



**20 Coldicutt Street
Caversham
Reading
RG4 8DU**

Flood Risk Assessment

Prepared for: The Keen Partnership

Project No: TC26002
Date: March 2026

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Revision	Amendments	By	Date
P01	Preliminary issue	Graham Taylor (IEng MICE)	03.02.26
P01	Planning issue	Graham Taylor (IEng MICE)	06.03.26

1.0 Introduction

- 1.1 Taylor Consulting Engineers have been commissioned to undertake a Flood Risk Assessment (FRA) to assess the flood risk to the change of use application for 20 Coldicutt Street, Caversham Reading.
- 1.2 This Flood Risk Assessment has been produced using the relevant data and flood maps available at the time of the report. Any subsequently updated flood data and maps would need to be assessed against the site to ensure there is no change in the flood risk to the assessed site.
- 1.3 The site is indicated as being located within Flood Zone 3 based on the online flood maps.

Zone 3 – Land having greater than 1% annual probability of flooding in any year.

Zone 2 – Land having between 1% and 0.1% annual probability of flooding in any year.

Zone 1 – Land having less than 0.1% annual probability of flooding in any year.

The contents of this FRA describe the assessment of the proposals and the implications of the proposed development on flood risk. The FRA has been prepared following guidance provided in the National Planning Policy Framework and the Planning Practice Guidance to the National Planning Policy Framework.

A planning application is being submitted and this assessment seeks to provide the level of detail necessary to demonstrate that the potential effects of flood risk (to the proposal) have been addressed by identifying the source and probability of flooding to the application site, including effects of climate change;

- Determining the consequences of flooding to and from the proposed development proposal and advising on the how this will be managed, if necessary; and
- Demonstrating the flood risk issues described in this assessment are compliant with the relevant guidance.

The scope of data available is summarised in this report and in the associated plans (attached within appendices). An assessment of areas potentially at risk from flooding has been undertaken and the proposed building has been examined in relation to their potential to increase flood risk both on and off site. This FRA supports the construction of the proposed buildings to demonstrate that flood risk has been given material consideration throughout the development process and the proposed building should not be restricted at this site due to flood risk.

2.0 Policy & Guidance

2.1 Flood & Water Management Act

Combined with the Flood Risk Regulations (which enact the EU Floods Directive in England and Wales) the Act places significantly greater responsibility on Local Authorities to manage and lead on local flooding issues. The Act and The Regulations together raise the requirements and targets Local Authorities need to meet, including:

- Playing an active role leading Flood Risk Management;
- Development of Local Flood Risk Management Strategies (LFRMS);
- Implementing requirements of Flood and Water Management legislation;
- Preparation of preliminary flood risk assessments and flood risk management plans; and
- Development and implementation of drainage and flooding management strategies;

The Flood and Water Management Act also clarifies three key areas that influence development:

- Sustainable Drainage Systems (SuDS) - the Act makes provision for a national standard to be prepared on SuDS, and developers will be required to obtain local authority approval for SuDS in accordance with the standards, likely with conditions;
- Flood risk management structures - the Act enables the EA and local authorities to designate structures such as flood defences or embankments owned by third parties for protection if they affect flooding or coastal erosion. A developer or landowner will not be able to alter, remove or replace a designated structure or feature without first obtaining consent; and
- Permitted flooding of third-party land - The EA and local authorities have the power to carry out work which may cause flooding to third party land where the works are deemed to be in the interest of nature conservation, the preservation of cultural heritage or people's enjoyment of the environment or of cultural heritage

2.2 National Planning Policy Framework (NPPF)

In determining an approach for the assessment of flood risk for the proposal there is a need to review the policy context. Government Guidance requires that consideration be given to flood risk in the planning process. The National Planning Policy Framework outlines the national policy on development and flood risk assessment.

The Framework states that the inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere.

The essence of NPPF is that:

- Local Plans should be supported by Strategic Flood Risk Assessment and develop policies to manage flood risk from all sources, taking advice from the

Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards;

- Policies in development plans should outline the consideration, which will be given to flood issues, recognising the uncertainties that are inherent in the prediction of flooding and that flood risk is expected to increase as a result of climate change;
- Planning authorities should apply the precautionary principle to the issue of flood risk, using a risk-based search sequence to avoid such risk where possible and managing it elsewhere;
- The vulnerability of a proposed land use should be considered when assessing flood risk;
- Use opportunities offered by new developments to reduce the causes and impacts of flooding;
- Planning authorities should recognise the importance of functional floodplains, where water flows or is held at times of flood and avoid inappropriate development on undeveloped and undefended floodplains; and
- The concept of Flood Risk Reduction, particularly in circumstances where development has been sanctioned on the basis of the “Exception Test”.

2.3 Planning Practice Guidance

The Planning Practice Guidance provides additional guidance to local planning authorities to ensure the effective implementation of the planning policy set out in the National Planning Policy Framework on development in areas at risk of flooding.

The document provides supporting information on:

- The application of the sequential approach and Sequential and Exception Tests;
- Measures to reduce flood risk to acceptable levels;
- How to manage residual risks; and
- Guidance on how to take climate change into account

2.4 The Strategic Flood Risk Assessment (SFRA)

The SFRA is a planning tool that will assist the councils in their selection and development of sustainable site allocations away from vulnerable flood risk areas. The assessment focuses on the existing site allocations, but also sets out the procedure to be followed when assessing additional sites for development in the future. The SFRA will assist the council to make the spatial planning decisions required to inform the forthcoming Local Development Frameworks (LDF).

Having reviewed the SFRA, the site is not specifically mentioned, although the following summary of flood risks for this area below.

Fluvial flooding from the River Thames (primary risk)

Lower Caversham sits in an area the SFRA describes as at risk from Thames fluvial flooding, influenced by the Thames system around Caversham (weir/sluice) and proximity to the Thames–Kennet confluence.

Surface water (intense rainfall / runoff routing along roads)

The SFRA highlights surface-water flow routes in Caversham/Lowe Caversham that often track along main roads and create ponding. This matters in urban streets where gullies can surcharge or where topography concentrates runoff.

Groundwater contribution in prolonged wet periods (chalk areas)

The SFRA flags chalk-dominated parts of Reading (including Lower Caversham) as potentially prone to higher groundwater during wet periods, which can exacerbate flooding and slow drainage away after river levels drop.

3.0 Development Site Details

3.1 Development Description & Location

The site is located at grid reference SU 72185 74483. The site is located north of the River Thames within a predominantly residential area.

The site comprises an existing terraced building used as a butchery at ground floor with residential use above. Access is via Coldicutt Street onto Gosbrook Road



Figure 1 – Location Plan

3.2 Vulnerability Classification

The site is indicated as being located within Flood Zone 3 on the online flood maps.

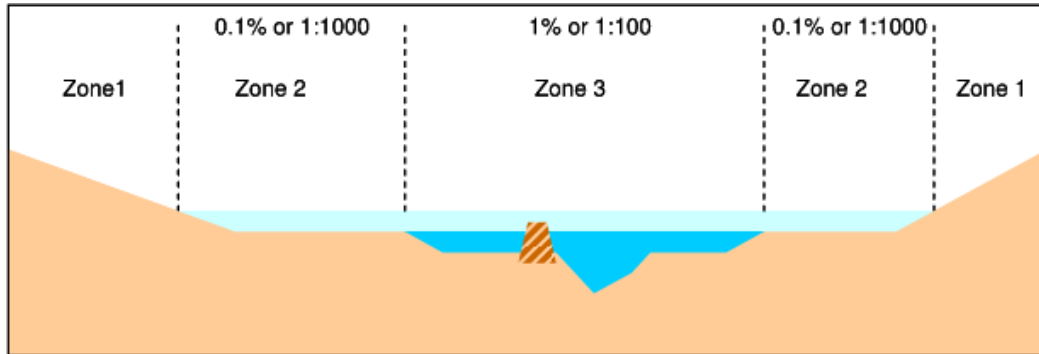


Figure 2 - Flood Zones

The Environment Agency's flood zone map is provided in Appendix C.

The building is a commercial building at ground floor and residential use above and therefore is considered "more vulnerable" based on the Environment Agency Flood Risk Assessments: Climate Change Allowances Guidance, as the most vulnerable use needs to be considered.

The proposed conversion to a residential use would remain a "more vulnerable" classification.

A topographical survey to OSBM confirms the following site levels:

The existing building levels:

Ground floor - 37.97m AOD

The levels outside the building on Coldicutt Street footpath are at 37.61m rising towards Gosbrook Road to 37.79m.

The road levels outside the building are 37.46m and rise towards the north to 37.62m at Gosbrook Road.

3.3 Site Drainage

The existing drainage is understood to discharge into the public sewer systems in the area.

The topographical survey can be found in Appendix B.

4.0 Flood Probability and Hazard

4.1 Catchment Background

The site lies within the South Chilterns Operational Catchment which is part of the wider Thames Catchment.

DEFRA Catchment data states “ *The South Chilterns operational catchment includes part of the Chilterns Area of Outstanding Natural Beauty (AONB). It has three distinct geographical areas: in the West is the River Pang, a chalk stream in a rural area flowing through Pangbourne; the navigable River Thames flows through the middle of the catchment between Wallingford and Cookham; and in the east is the River Wye, an urban chalk stream rising near High Wycombe.*”

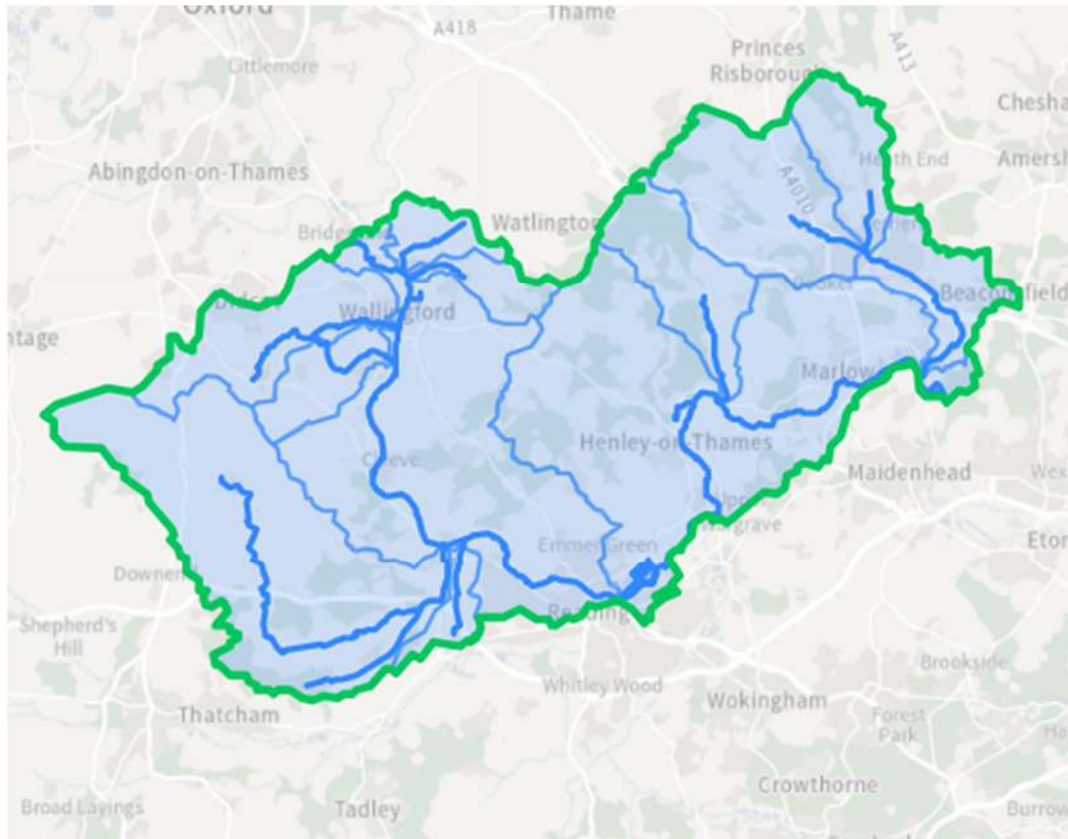


Figure 3 – Chilterns South Catchment, Source Environment Agency

4.2 Local Geology

BGS Geology maps and boreholes indicate that the site is underlain by silt over Chalk formation.

4.3 Groundwater Source Protection Zone

The site lies outside the groundwater Source Protection Zones (SPZ) therefore no additional measures for the protection of the groundwater will be required.

4.4 Historical Flooding

A review of historic flooding was carried out, and the area had not suffered from any flooding apart from the 1947 flood event which followed a prolonged period of severe winter conditions across the Thames catchment. Rapid snowmelt combined with sustained rainfall led to exceptionally high and prolonged flows in the River Thames, resulting in widespread fluvial flooding.

Since the 1947 flood, flood risk along the River Thames has been significantly reduced through a combination of catchment-wide river management, flood defences, and active operational control. The Thames is now regulated by an extensive system of locks, weirs, sluices, and flood storage areas, which are operated to manage water levels and attenuate peak flows during high-flow events.

