windows

Install synthetic or waxed window frames and doors.

### Kitchen units and appliances

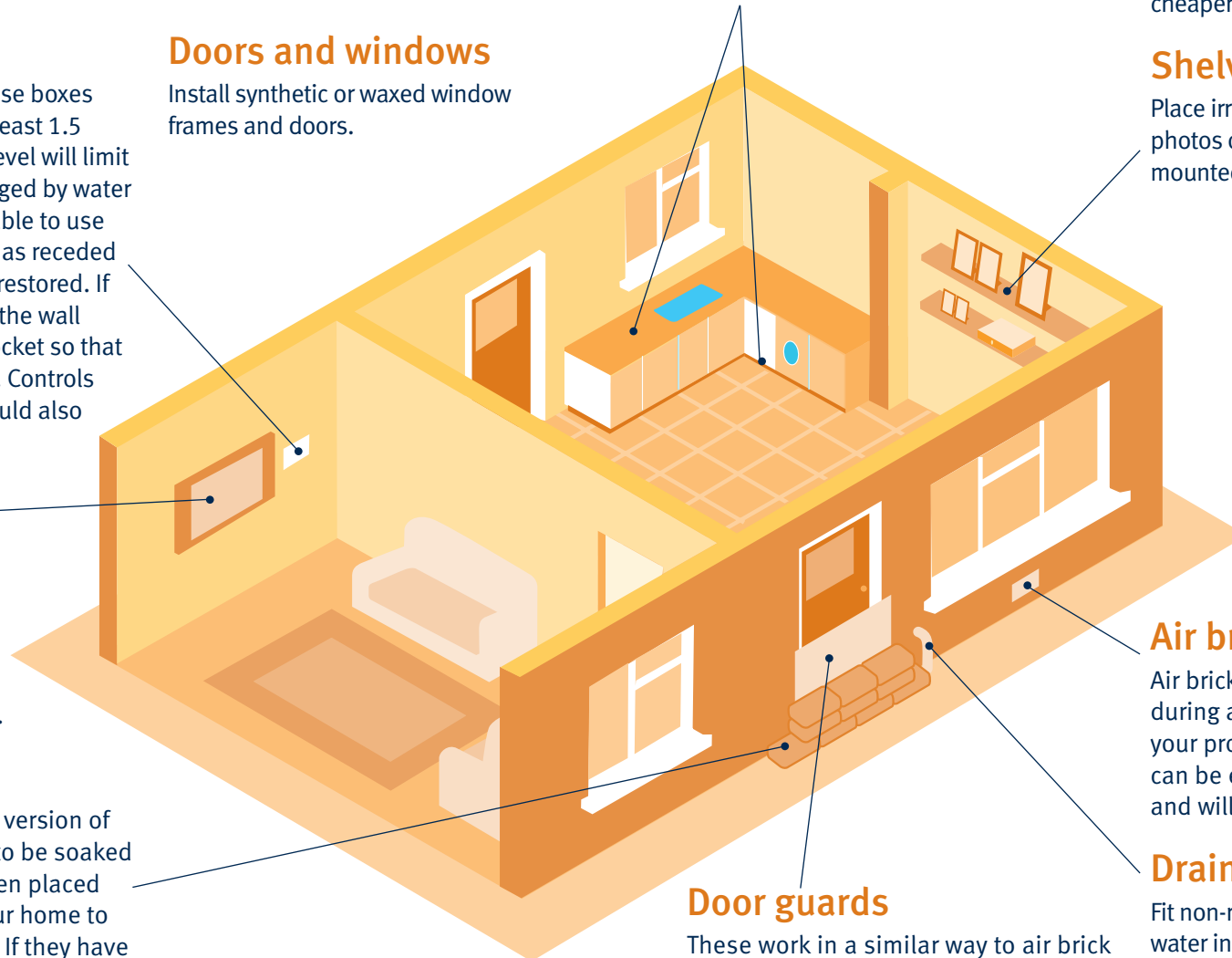
Fit stainless steel, plastic or solid wood kitchen units rather than chipboard. White goods such as fridges should be raised on plinths.

### Flooring

Lay ceramic tiles or rugs on your ground floor rather than carpets. Rugs can easily be removed and placed out of reach. Non-carpeted floors can be easier to clean once the water has subsided and are cheaper to replace.

### Shelving

Place irreplaceable items, such as family photos or treasured possessions, on high mounted shelves.



### Air brick covers

Air bricks are used for ventilation, but during a flood, they can let water into your property. The covers are airtight, can be easily attached to the air bricks and will prevent water entering.

### Drains and pipes

Fit non-return valves to all drains and water inlet pipes.

### Door guards

These work in a similar way to air brick covers but on a larger scale. They can be placed across the bottom of your external doors to hold back low levels of water.