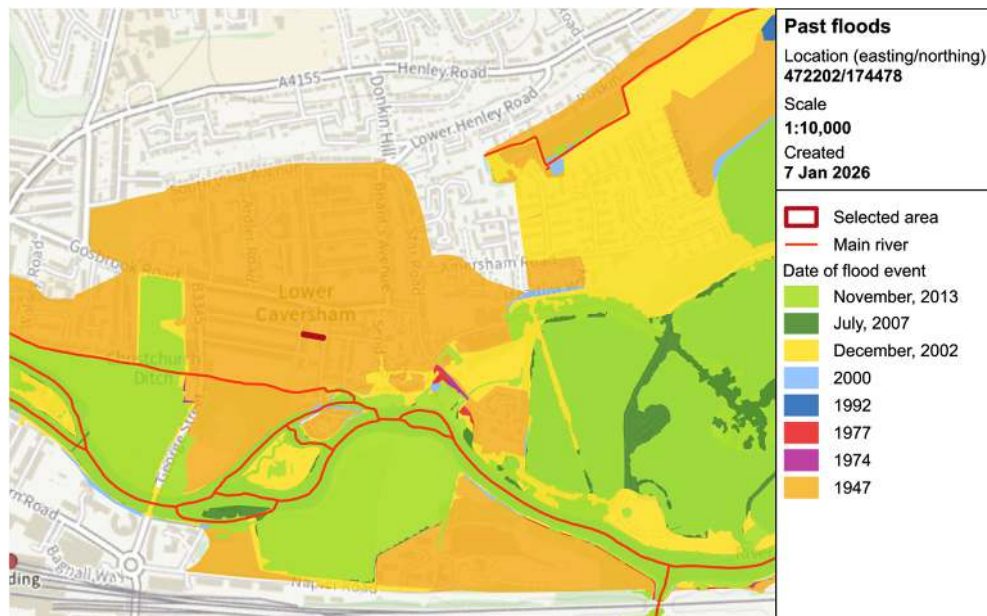


Figure 4 – Historic Flooding

4.5 Flood Zone

Flood zones describe the extent of flooding that would occur on the basis that no flood defences were in existence. They also describe the extent to which land under scrutiny is afforded protection by the presence of defences. The definition of Flood Zones is provided in the EA Flood risk assessments: climate change allowances.

4.6 Sources of Flooding – Flood Risk

The NPPF describes potential sources of flooding. It is necessary to consider the risk of flooding from all sources within an FRA. This section provides a review of flooding from land, sewers, groundwater and artificial sources, in addition to rivers.

4.7 Fluvial Flood Risk

A review of the Environment Agency flood mapping indicates that the area is in flood zone 3 (high risk of flooding).

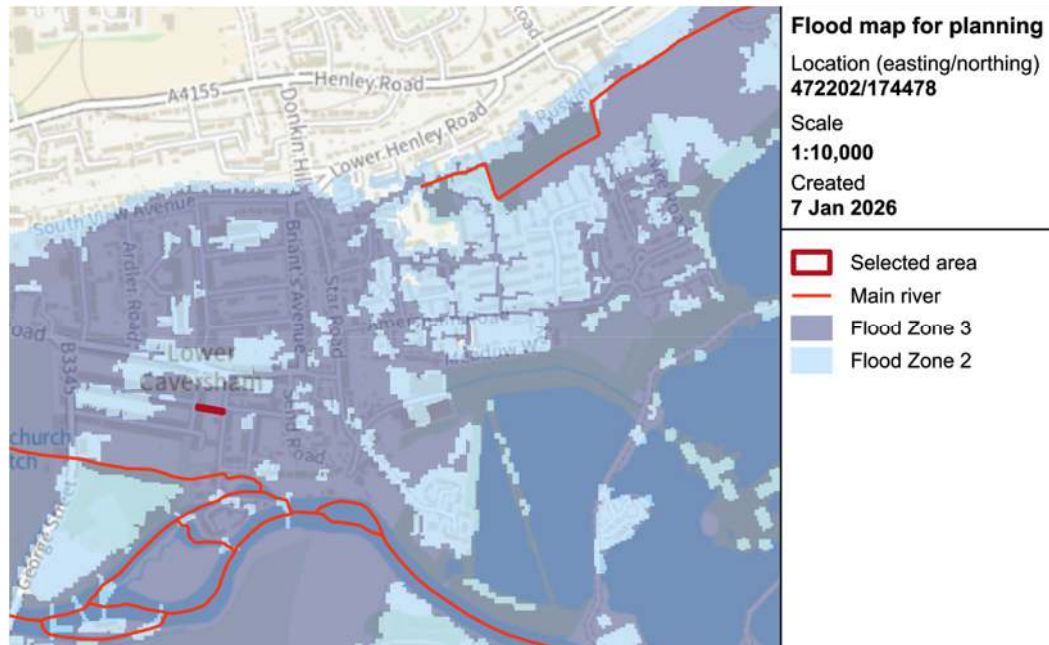


Figure 5 - Environment Agency Fluvial Flood Map

The flood data provided by the Environment Agency has confirmed the following flood levels for the closest flood point 15:

Flood Event	Flood Level
1%AEP	37.66
1%AEP+25%cc	37.85
1%AEP+35%cc	37.92
0.1%AEP	37.96

The building ground floor is located at 37.97m AOD, which is above the 0.1% AEP and the 1%AEP +35% climate change flood level.

The ground floor is therefore at a low risk of fluvial flooding.

4.8 Flood Risk from Surface Water & Overland Flow

Flooding from land can be caused by rainfall being unable to infiltrate into the natural ground or enter the drainage systems due to blockage, or flows being above design capacity. This can then result in (temporary) localised ponding and flooding. The natural topography and location of buildings/structures can influence the direction and depth of water flowing off impermeable and permeable surfaces.

The Environment Agency surface water flood maps show that the existing property is outside the areas at risk of surface water flooding, including the 1 in 100 annual likelihood of surface water flooding.



Figure 6 – Environment Agency Surface water flood map

Based on the above, it is considered that the building is at a low risk of surface water and overland flow flooding.

4.9 Flood Risk from Groundwater

The SFRA states BGS mapping shows that the geology of Reading is characterised by distinct formations across different regions. In the north, the Seaford Chalk Formation and Newhaven Chalk Formation dominate, comprising primarily of chalk. This encompasses the following areas; New Town, Lower Caversham, Hemdean Bottom, Emmer Green and Caversham Heights. These chalky formations, due to their high groundwater recharge, can potentially lead to high groundwater levels and an increased risk of groundwater flooding during wet periods.

The ground conditions in the area are significant depth of silts over chalk formation. The groundwater in this area will be linked to the fluvial water levels, with rises in fluvial levels causing groundwater levels to rise.

The existing building's ground floor is higher than the surrounding land; therefore, the risk of groundwater flooding to the ground floor is considered low, and the fluvial flood level would take precedence.

4.10 Flood Risk from Sewers

Surface water flooding as a result of sewer blockages, failures or insufficient capacity has the potential to contribute to significant flood risk in urban areas. This is due to the rapid runoff rates associated with urban land use and the volume of water that flows into the sewer systems in relatively short periods of time.

The SFRA states “Sewer flooding often occurs because of an existing drainage system having insufficient capacity to drain rainfall, consequently causing the release of water at manholes. Sewer flooding can also occur should there be a fault/failure at an existing drainage system.

The responsible authority for sewer flooding across the study area is Thames Water who act as the sewerage undertaker. They were contacted to gather available data on sewer flooding. A total of 106 historic records of sewer flooding have been recorded for the study area since records began in 1989 with privatisation of the water industry.

It should be noted that the records are somewhat dependent on reporting and are given for broad post code areas. In this regard, caution should be exercised when ascribing sewer flood risk to a particular location.”

The area of postcode RG4 indicates 6 external flooding events and 16 internal flooding from sewers. The internal flooding events are likely to be basement flooding events in the area.

The public surface water systems in the area discharges into the Thames therefore a potential hydraulic link to the fluvial flooding exists, although it would be reasonable to assume that Thames Water has flood protection measures on their system to reduce the risk of fluvial flooding.

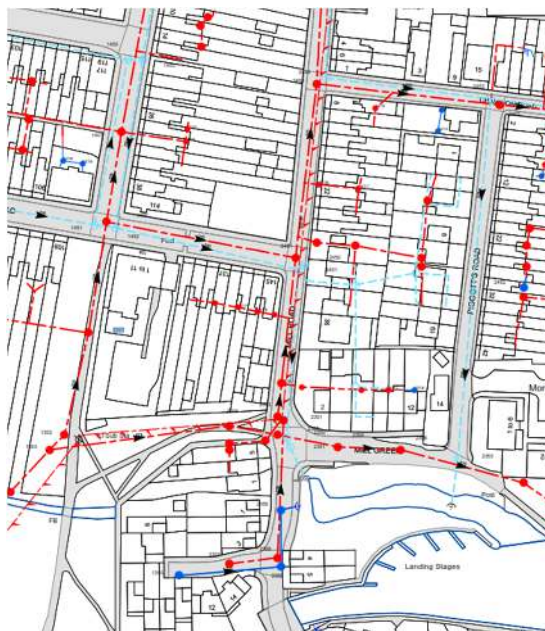


Figure 7 – Thames Water Sewer Map

The existing building's ground floor is located above the surrounding ground and highway; therefore, any local sewer flooding would flow along the highways.

There will be no change to the existing building drainage systems, therefore no increase in sewer flood risk.

It is concluded that if the private sewer system is maintained, then there is a low risk of sewer flooding.

4.11 Flood Risk from Artificial Sources

Artificial sources of flooding include reservoirs, canals, lakes and mining abstraction.

The site is located within the extent of flooding from reservoirs when there is also flooding from rivers.

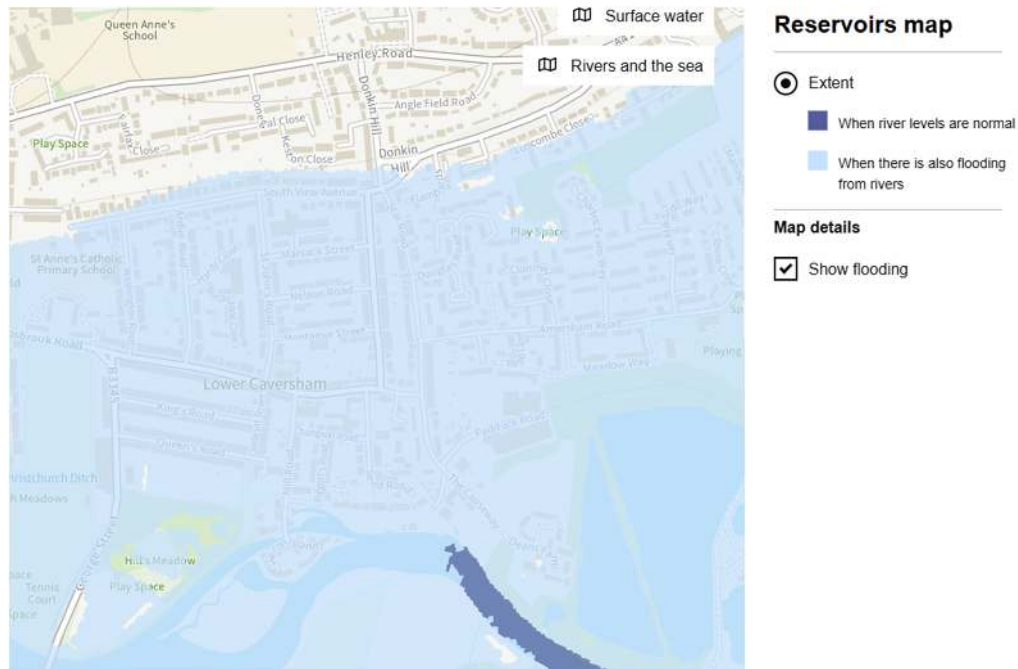


Figure 8 – Reservoir Flooding

The Environment Agency states that “Reservoir flooding is extremely unlikely. There has been no loss of life in the UK from a reservoir flooding since 1925. Since then reservoir safety legislation has been introduced to make sure reservoirs are well maintained.”

The risk of reservoir flooding on this site is directly linked to the fluvial flood risk, and therefore, the fluvial flood risk should take precedence.

5.0 Flood Risk Management

5.1 Principles of Flood Risk Management

NPPF requires a precautionary approach to be undertaken when making land use planning decisions regarding flood risk. This is partly due to the considerable uncertainty surrounding flooding mechanisms and how flooding may respond to climate change. It is also due to the potentially devastating consequences of flooding to the people and property affected.

Flood risk is a combination of the probability of flooding and the consequences of flooding. Hence 'managing flood risk' involves managing either, the probability of flooding or the consequences of flooding, or both.

NPPF requires flooding from tidal, fluvial, overland, surface water & sewerage and from groundwater to be considered. The flood risk management measures discussed in this section are based on the sources of flooding identified in Section 4 that are considered to pose a risk to the development proposals.

5.2 Flood Risk Management

Section 4 identified the sources of flooding that require investigation to ensure that the risk to the building use is an acceptable level in compliance with NPPF:

- Fluvial

5.3 Fluvial Flood Risk

Fluvial flood risk has been highlighted as the main risk to the site.

The building was a commercial ground floor with residential above, and this application intends to convert to a residential only building.

Using peak river flow allowances for flood risk assessments based on a more vulnerable development has been assessed against the Central Allowance. Using the Thames and South Chilterns Operational Catchment, a climate change allowance of 31% has been used to assess the property.

The design flood level for the 1%AEP+31% climate change flood level is 37.89m AOD.

The building's ground floor level has been surveyed as 37.97m AOD and is therefore located above the 1%AEP+31% climate change flood level, and is also above the 0.1% flood level for the site.

The building is therefore considered at a low risk of fluvial flooding and is appropriate for residential use.

The previous building use is commercial at ground floor with residential above therefore as the development contains more than one vulnerability type, and includes residential accommodation, the overall vulnerability is taken as "more vulnerable" (the highest vulnerability component), in line with the PPG note that the highest category should be used.

There is a change of use at ground floor but no increased in the vulnerability classification of the building. The ground floor vulnerability will be increased from a commercial to residential, but the floor level is located above the design flood level therefore the risk to the building is considered low and appropriate.

6.0 Safe Access/Egress Arrangements

6.1 Access & Egress

Demonstrating safe access and egress is available for the site for the development lifetime is a key factor in demonstrating compliance with the NPPF. This requires site occupants to be able to safely access and exit the building in design flood conditions. Vehicular access to allow the emergency services to safely reach the development during design flood conditions is also normally required.

The access and egress from the site will remain unchanged onto Coldicutt Street and onto Gosbrook Road.

The footpath access route from the building to Gosbrook Road rises from 37.61m to 37.79m and is indicated on the Environment Agency 1%AEP+35% hazard map as danger to some.

The building was partially residential and is surrounded by residential buildings on all side therefore there would be no increased burden on emergency services.

**Hazard Map for the 1% AEP + 35% climate change event centred on property at SU7220274478
Created on 16/01/26 REF: EIR2026/00439**



Figure 9 – Flood depth hazard 1%AEP+30%climate change

6.2 Flood Resilience and Resistance.

The existing ground floor is located above the design flood level; therefore, no additional flood resilience measures are required for the ground floor.

Given the proximity of fluvial flooding some additional resilient measures including the following should be included.

- All electrical equipment to be located minimum 0.5m above floor level
- Floor finishes at ground floor to be flood resilient where practicable
- Non return valves on drainage connection to the public sewers

7.0 Conclusion

- The Environment Agency flood data and topographical survey confirm that the building ground floor is located above the 1%AEP+26% climate change and above the 0.1%AEP flood level.
- The building is at a low risk of all forms of flooding.
- Since 1947 there has been no recorded flooding in the area.
- The original building use is a mixed commercial and residential use and will be converted to a full residential use with no overall increase in vulnerability classification.
- Access and egress will remain unchanged and will not increase the overall burden on emergency services given the large area of residential properties surrounding the building.
- The owners will be signed up with the Environment Agency's early warning system.
- The change of use will not increase the flood risk or burden on emergency services and is deemed appropriate.

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Appendix A

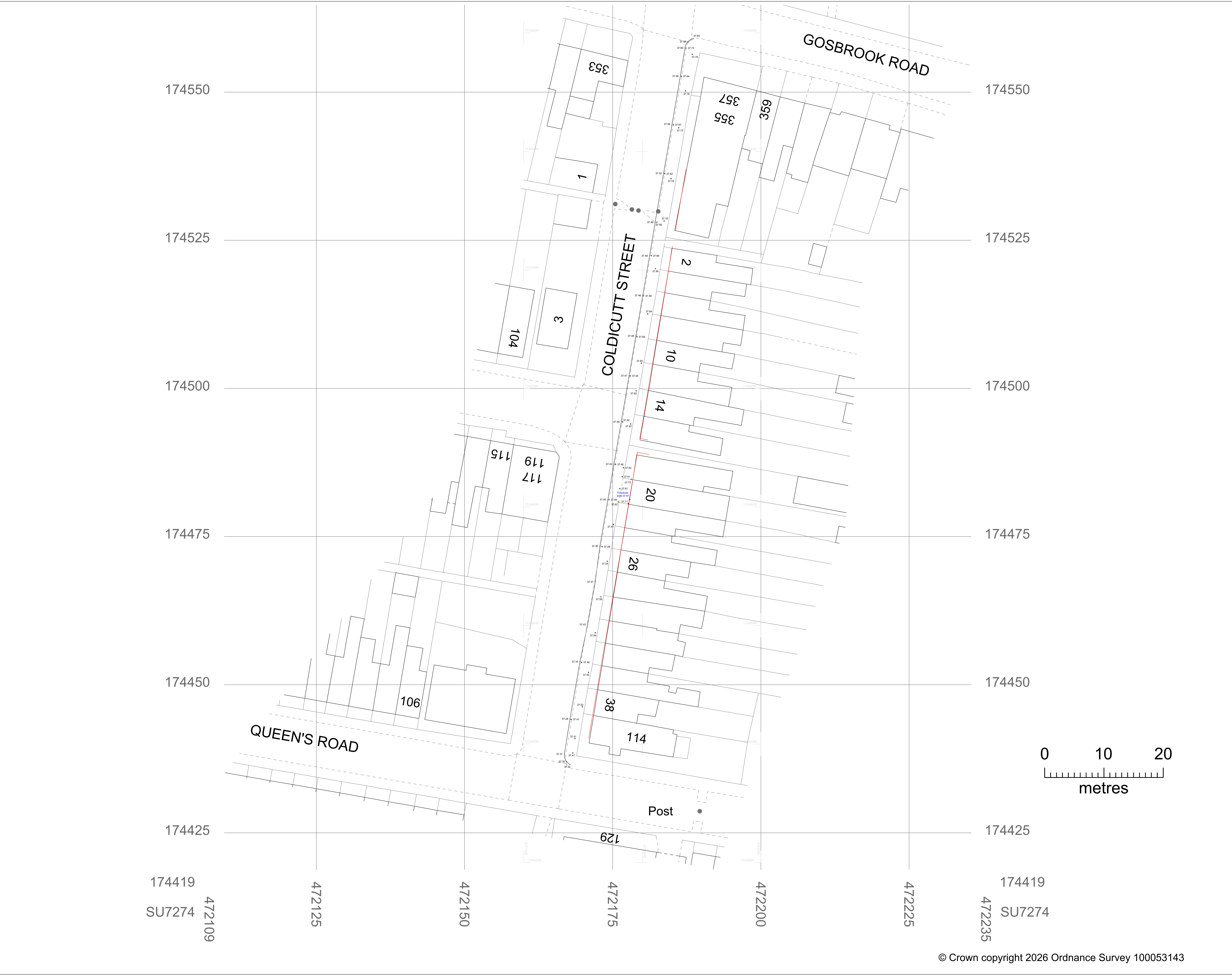
Flood Zones

Table 1: Flood Zones

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 0.1% annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map for Planning – all land outside Zones 2, 3a and 3b)
Zone 2 Medium Probability	Land having between a 1% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: • land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or • land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

Appendix B

Surveys



Drawing NumberGeo26-009

LEGEND

AVAir Valve

BBBellisha Beacon

BIllum Bollard

BLBollard

BMBench Mark

BPBrick Pillar

BPSBlock Paving Slabs

BRKBrick

BSBus Stop/Shelter

BWBBrick Wall

BRWBrick Retaining Wall

CBTelephone Box

CCCTV Camera

CeCats Eye

CLCover Level

CONCConcrete

CPSConcrete Paving Slabs

CWConcrete Wall

CRWConcrete Ret. Wall

DKDrop Kerb

EBElectricity Box

EPElectricity Pole

FBFlower Bed

FHFire Hydrant

FLFlood Light

FSFlag Staff

FPFootpath

GGully

HWHeadwall

ICInspection Cover

ILInvert Level

KWKerb Weir Inlet

LBLitter Bin

LP Lamp Post

BTManhole Telecom

MBMulti-hole tree

MCManhole Cable

MEManhole Electricity

MFManhole Foul

MHManhole General

MKMarker Post

MSManhole Surface Water

MWWater Supply/Meter

NBNotice Board

OHCOver Head Cable

PPost

PBPost Box

PIPipe

RERodding Eye

RGRoad Gully

RNRoad Name Plate

RPReflector Post

RSRoad Sign

SapSapling

SMPSheet Metal Piling

SLSoffit Level

StuSlump

SPSign Post

SVStop Valve

SWStone Wall

SRWStone Retaining Wall

THThreshold Level

TLTraffic Light

TPTelegraph Pole

TPSTactile Paving

TV Cable TV Point

TCTraffic Camera

TWTop of wall

VPVent

WLWater level

WOWire Mesh Fence

WOWashout

Fence Types

BWFBarbed Wire Fence

CBFClose Boarded Fence

CLFChain Link Fence

CPFChainnut Paling Fence

IRFIron Railing Fence

LLFLarch Lap Fence

MFMetal Fence

OBFOpen Board Fence

PFPanel Fence

PRFPost & Rail Fence

PWFPost & Wire Fence

SFSecurity Fence

NOTES

1. The Grid is OSGB 36 using OSTN15 & OSGB15 on the OS Active Network

2. All levels are related to OS Datum (Newlyn)

Rev

Date

Description

Checked

geopoint.

Geospatial Engineering & Surveying

Client

The Keen Partnership

Project

20 Coldicutt Street, Caversham

Title

Level Survey

Drawing No.

Geo26-009

Scale

1:250(AS)

Date

23/1/26

Drawn

AS

Checked

AS

Approved

AS

Geopoint Ltd.

Unit 8

Jupiter House

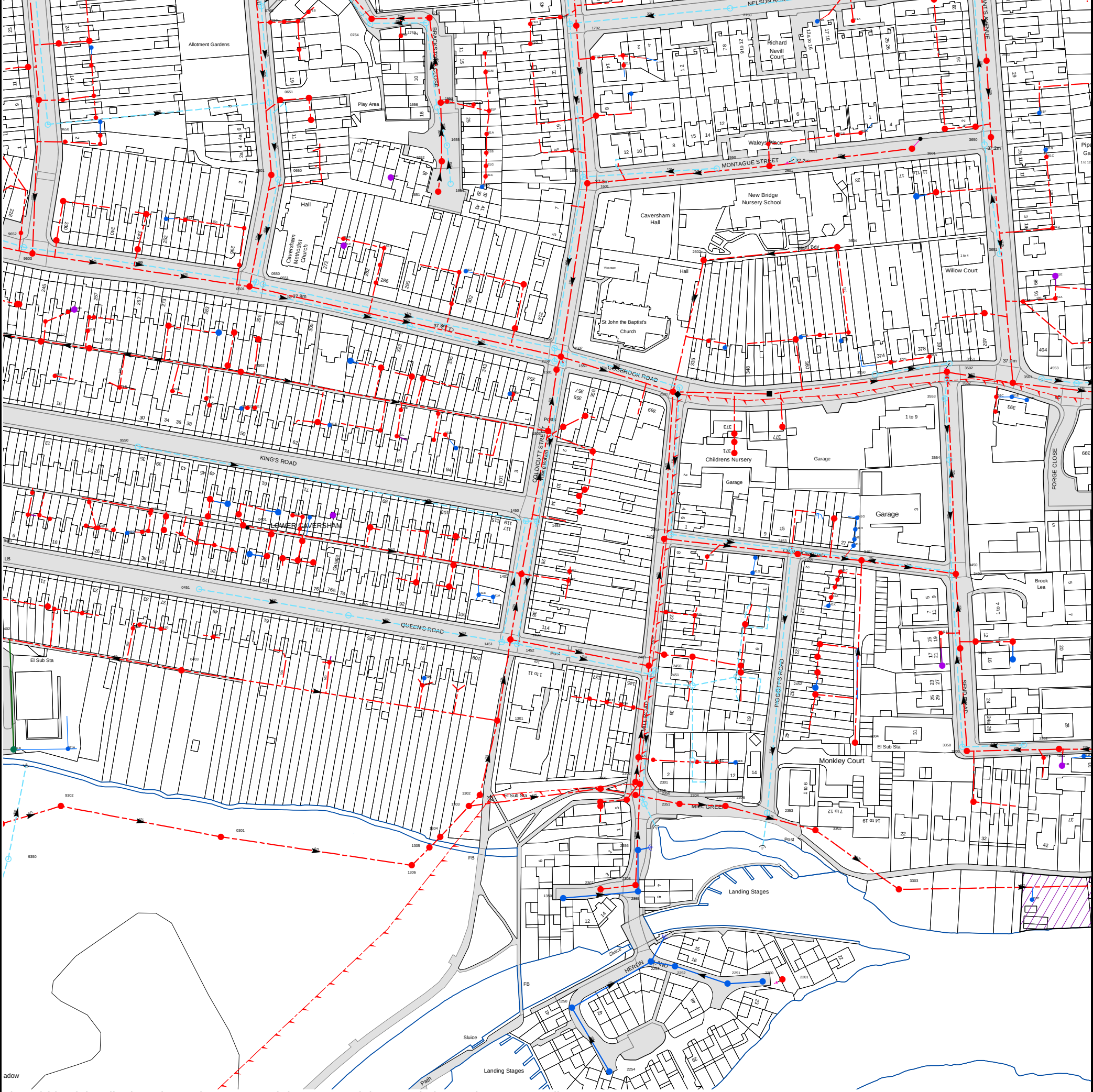
Calleva Park

Aldermaston

Reading

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Asset Location Search Sewer Map - ALS/ALS Standard/2026 5282013



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 472181,174479
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map (2024) with the Sanction of the controller of H.M. Stationery Office, License no. AC0000849556 Crown Copyright Reserved.



Asset Location Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

	Foul Sewer: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water Sewer: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined Sewer: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Storm Sewer
	Sludge Sewer
	Foul Trunk Sewer
	Surface Trunk Sewer
	Combined Trunk Sewer
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Vacuum
	Thames Water Proposed
	Vent Pipe
	Gallery

Other Sewer Types (Not operated and maintained by Thames Water)

	Sewer		Culverted Watercourse
	Proposed		Decommissioned Sewer
	Content of this drainage network is currently unknown		Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve		Meter
	Dam Chase		Vent
	Fitting		

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Ancillary		Drop Pipe
	Control Valve		Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Inlet		Outfall
	Undefined End		

Other Symbols

Symbols used on maps which do not fall under other general categories.

	Change of Characteristic Indicator		Public / Private Pumping Station
	Invert Level		Summit

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Chamber
	Operational Site

Ducts or Crossings

	Casement	Ducts may contain high voltage cables. Please check with Thames Water.
	Conduit Bridge	
	Subway	
	Tunnel	

5) 'na' or '0' on a manhole indicates that data is unavailable.

6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.

Asset Location Search Water Map - ALS/ALS Standard/2026 5282013



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 472181, 174479.
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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Asset Location Search - Water Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **Trunk Main:** A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **Metered Pipe:** A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.
- Transmission Tunnel:** A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.
- Proposed Main:** A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- General Purpose Valve
- Air Valve
- Pressure Control Valve
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- Water Tower

Other Symbols

- Data Logger
-

Other Water Pipes (Not Operated or Maintained by Thames Water)

- Other Water Company Main:** Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.
- Private Main:** Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Appendix C

Flood Information

Flood risk assessment data



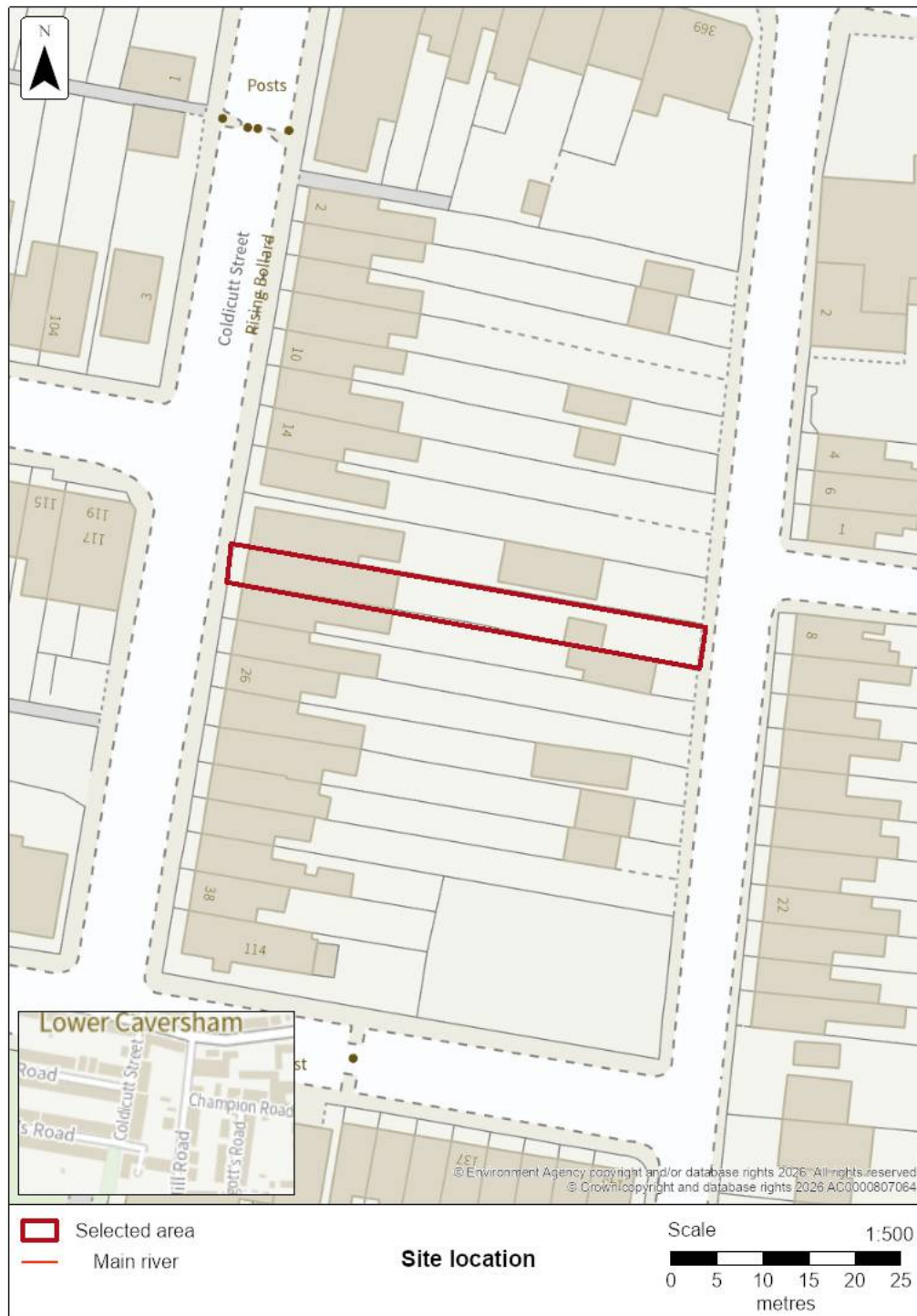
Location of site: 472202 / 174478 (shown as easting and northing coordinates)

Document created on: 7 January 2026

This information was previously known as a product 4.

Customer reference number: 4B9X63KB3XWC

Map showing the location that flood risk assessment data has been requested for.



How to use this information

You can use this information as part of a flood risk assessment for a planning application. To do this, you should include it in the appendix of your flood risk assessment.

We recommend that you work with a flood risk consultant to get your flood risk assessment.

Included in this document

In this document you'll find:

- how to find information about surface water and other sources of flooding
- information on the models used
- definitions for the terminology used throughout
- flood map for planning (rivers and the sea)
- past floods
- modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Information that's unavailable

This document **does not** contain:

- flood defences and attributes

We aren't able to display flood defence locations and attributes as there are no formal flood defences in the area of interest.

Surface water and other sources of flooding

When using the surface water map on the [check your long term flood risk service](#) the following considerations apply:

- surface water extents are suitable for use in planning
- surface water climate change scenarios may help to inform risk assessments, but the available data fall short of what is required to assess planned development
- surface water depth information should not be used for planning purposes

To find out about other factors that might affect the flood risk of this location, you should also check:

- [reservoir flood risk](#)
- groundwater flood risk - you could use the [British Geological Survey groundwater flooding data](#), [groundwater: current status and flood risk](#) and the guide on [mining and groundwater constraints for development](#) - further information may be available from the lead local flood authority (LLFA)
- your local planning authority's SFRA, which includes future flood risk

Your Lead Local Flood Authority is Reading.

For information about sewer flooding, contact the relevant water company for the area.

About the models used

Model name: Thames (Pangbourne to Sonning) 2019

Scenario(s): No defences exist fluvial, no defences exist climate change fluvial

Date: 1 January 2020

This model contains the most relevant data for your area of interest.

Terminology used

Annual exceedance probability (AEP)

This refers to the probability of a flood event occurring in any year. The probability is expressed as a percentage. For example, a large flood which is calculated to have a 1% chance of occurring in any one year, is described as 1% AEP.

Metres above ordnance datum (mAOD)

All flood levels are given in metres above ordnance datum which is defined as the mean sea level at Newlyn, Cornwall.

Flood map for planning (rivers and the sea)

Your selected location is in flood zone 3.

Flood zone 3 shows the area at risk of flooding for an undefended flood event with a:

- 0.5% or greater probability of occurring in any year for flooding from the sea
- 1% or greater probability of occurring in any year for fluvial (river) flooding

Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- between a 0.1% and 0.5% probability of occurring in any year for flooding from the sea
- between a 0.1% and 1% probability of occurring in any year for fluvial (river) flooding

It's important to remember that the flood zones on this map:

- refer to the land at risk of flooding and do not refer to individual properties
- refer to the probability of river and sea flooding, ignoring the presence of defences
- do not take into account potential impacts of climate change



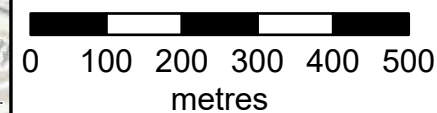
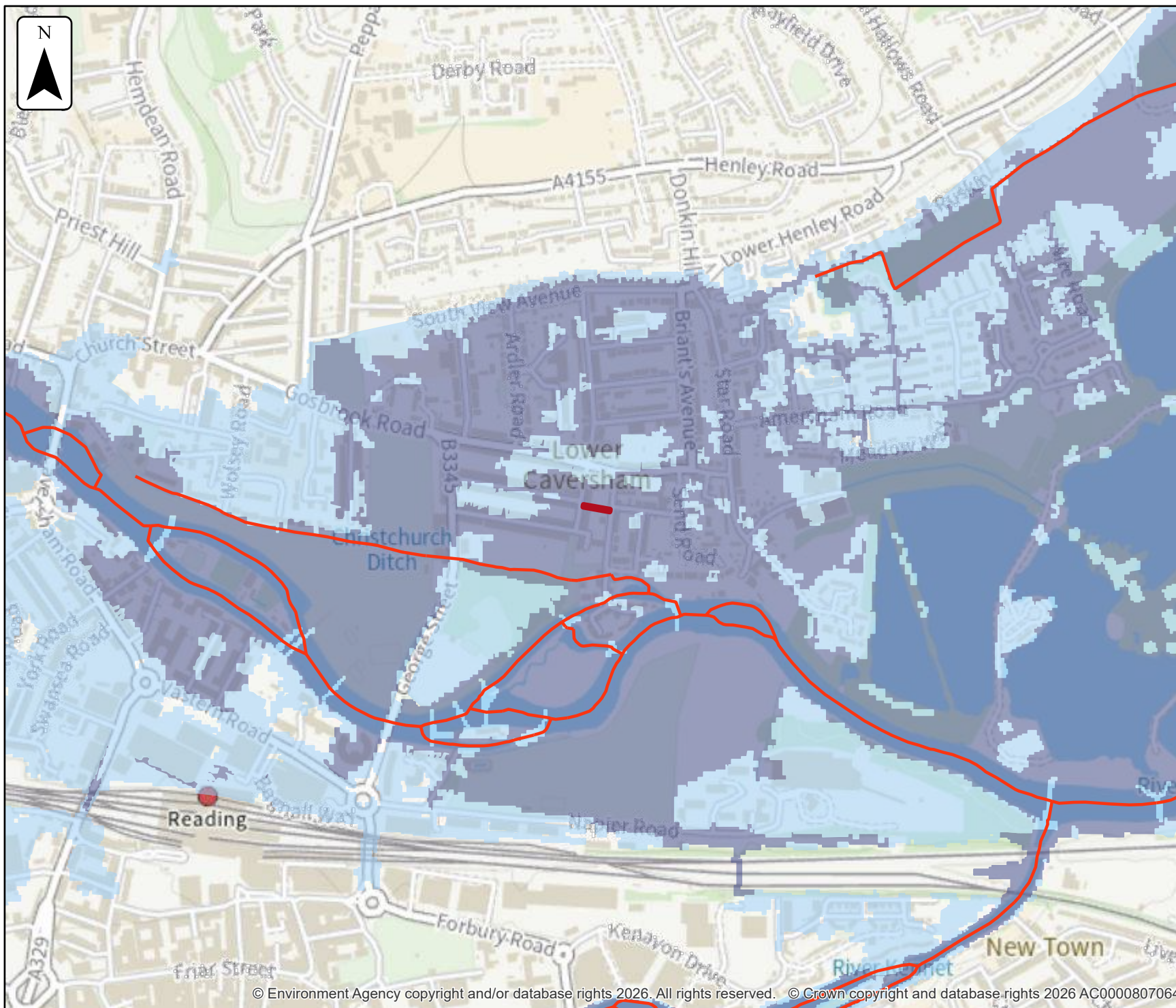
Flood map for planning

Location (easting/northing)
472202/174478

Scale
1:10,000

Created
7 Jan 2026

-  Selected area
-  Main river
-  Flood Zone 3
-  Flood Zone 2



Past floods

Past flood events included in this document

The recorded flood outlines included in this document are for areas of land local to your site location that have been flooded by any of these sources:

- ephemeral water
- main rivers
- ordinary watercourses
- the sea
- unknown

Data limitations

The outlines do not include flooding from:

- drainage where rainfall has led to surface water ponding or overland runoff
- artificial, water-bearing sewer, water supply and wastewater treatment pipelines

Changes to flood defences

The defences (also known as assets) that were in place may also have changed. For example, assets may have been built more recently than the last recorded flood outline.

What the recorded flood outlines dataset is

The recorded flood outlines are a geographical information system (GIS) data layer that show our verified records of areas that have flooded in the past from:

- rivers
- the sea
- groundwater
- surface water

[Download the complete recorded flood outlines dataset](#), which includes data quality flags for outlines recorded after April 2020. This indicates the confidence we have in an outline.

Get flood information from other organisations

Contact Reading Lead Local Flood Authority (LLFA) and your drainage board to get information about past flooding caused by surface water or drainage systems.



Past floods

Location (easting/northing)
472202/174478

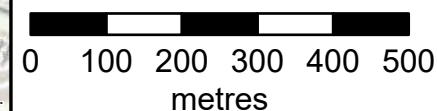
Scale

1:10,000

Created

7 Jan 2026

-  Selected area
-  Main river
- Date of flood event
-  November, 2013
 -  July, 2007
 -  December, 2002
 -  2000
 -  1992
 -  1977
 -  1974
 -  1947



Data on past flood events

Start date	End date	Source of flood	Cause of flood	Affects location
23 November 2013	28 February 2014	main river	channel capacity exceeded (no raised defences)	No
19 July 2007	29 July 2007	main river	channel capacity exceeded (no raised defences)	No
23 December 2002	12 January 2003	main river	channel capacity exceeded (no raised defences)	No
2000	2000	main river	channel capacity exceeded (no raised defences)	No
1992	1992	main river	channel capacity exceeded (no raised defences)	No
1977	1977	main river	channel capacity exceeded (no raised defences)	No
1974	1974	main river	channel capacity exceeded (no raised defences)	No
1947	1947	main river	channel capacity exceeded (no raised defences)	Yes

Modelled data

This section provides details of different scenarios we have modelled and includes the following (where available):

- outline maps showing the area at risk from flooding in different modelled scenarios
- modelled node point map(s) showing the points used to get the data to model the scenarios and table(s) providing details of the flood risk for different return periods
- map(s) showing the approximate water levels for the return period with the largest flood extent for a scenario and table(s) of sample points providing details of the flood risk for different return periods

Climate change

The climate change data included in the models may not include the latest [flood risk assessment climate change allowances](#). Where the new allowances are not available 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. For now, it's your responsibility to demonstrate that new developments will be safe in flood risk terms for their lifetime.

Modelled scenarios

The following scenarios are included:

- No defences exist modelled fluvial: risk of flooding from rivers where there are no flood defences
- No defences exist climate change modelled fluvial: risk of flooding from rivers where there are no flood defences, including estimated impact of climate change



No defences exist climate change modelled fluvial extent

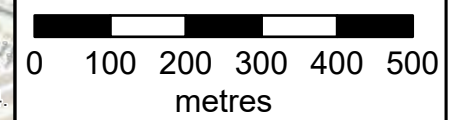
Location (easting/northing)
472202/174478

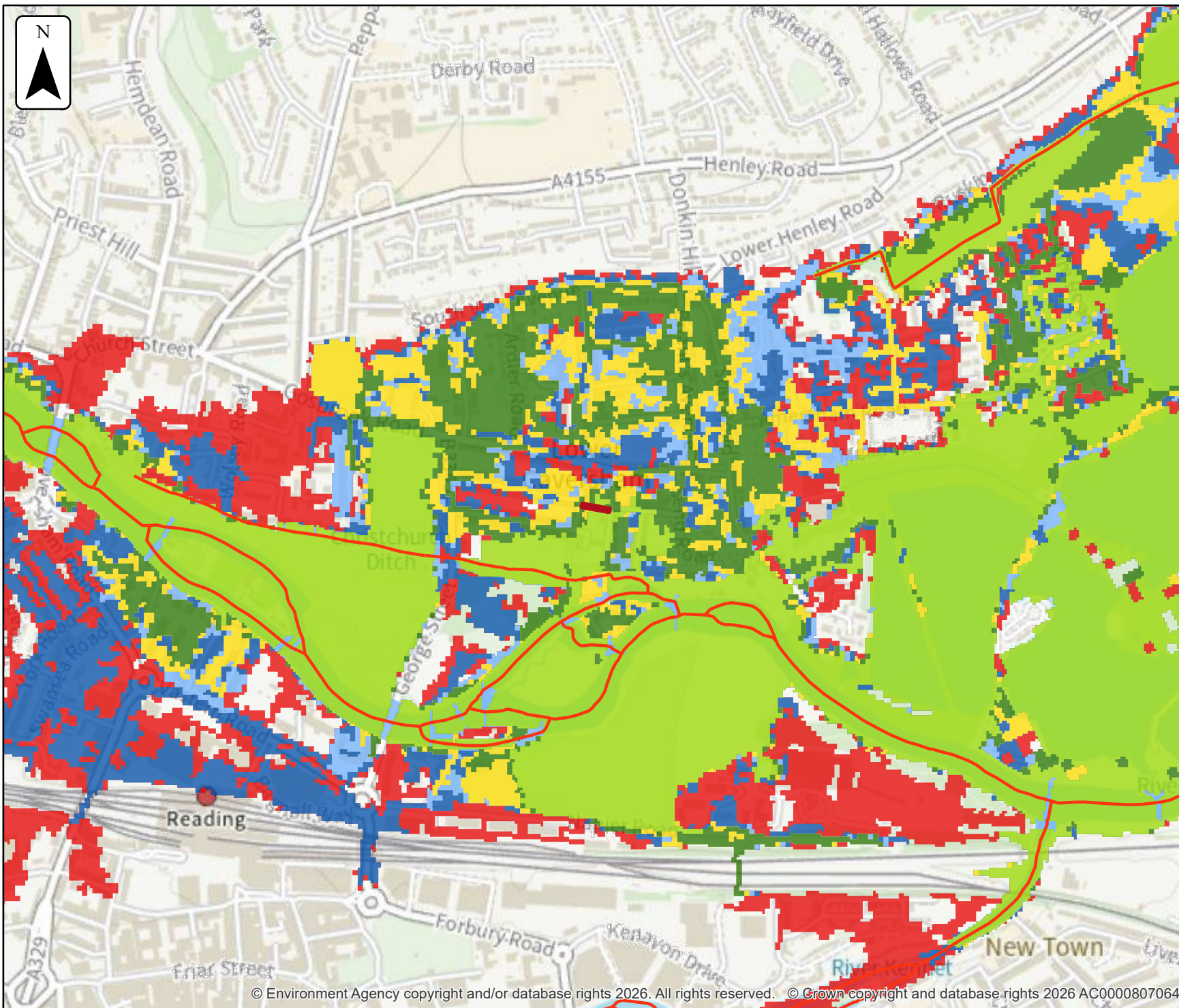
Scale Created
1:10,000 7 Jan 2026

Model name
**Thames (Pangbourne
Sonning) 2019**

-  Selected area
-  Main river
- Modelled flood extent
 -  1% AEP (+25%)
 -  1% AEP (+35%)
 -  1% AEP (+70%)

Flood extents may not be
visible where they overlap
other return periods





No defences exist modelled fluvial extent

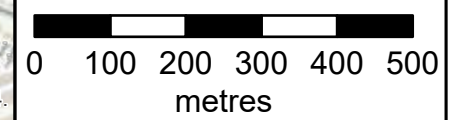
Location (easting/northing)
472202/174478

Scale Created
1:10,000 7 Jan 2026

Model name
**Thames (Pangbourne
Sonning) 2019**

- Selected area
- Main river
- Modelled flood extent
 - 5% AEP
 - 2% AEP
 - 1.33% AEP
 - 1% AEP
 - 0.5% AEP
 - 0.1% AEP

Flood extents may not be
visible where they overlap
other return periods





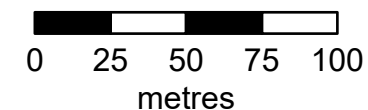
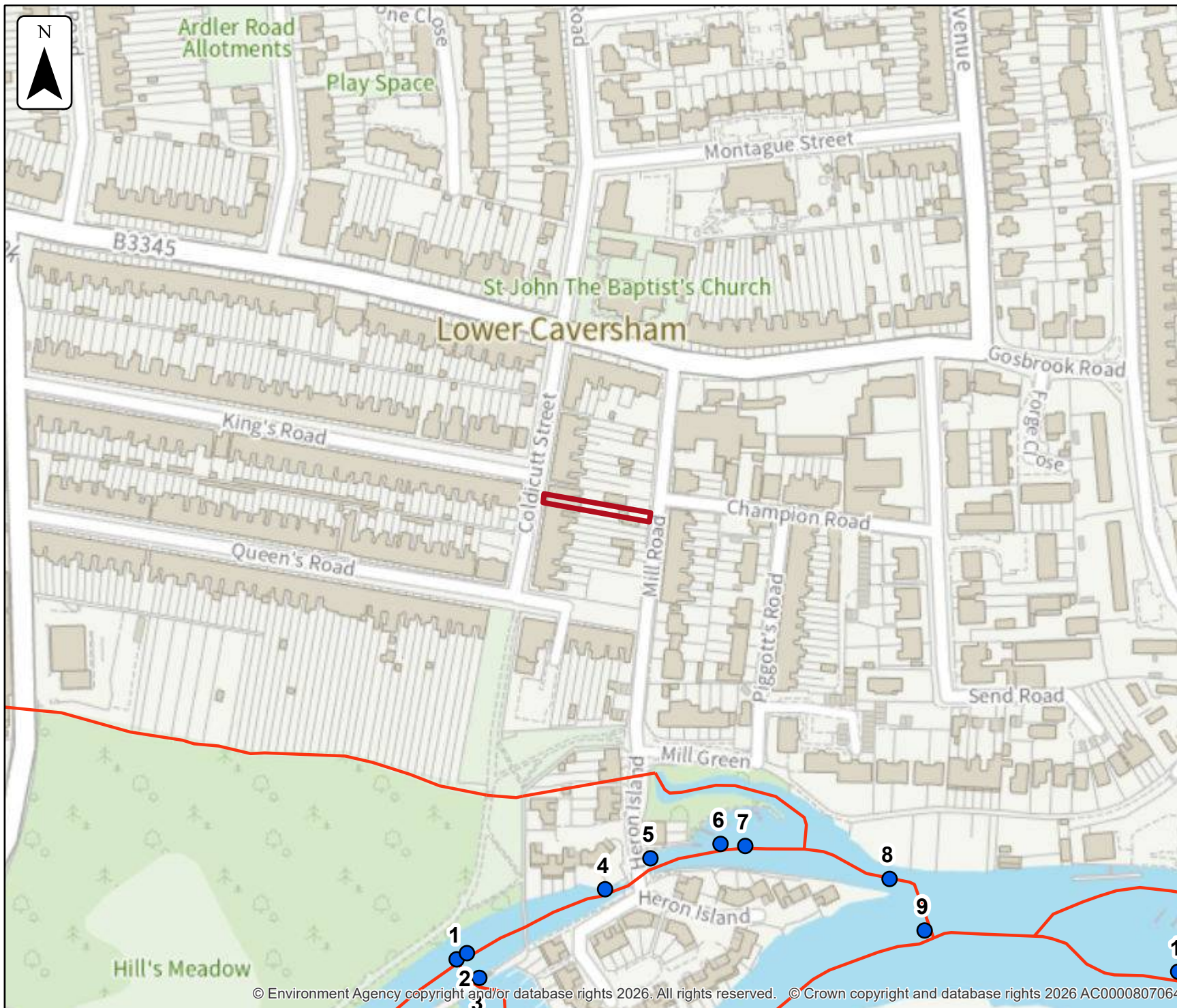
No defences exist modelled fluvial node locations

Location (easting/northing)
472202/174478

Scale Created
1:2,500 7 Jan 2026

Model name
**Thames (Pangbourne
Sonning) 2019**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level	Level	Level	Level	Level
1	1400296	472134	174259	36.87	37.07	37.31	37.42	37.58	37.69	37.77	38.02	38.08
2	1400397	472139	174262	36.87	37.07	37.31	37.42	37.58	37.69	37.77	38.02	38.08
3	1400377	472145	174250	36.45	36.57	36.67	36.73	36.83	36.91	36.97	37.14	37.47
4	1400424	472206	174293	36.87	37.07	37.30	37.42	37.57	37.70	37.79	38.20	39.16
5	1400329	472228	174308	36.44	36.56	36.67	36.74	36.83	36.92	36.97	37.12	37.47
6	1400390	472262	174315	36.44	36.56	36.67	36.74	36.83	36.92	36.97	37.12	37.45
7	1400451	472274	174314	36.44	36.56	36.67	36.74	36.83	36.92	36.97	37.12	37.45
8	1400291	472344	174298	36.44	36.56	36.67	36.74	36.83	36.92	36.97	37.11	37.43
9	1400327	472361	174273	36.44	36.56	36.67	36.74	36.83	36.92	36.97	37.11	37.43
10	1400328	472484	174253	36.41	36.52	36.63	36.70	36.79	36.87	36.93	37.06	37.37

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.

No defences exist

Label	Modelled location ID	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow
1	1400296	472134	174259	15.86	19.74	21.28	21.26	21.27	24.69	29.98	65.91	167.92
2	1400397	472139	174262	0.68	1.34	2.33	2.58	3.59	8.45	13.47	48.60	154.02
3	1400377	472145	174250	15.18	18.40	19.66	19.65	19.66	19.66	19.66	19.66	19.65
4	1400424	472206	174293	0.67	1.34	2.32	2.87	3.64	4.31	4.83	7.36	14.51
5	1400329	472228	174308	0.67	1.34	2.32	2.87	3.64	4.31	4.83	7.36	14.51
6	1400390	472262	174315	0.68	1.34	2.33	3.07	4.38	6.03	7.57	18.62	58.21
7	1400451	472274	174314	0.68	4.53	6.01	6.77	8.04	9.74	11.31	22.96	64.49
8	1400291	472344	174298	0.40	3.93	5.04	5.65	6.67	9.11	11.88	27.26	72.81
9	1400327	472361	174273	222.48	254.69	283.24	297.04	314.95	329.13	339.65	356.97	394.04
10	1400328	472484	174253	222.76	253.88	281.18	295.48	313.37	327.60	337.99	357.63	398.72

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model.
Level values are shown in mAOD, and flow values are shown in cubic metres per second.
Any blank cells show where a particular scenario has not been modelled for this location.



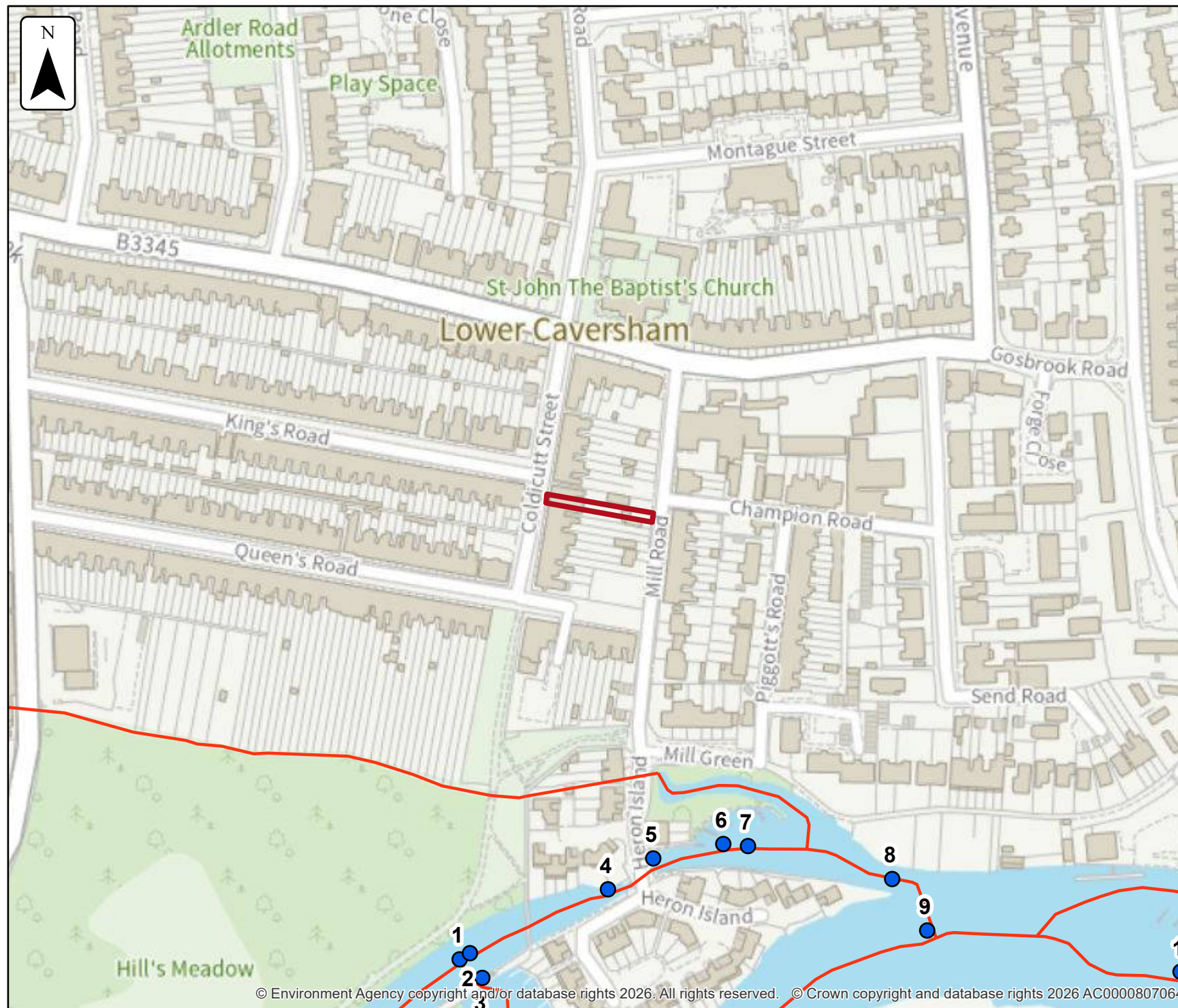
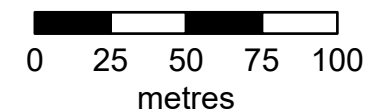
**No defences exist
climate change
modelled fluvial
node locations**

Location (easting/northing)
472202/174478

Scale Created
1:2,500 7 Jan 2026

Model name
**Thames (Pangbourne
Sonning) 2019**

-  Selected area
-  Modelled location
-  Main river



Modelled node locations data

No defences exist climate change

Label	Modelled location ID	Easting	Northing	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)
				Level	Level	Level	Flow	Flow	Flow
1	1400296	472134	174259	38.08	38.08	38.13	103.45	140.89	227.41
2	1400397	472139	174262	38.08	38.08	38.13	86.80	125.56	221.75
3	1400377	472145	174250	37.29	37.39	37.71	19.64	19.66	19.67
4	1400424	472206	174293	38.56	38.91	39.71	9.89	12.52	19.33
5	1400329	472228	174308	37.27	37.38	37.72	9.89	12.52	19.33
6	1400390	472262	174315	37.26	37.36	37.69	32.35	47.06	76.76
7	1400451	472274	174314	37.26	37.37	37.70	37.33	52.31	83.39
8	1400291	472344	174298	37.25	37.35	37.68	43.82	59.53	93.27
9	1400327	472361	174273	37.25	37.35	37.68	376.66	386.12	418.74
10	1400328	472484	174253	37.20	37.30	37.61	378.01	389.80	427.76

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model.
 Level values are shown in mAOD, and flow values are shown in cubic metres per second.
 Any blank cells show where a particular scenario has not been modelled for this location.



No defences exist modelled fluvial extent and height

Location (easting/northing)
472202/174478

Scale Created
1:500 7 Jan 2026

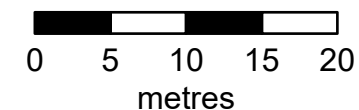
Model name
**Thames (Pangbourne
Sonning) 2019**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  36 - 36.75
-  36.75 - 37.5
-  37.5 - 38.25
-  38.25 - 39.0
-  39.0 - 39.75
-  39.75 - 40.5
-  40.5 - 41.25
-  41.25 - 42.0
-  42.0 - 42.75

This map shows the
0.1% AEP height data



Sample point data

No defences exist

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height
1	472209	174465	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.72	37.91
2	472217	174465	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
3	472225	174465	NoData	NoData	37.30	37.43	37.52	37.58	37.62	37.71	37.90
4	472233	174465	NoData	NoData	37.31	37.43	37.52	37.58	37.62	37.71	37.90
5	472169	174473	NoData	NoData	NoData	NoData	NoData	37.62	37.67	37.77	37.97
6	472177	174473	NoData	NoData	NoData	NoData	37.55	37.61	37.65	37.75	37.95
7	472185	174473	NoData	NoData	NoData	NoData	NoData	37.58	37.62	37.72	37.92
8	472193	174473	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.72	37.91
9	472201	174473	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.72	37.90
10	472209	174473	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
11	472217	174473	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
12	472225	174473	NoData	NoData	37.28	37.43	37.52	37.58	37.62	37.71	37.90

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height
13	472233	174473	NoData	NoData	37.24	37.38	37.48	37.55	37.59	37.68	37.87
14	472169	174481	NoData	NoData	NoData	NoData	37.54	37.63	37.67	37.77	37.97
15	472177	174481	NoData	NoData	NoData	NoData	37.55	37.62	37.66	37.76	37.96
16	472185	174481	NoData	NoData	NoData	NoData	NoData	NoData	37.63	37.73	37.93
17	472193	174481	NoData	NoData	37.31	37.44	37.52	37.58	37.63	37.72	37.91
18	472201	174481	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
19	472209	174481	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
20	472217	174481	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
21	472225	174481	NoData	NoData	NoData	NoData	37.52	37.58	37.62	37.71	37.90
22	472233	174481	NoData	NoData	NoData	37.40	37.49	37.55	37.60	37.69	37.88
23	472169	174489	NoData	NoData	NoData	NoData	37.53	37.63	37.67	37.77	37.97
24	472177	174489	NoData	NoData	NoData	NoData	37.54	37.63	37.66	37.76	37.96

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height	Height	Height	Height	Height	Height
25	472185	174489	NoData	NoData	NoData	NoData	NoData	NoData	37.64	37.74	37.94
26	472193	174489	NoData	NoData	NoData	NoData	37.52	37.58	37.63	37.72	37.92
27	472201	174489	NoData	NoData	37.31	37.44	37.52	37.58	37.62	37.71	37.90
Max value in selected area:			Not Calculated	Not Calculated	37.31	37.44	37.55	37.62	37.66	37.76	37.96

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

No defences exist

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
1	472209	174465	NoData	NoData	0.47	0.59	0.68	0.74	0.78	0.87	1.06
2	472217	174465	NoData	NoData	0.32	0.44	0.53	0.59	0.63	0.72	0.91
3	472225	174465	NoData	NoData	0.03	0.17	0.25	0.32	0.35	0.44	0.63
4	472233	174465	NoData	NoData	0.05	0.16	0.25	0.31	0.35	0.44	0.63
5	472169	174473	NoData	NoData	NoData	NoData	NoData	0.10	0.15	0.25	0.45
6	472177	174473	NoData	NoData	NoData	NoData	0.01	0.01	0.02	0.12	0.32
7	472185	174473	NoData	NoData	NoData	NoData	NoData	0.08	0.12	0.21	0.41
8	472193	174473	NoData	NoData	0.27	0.38	0.45	0.51	0.55	0.64	0.83
9	472201	174473	NoData	NoData	0.36	0.48	0.57	0.63	0.67	0.76	0.95
10	472209	174473	NoData	NoData	0.25	0.37	0.46	0.52	0.56	0.65	0.84
11	472217	174473	NoData	NoData	0.18	0.31	0.39	0.45	0.49	0.58	0.77
12	472225	174473	NoData	NoData	0.04	0.19	0.28	0.34	0.38	0.47	0.66

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
13	472233	174473	NoData	NoData	0.01	0.16	0.26	0.32	0.37	0.46	0.65
14	472169	174481	NoData	NoData	NoData	NoData	0.03	0.11	0.16	0.26	0.46
15	472177	174481	NoData	NoData	NoData	NoData	0.02	0.04	0.05	0.14	0.34
16	472185	174481	NoData	NoData	NoData	NoData	NoData	NoData	0.05	0.15	0.35
17	472193	174481	NoData	NoData	0.00	0.09	0.16	0.21	0.25	0.34	0.53
18	472201	174481	NoData	NoData	0.14	0.26	0.34	0.41	0.45	0.54	0.73
19	472209	174481	NoData	NoData	0.23	0.36	0.44	0.51	0.55	0.63	0.82
20	472217	174481	NoData	NoData	0.10	0.22	0.31	0.37	0.41	0.50	0.69
21	472225	174481	NoData	NoData	NoData	NoData	0.24	0.30	0.34	0.43	0.62
22	472233	174481	NoData	NoData	NoData	0.17	0.26	0.33	0.37	0.46	0.65
23	472169	174489	NoData	NoData	NoData	NoData	0.01	0.10	0.14	0.24	0.44
24	472177	174489	NoData	NoData	NoData	NoData	0.00	0.02	0.03	0.11	0.31

Label	Easting	Northing	20% AEP	10% AEP	5% AEP	3.33% AEP	2% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth	Depth
25	472185	174489	NoData	NoData	NoData	NoData	NoData	NoData	0.03	0.13	0.32
26	472193	174489	NoData	NoData	NoData	NoData	0.08	0.10	0.14	0.24	0.43
27	472201	174489	NoData	NoData	0.16	0.28	0.37	0.43	0.47	0.56	0.75
Max value in selected area:			Not Calculated	Not Calculated	0.16	0.28	0.37	0.44	0.47	0.56	0.75

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



**No defences exist
climate change
modelled fluvial
extent and height**

Location (easting/northing)
472202/174478

Scale Created
1:500 7 Jan 2026

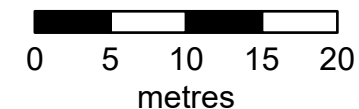
Model name
**Thames (Pangbourne
Sonning) 2019**

-  Selected area
-  Main river

Modelled 2D grid
Water level in mAOD

-  37 - 37.25
-  37.25 - 37.5
-  37.5 - 37.75
-  37.75 - 38.0
-  38.0 - 38.25
-  38.25 - 38.5
-  38.5 - 38.75
-  38.75 - 39.0
-  39.0 - 39.25

This map shows the
1% AEP +70% height data



Sample point data

No defences exist climate change

Label	Easting	Northing	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)
			Height	Height	Height	Depth	Depth	Depth
1	472209	174465	37.80	37.87	38.05	0.96	1.02	1.21
2	472217	174465	37.80	37.86	38.05	0.81	0.87	1.06
3	472225	174465	37.80	37.86	38.05	0.53	0.59	0.78
4	472233	174465	37.79	37.86	38.04	0.53	0.59	0.78
5	472169	174473	37.86	37.93	38.12	0.34	0.41	0.60
6	472177	174473	37.84	37.90	38.10	0.21	0.28	0.47
7	472185	174473	37.81	37.87	38.06	0.31	0.37	0.56
8	472193	174473	37.80	37.87	38.05	0.73	0.80	0.98
9	472201	174473	37.80	37.87	38.05	0.85	0.91	1.10
10	472209	174473	37.80	37.86	38.05	0.74	0.80	0.99
11	472217	174473	37.80	37.86	38.05	0.67	0.73	0.92
12	472225	174473	37.80	37.86	38.04	0.56	0.62	0.81

Label	Easting	Northing	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)
			Height	Height	Height	Depth	Depth	Depth
13	472233	174473	37.77	37.83	38.02	0.54	0.61	0.80
14	472169	174481	37.86	37.93	38.12	0.35	0.41	0.61
15	472177	174481	37.85	37.92	38.11	0.24	0.30	0.49
16	472185	174481	37.82	37.88	38.08	0.24	0.31	0.50
17	472193	174481	37.81	37.87	38.06	0.43	0.49	0.68
18	472201	174481	37.80	37.86	38.05	0.62	0.69	0.87
19	472209	174481	37.80	37.86	38.05	0.72	0.78	0.97
20	472217	174481	37.80	37.86	38.05	0.58	0.64	0.83
21	472225	174481	37.79	37.86	38.04	0.51	0.58	0.76
22	472233	174481	37.77	37.84	38.03	0.55	0.61	0.80
23	472169	174489	37.86	37.93	38.12	0.33	0.40	0.59
24	472177	174489	37.85	37.92	38.11	0.20	0.27	0.46

Label	Easting	Northing	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)	1% AEP (+25%)	1% AEP (+35%)	1% AEP (+70%)
			Height	Height	Height	Depth	Depth	Depth
25	472185	174489	37.83	37.90	38.08	0.22	0.28	0.47
26	472193	174489	37.81	37.88	38.06	0.33	0.39	0.58
27	472201	174489	37.80	37.86	38.05	0.65	0.71	0.89
Max value in selected area:			37.85	37.92	38.11	0.65	0.71	0.90

Data in this table comes from the Thames (Pangbourne to Sonning) 2019 model. Height values are shown in mAOD, and depth values are shown in metres.

Any blank cells show where a particular scenario has not been modelled for this location.

Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.

'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Strategic flood risk assessments

We recommend that you check the relevant local authority's strategic flood risk assessment (SFRA) as part of your work to prepare a site specific flood risk assessment.

This should give you information about:

- the potential impacts of climate change in this catchment
- areas defined as functional floodplain
- flooding from other sources, such as surface water, ground water and reservoirs

Your Lead Local Flood Authority is Reading.

About this data

This data has been generated by strategic scale flood models and is not intended for use at the individual property scale. If you're intending to use this data as part of a flood risk assessment, please include an appropriate modelling tolerance as part of your assessment. The Environment Agency regularly updates its modelling. We recommend that you check the data provided is the most recent, before submitting your flood risk assessment.

Flood risk activity permits

Under the Environmental Permitting (England and Wales) Regulations 2016 some developments may require an environmental permit for flood risk activities from the Environment Agency. This includes any permanent or temporary works that are in, over, under, or nearby a designated main river or flood defence structure.

[Find out more about flood risk activity permits](#)

Help and advice

Contact the Thames Environment Agency team at enquiries_thm@environment-agency.gov.uk for:

- [more information about getting a product 5, 6, 7 or 8](#)
- general help and advice about the site you're requesting data for

Product 4 (Detailed Flood Risk) for property at SU7202274478 Our Ref: EIR2026/00439

Product 4 is designed for developers where Flood Risk Standing Advice FRA (Flood Risk Assessment) Guidance Note 3 Applies. This is:

- i) "all applications in Flood Zone 3, other than non-domestic extensions less than 250 sq metres; and all domestic extensions", and
- ii) "all applications with a site area greater than 1 ha" in Flood Zone 2.

Product 4 includes the following information:

Ordnance Survey 1:25k colour raster base mapping;
Flood Zone 2 and Flood Zone 3;
Relevant model node locations and unique identifiers (for cross referencing to the water levels, depths and flows table);
Model extents showing *defended* scenarios;
FRA site boundary (where a suitable GIS layer is supplied);
Flood defence locations (where available/relevant) and unique identifiers; (supplied separately)
Flood Map flood storage areas (where available/relevant);
Historic flood events outlines (where available/relevant, not the Historic Flood Map) and unique identifiers;

Statutory (Sealed) Main River (where available within map extents);

A table showing:

- i) Model node X/Y coordinate locations, unique identifiers, and levels and flows for *defended* scenarios.
- ii) Flood defence locations unique identifiers and attributes; (supplied separately)
- iii) Historic flood events outlines unique identifiers and attributes; and
- iv) Local flood history data (where available/relevant).

Please note:

If you will be carrying out computer modelling as part of your Flood Risk Assessment, please request our guidance which sets out the requirements and best practice for computer river modelling.

This information is based on that currently 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. Should you re-contact us after a period of time, please quote the above reference in order to help us deal with your query.

This information is provided subject to the enclosed notice which you should read.

This letter is not a Flood Risk Assessment. The information supplied can be used to form part of your Flood Risk Assessment. Further advice and guidance regarding Flood Risk Assessments can be found on our website at:

<https://www.gov.uk/guidance/flood-risk-assessment-local-planning-authorities>

If you would like advice from us regarding your development proposals you can complete our pre application enquiry form which can be found at:

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

Defence information

Defence Location: No defences on Main River

Description: This location is not currently protected by any formal defences and we do not currently have any flood alleviation works planned for the area. However we continue to maintain certain watercourses and the schedule of these can be found on our internet pages.

Model information

EIR2026/00439

Model: **Thames (Pangbourne to Sonning) 2019**

Description: The information provided is taken from the Reading and Caversham Flood Alleviation Scheme: Baseline Modelling Report - Final undertaken by Jacobs, dated 07 May 2021. The study was carried out using 1D-2D modelling software (Flood Modeller Pro-TUFLOW). This model study was undertaken as part of the technical studies stage for developing scheme options for the Reading and Caversham Flood Alleviation Scheme: in February 2022 it was announced that this scheme will not go ahead, however the modelling is still viable and can be used internally and externally to inform flood risk. The whole model covers 28 km of the River Thames from Whitchurch Lock to Henley-on-Thames, however the Environment Agency are only using this model up to Sonning: downstream of this location, please refer to the Thames (Sonning to Hurley) 2019 model.

Model design runs:

1 in 2 / 50% AEP; 1 in 5 / 20% AEP; 1 in 10 / 10% AEP; 1 in 20 / 5% AEP; 1 in 30 / 3.3% AEP; 1 in 50 / 2% AEP; 1 in 75 / 1.33% AEP; 1 in 100 / 1% AEP; 1 in 100+25% / 1% AEP with 25% climate change; 1 in 100+35% / 1% AEP with 35% climate change; 1 in 100+70% / 1% AEP with 70% climate change; 1 in 200 / 0.5% AEP; and 1 in 1000 / 0.1% AEP.

Mapped outputs:

1 in 2 / 50% AEP; 1 in 5 / 20% AEP; 1 in 10 / 10% AEP; 1 in 20 / 5% AEP; 1 in 30 / 3.3% AEP; 1 in 50 / 2% AEP; 1 in 75 / 1.33% AEP; 1 in 100 / 1% AEP; 1 in 100+25% / 1% AEP with 25% climate change; 1 in 100+35% / 1% AEP with 35% climate change; 1 in 100+70% / 1% AEP with 70% climate change; 1 in 200 / 0.5% AEP; and 1 in 1000 / 0.1% AEP.

Hazard Mapping

EIR2026/00439

Hazard Mapping methodology:

To calculate flood hazard with the debris factor we have used the supplementary note to Flood Risk to People Methodology (see below).

The following calculation is used:

$$HR = d \times (v+0.5) + DF$$

Where HR = flood hazard rating

d = depth of flooding (m)

v = velocity of floodwaters (m/sec)

DF = debris factor calculated (0, 0.5, 1 depending on probability that debris will lead to a hazard)

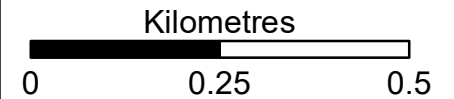
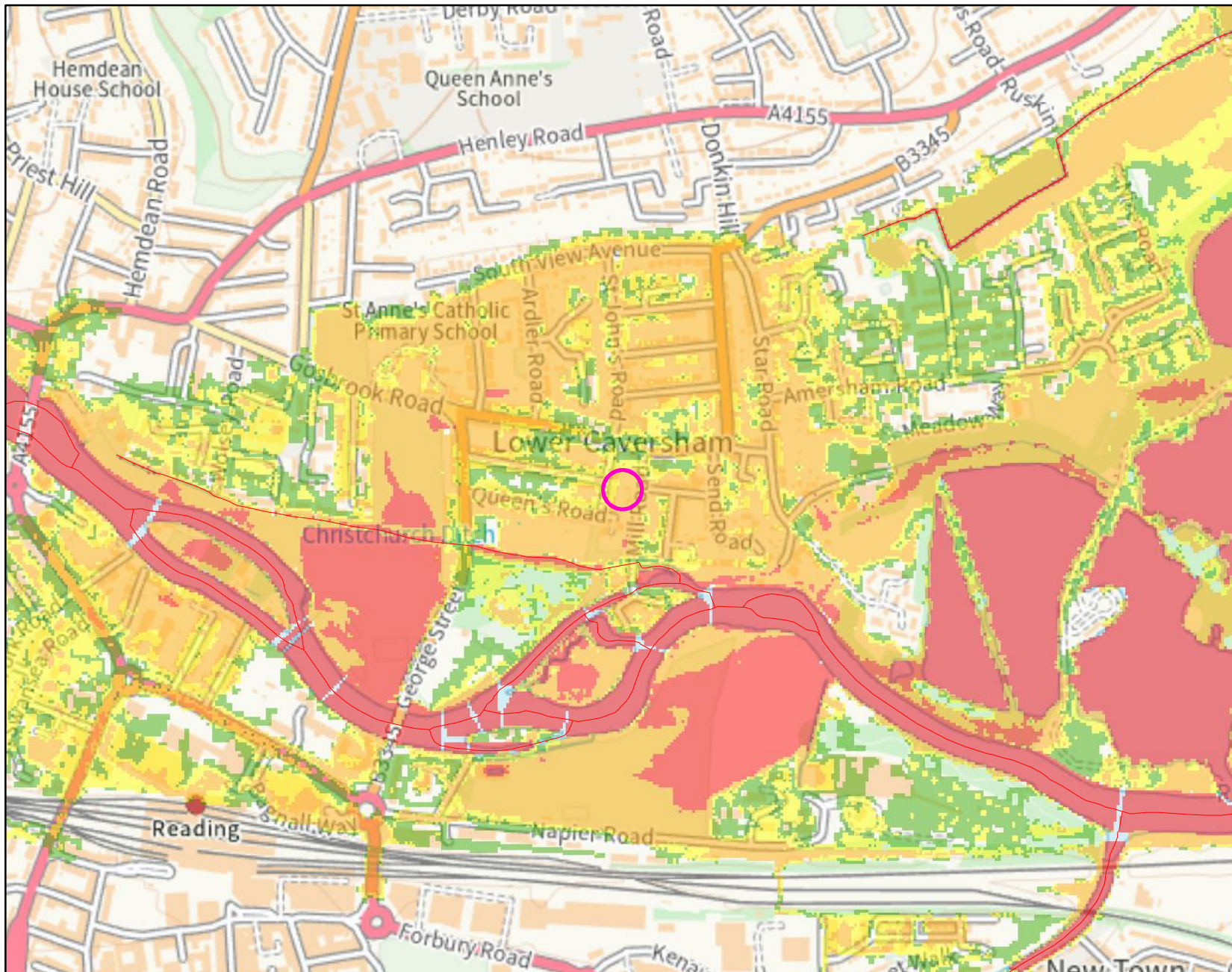
The resultant hazard rating is then classified according to:

Flood Hazard	Colour	Hazard to People Classification
Less than 0.75	Green	Very low hazard - Caution
0.75 to 1.25	Yellow	Danger for some - includes children, the elderly and the infirm
1.25 to 2.0	Orange	Danger for most - includes the general public
More than 2.0	Red	Danger for all - includes the emergency services

REF: HR Wallingford and Environment Agency (May 2008) Supplementary note of flood hazard ratings and thresholds for development planning and control purpose – Clarification of the Table 113.1 of FD2320/TR2 and Figure 3.2 of FD2321/TR1

Hazard Map for the 1% AEP + 35% climate change event centred on property at SU7220274478

Created on 16/01/26 REF: EIR2026/00439



Legend

-  Site Boundary
-  Statutory Main Rivers
-  Very low hazard – Caution
-  Danger for some – includes children, the elderly and the infirm
-  Danger for most – includes the general public
-  Danger for all – includes the emergency services

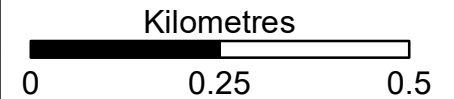
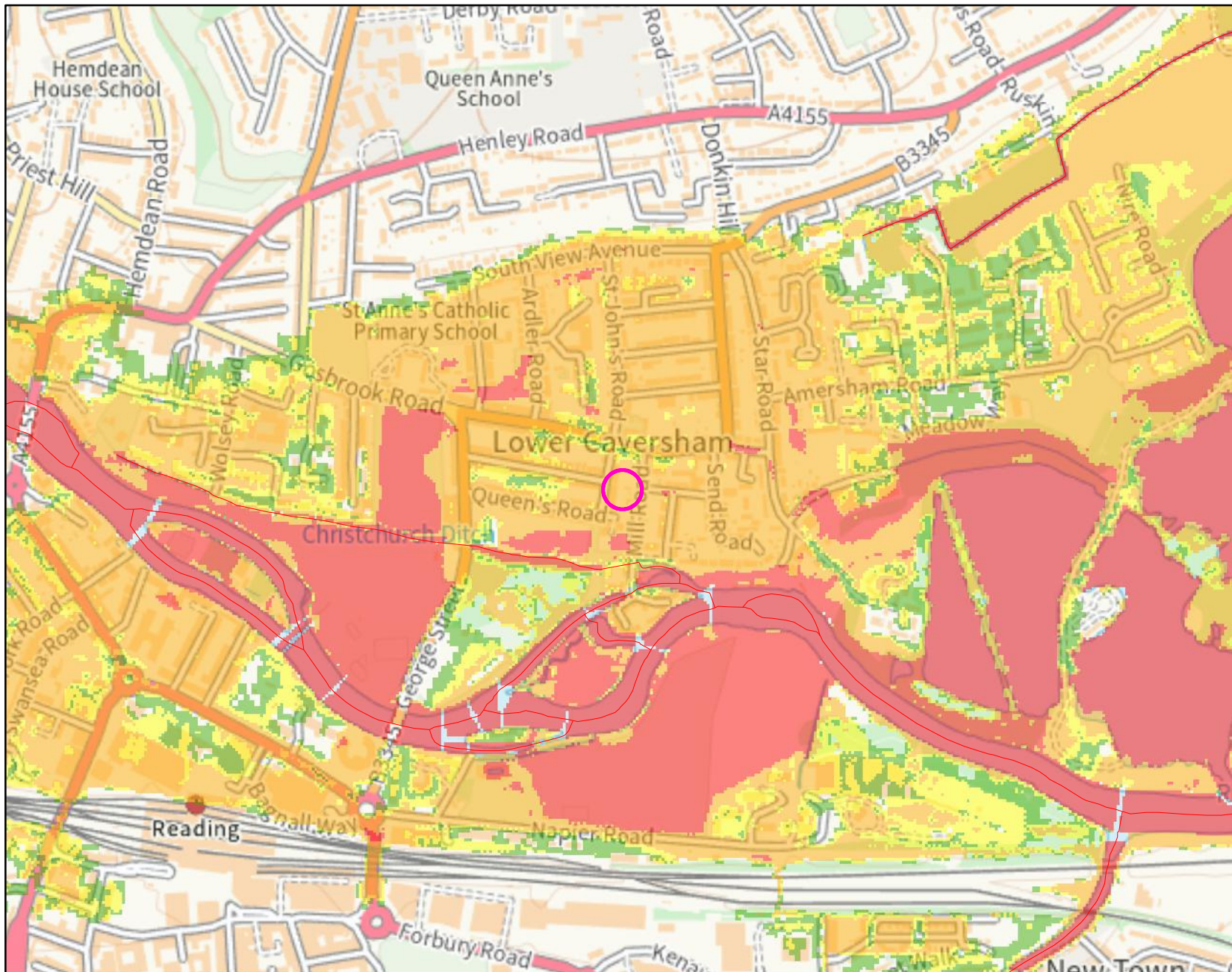
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

$$HR = d \times (v + 0.5) + DF$$

HR = flood hazard rating
 d = depth of flooding (m)
 v = velocity of floodwaters (m/sec)
 DF = debris factor calculated (0, 0.5, 1 depending on probability that debris will lead to a hazard)

Hazard Map for the 1% AEP + 70% climate change event centred on property at SU7220274478

Created on 16/01/26 REF: EIR2026/00439



Legend

-  Site Boundary
-  Statutory Main Rivers
-  Very low hazard – Caution
-  Danger for some – includes children, the elderly and the infirm
-  Danger for most – includes the general public
-  Danger for all – includes the emergency services

For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

$$HR = d \times (v + 0.5) + DF$$

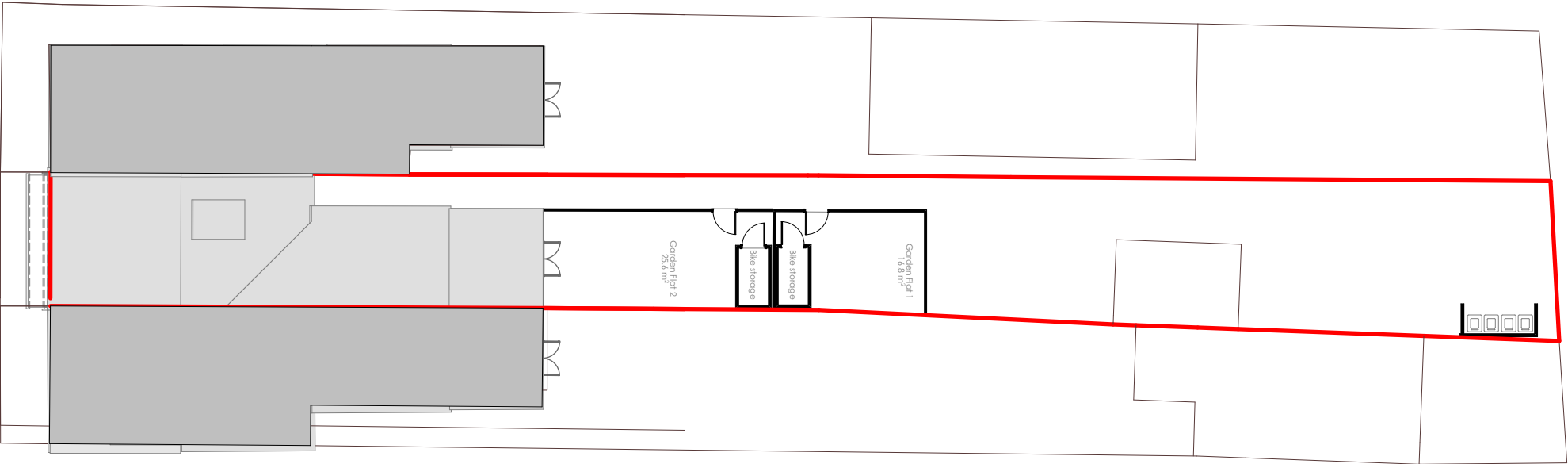
HR = flood hazard rating
d = depth of flooding (m)
v = velocity of floodwaters (m/sec)
DF = debris factor calculated (0, 0.5, 1 depending on probability that debris will lead to a hazard)

Appendix D

Proposed Layouts

1:200

Ground Floor



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All dimensions to be checked on site and any discrepancies to be reported before work commences.

Notes:

Date	Rev	Comments	By	Chk'd

1:200



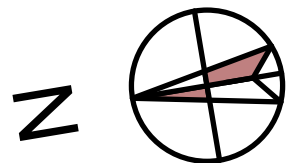
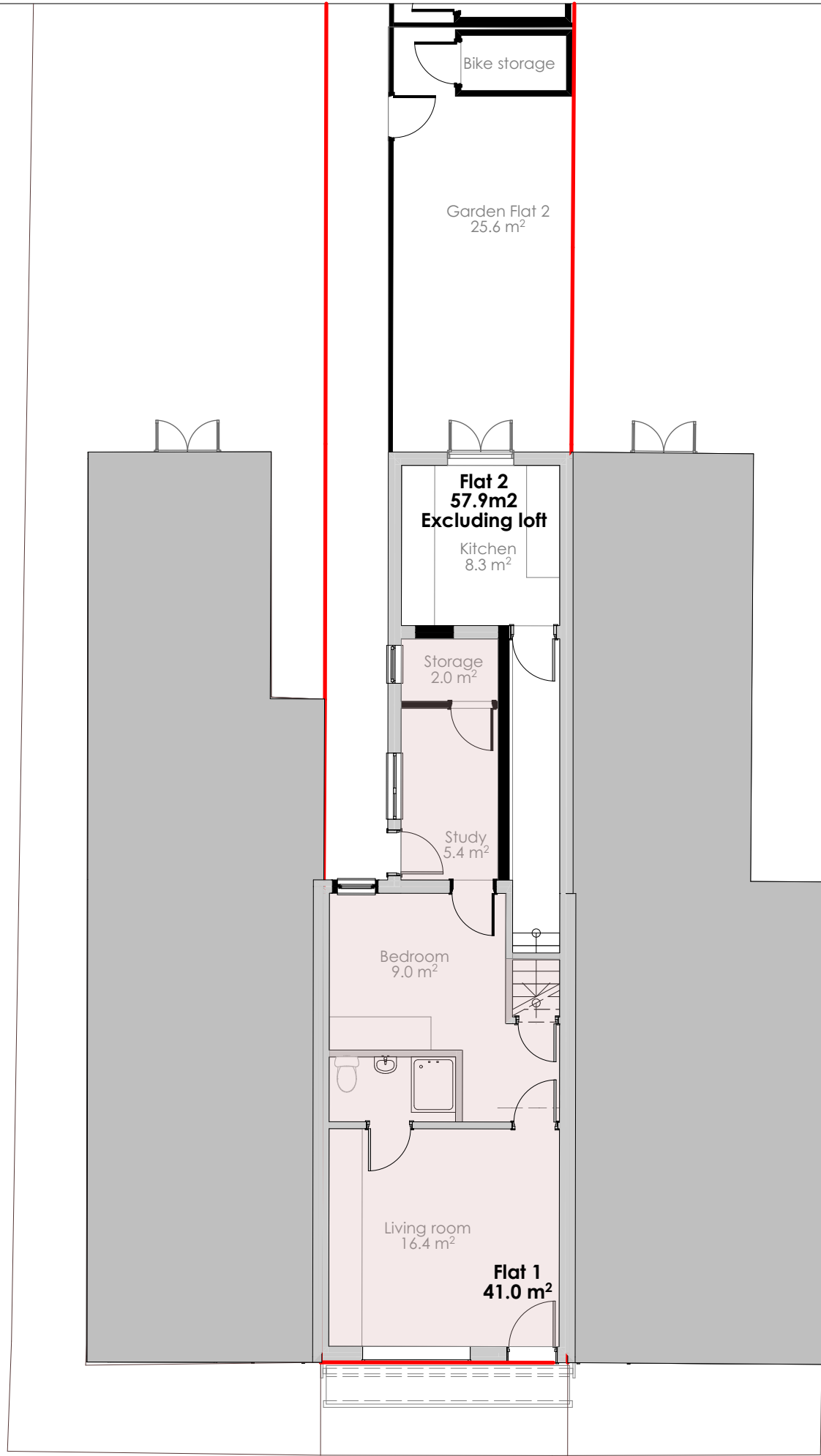
THE KEEN PARTNERSHIP
The Courtyard
Edinburgh Road
Reading RG30 2UA
Tel: 0118 9510 855
Fax: 0118 9510 866
chris@keenpartnership.co.uk
www.keenpartnership.co.uk



Job Title:
20 Coldicutt StCaversham, Reading RG4 8DU, UK

Drawing Title:
Proposed Site Plan

Drawing Date: 18-02-2026	Status: Proposed	
Issue Date: 26/02/2026	Drawn By: PD	Scale: 1:200@A3
Job No: 9520	Drawing No: 9520 PL-04.01	Rev:



1:100

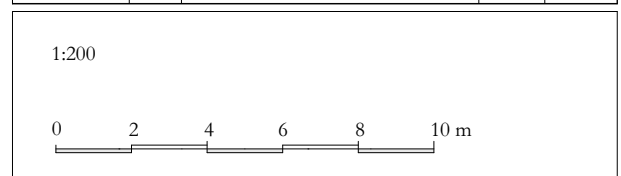
Ground Floor

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Date	Rev	Comments	By	Chk'd



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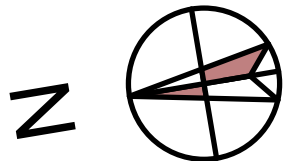
cabe
chartered association
of building engineers

RICS

Job Title:
20 Coldicutt StCaversham, Reading RG4 8DU, UK

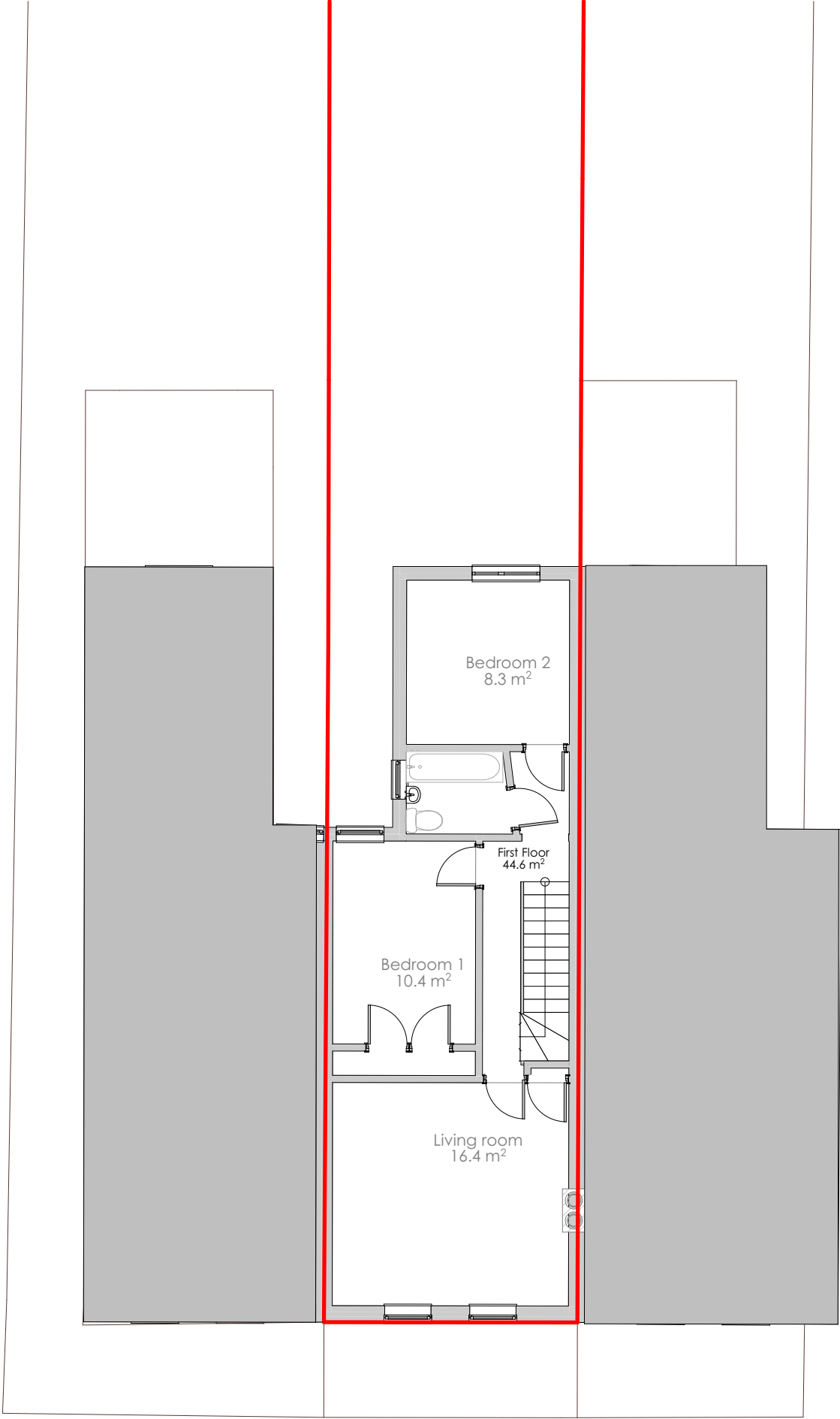
Drawing Title:
Proposed Ground Plan

Drawing Date: 18-02-2026	Status: Proposed	
Issue Date: 26/02/2026	Drawn By: PD	Scale: 1:100@A3
Job No: 9520	Drawing No: 9520 PL-04.02	Rev:



1:100

First Floor

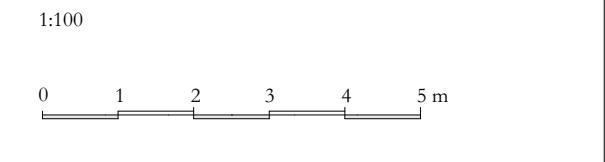


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Notes:

Date	Rev	Comments	By	Chk'd



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Job Title:
20 Coldicutt StCaversham, Reading RG4 8DU, UK

Drawing Title:
Proposed First Floor Plan

Drawing Date: 18-02-2026	Status: Proposed	
Issue Date: 05/03/2026	Drawn By: PD	Scale: 1:100@A3
Job No: 9520	Drawing No: 9520 PL-04.03	Rev: