

FLOOD RISK ASSESSMENT REPORT FOR THE PINNACLE, 20 TUDOR ROAD, READING, RG1 1NH

DOCUMENT NUMBER: C3586-R1-REV-A

PREPARED BY



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APPENDICES

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1. SITE DETAILS

Site Name	The Pinnacle
Site Address	The Pinnacle, 20 Tudor Road, Reading, RG1 1NH
Purpose of Development	Residential
Existing Land Use	Offices
County	Reading
Country	England
Local Planning Authority	Reading Borough Council

1.1. Site Location

The location plan of the project site is provided in Appendix A.

1.2. Existing Site Description and Topography

A drawing showing the existing site layout and the layout plans for each floor are included in Appendix A, and this shows the existing use on these floors as office use.

1.3. Proposed Development

The proposal involves the conversion of five floors of an existing office building to 82 residential units.

The layout and location of the proposed development are shown in the drawings provided in Appendix A.

2. PLANNING POLICIES

2.1. National Planning Policy

- National Planning Policy Framework (December 2024)
- National Planning Practice Guidance Suite (August 2022)

2.2. Local Planning Policy

This report has been written in conjunction with the following local planning policies:

- Reading Borough Council Level 1 and Level 2 Strategic Flood Risk Assessment.
- Reading Borough Council Preliminary Flood Risk Management Strategy.

3. FLOOD RISK

The possible causes of flooding set out in NPPF are considered in this section in relation to flood risk to the site itself and the effects of the development of the site on the flood risk elsewhere.

3.1. Flood Zones

The Environment Agency has developed a flood risk map, shown below which shows the relative risk of flooding for different return periods. Flood zones assume that no defences are present and so where these do exist they are only indicative of the potential for flooding.

The development lies within flood zone 2 of the Environment Agency's Flood risk map, as shown overleaf. Land located within flood zone 2 is at a medium low risk of flooding, having an associated annual probability of between less 1 in 100 and 1 in 1000.

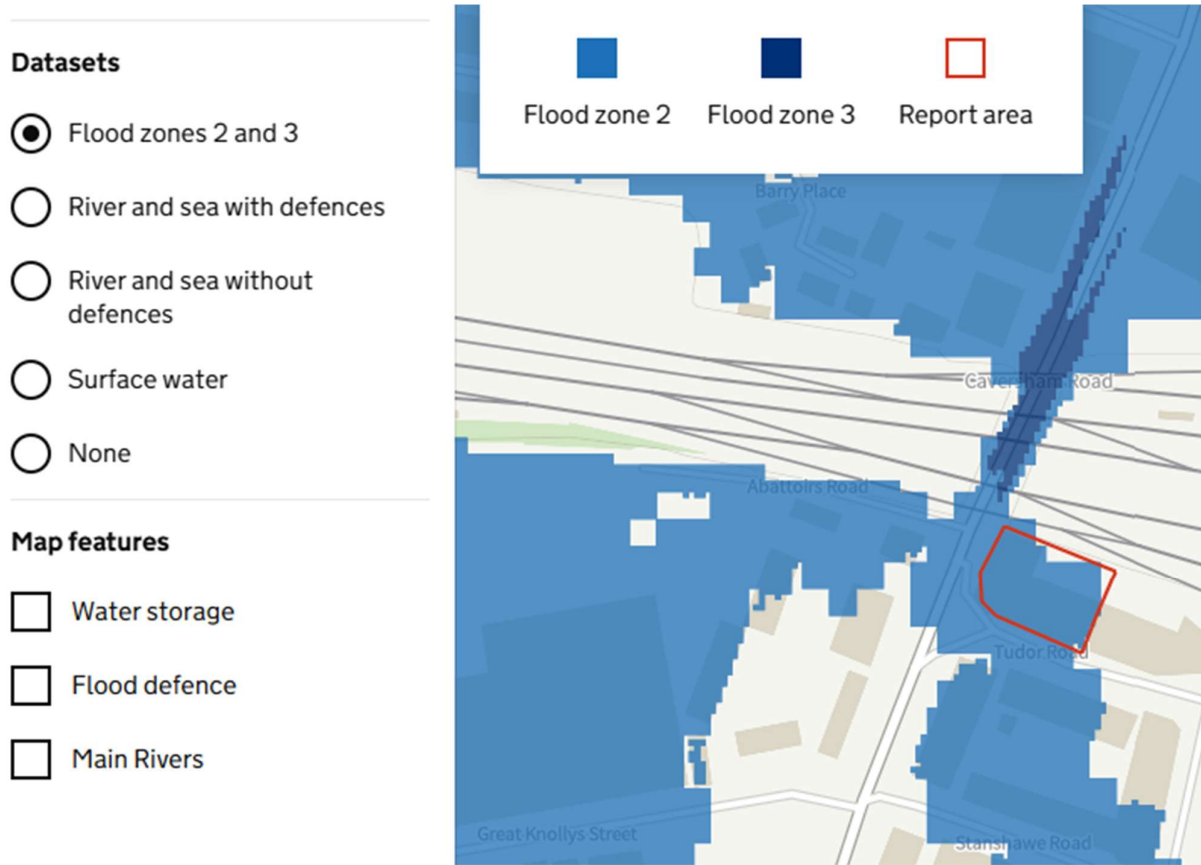


Figure 1 – Environment Agency Flood Map for flooding extent from rivers and sea for the proposed development.

As can be seen from the above map and the site boundary plan provided in Appendix A, the majority of the site is located within Flood zone 2, and in accordance with Table 1 from the NPPF's technical guidance, land within Flood zone 2 is suitable for any use subject to a Flood Risk Assessment. Therefore we have requested Environment Agency modelled flood level data, provided in Appendix A.

Assessment of this site has been based upon the Environment Agency's flood map, modelled flood level data, the Strategic Flood Risk Assessment report, the existing site plan, and the architect's proposed development layout.

Table 1: NPPF Flood Zone Guidance

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
Zone 1 Low Probability	This zone comprises land assessed as having a less than 1 in 1000 annual probability of river or sea flooding in any year (0.1%<).	All uses of land are appropriate in this zone.	For development proposals on sites compromising one hectare or above the vulnerability to flooding from other sources as well as from river and sea flooding, and the potential to increase flood risk elsewhere through addition of hard surfaces and the effect of new development on surface water run-off should be incorporated in a FRA. This need only be brief unless the factors above or other considerations require particular attention. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to reduce the overall level of flood risk in the area and beyond through the layout and form of development, and the appropriate application sustainable drainage techniques.
Zone 2 Medium Probability	This zone comprises land assessed as having between a 1 in 1000 annual probability	The water-compatible less vulnerable and more vulnerable uses of land and essential infrastructure in	All development proposals should be accompanied by a	In this zone developers and local authorities should seek opportunities to reduce the overall level of flood risk in the

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea flooding (0.5%-0.1%) in any year	Table D 2 are appropriate in this zone. Infrastructure in Table D.2 are appropriate in this zone. Subject to the sequential Test being applied the highly vulnerable uses in Table D.2 are only appropriate in this zone if the exception Test (see para. D.9) is passed.	FRA. See Annex E for minimum requirements.	area through the layout of form and development, and the appropriate application of sustainable drainage techniques.
Zone 3a High Probability	This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 greater annual probability of flooding from sea (>0.5%) in any year.	The water compatible and less vulnerable uses of land in Table D.2 are appropriate in this Zone. The highly vulnerable uses in Table D.2 should not be permitted in this zone. The more vulnerable and essential infrastructure uses in D.2 should only be permitted in this zone if the Exception Test (see para.	All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: i. reduce the overall level of flood risk in the area through the layout and form of the development and appropriate application of sustainable drainage techniques. ii. relocate existing development to land in zones with a lower probability of flooding; and iii. create space for flooding to occur by restoring functional

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
		D.9) is passed Essential Infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood.		floodplain and flood pathways and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b The Functional Flood Plan	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. But land which would flood with an annual	Only the water-compatible uses and the essential infrastructure listed in Table D.2 that has to be there should be permitted on this zone. It should be designed and constructed to: • remain operational and safe for users in times of flood; • result in no net loss of floodplain storage; • not impede water flows; and • not increase flood risk elsewhere • Essential infrastructure in this zone should pass the Exception Test.	All development proposals in this zone should be accompanied by a FRA. See Annex E for minimum requirements.	In this zone, developers and local authorities should seek opportunities to: - reduce the overall level of flood risk area through the layout and form of the development and appropriate application of sustainable drainage techniques; and - relocate existing development to land with a lower probability of flooding.

The Pinnacle, 20 Tudor Road, Reading, RG1 1NH

Nimbus Engineering Consultants Ltd

Flood Risk Assessment Report

July 2025

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	probability of 1 in 20 (5%) or greater in any year, or is designed to flood in an extreme (0.1%) flood should provide a starting point for consideration and discussions to identify the functional floodplain.			

3.2. Flood Vulnerability

Table 2 below, which has been extracted from NPPF's technical guidance, highlights the flood risk vulnerability of various developments. This information is based partly on DEFRA/Environment Agency research and 'Flood Risks to People' (FD2321/Tr2) and also on the need of some uses to keep functioning during flooding.

Buildings that combine a mixture of uses should be placed into the higher of the relevant classes of flood risk sensitivity. Developments that allow uses to be distributed over the site may fall within several classes of flood risk sensitivity.

The impact of a flood on a particular use identified within this flood risk vulnerability classification will vary within each vulnerability class. Therefore, the flood risk management infrastructure and risk mitigation measures needed ensure the development may differ between uses within a particular vulnerability classification.

Table 2: NPPF's Flood Risk Vulnerability Classification

Essential Infrastructure	• Essential transport infrastructure and strategic utility infrastructure, including electricity generating stations and grinds and primary substations.
Highly Vulnerable	• Police, Ambulance and Fire stations and command centres, and telecommunications installations and emergency disposal points. • Basement Dwellings, caravans, mobile homes and park homes intended for permanent residential use. • Installations requiring hazardous substance consent.
More Vulnerable	• Hospitals, residential institutions such as care homes, children's homes, social services homes, prisons and hostels. • Buildings used for dwelling house, student halls of residence, drinking establishments, nightclubs,

	hotels and sites used for holiday or short-let caravans and camping. • Non-residential uses for health service, nurseries and educations. • Landfill and waste management facilities for hazardous waste.
Less Vulnerable	• Buildings used for shops, financial, professional and other services, restaurants and cafes, offices, industry, storage and distribution and assembly and leisure. • Land and buildings used for agriculture and forestry. • Waste treatment (except landfill and hazardous waste facilities), mineral workings and processing (except for sand and gravel). • Water treatment plants and sewerage treatment plans (if adequate pollution control measures are in place.)
Water-compatible Development	• Flood control infrastructure, water transmission infrastructure and pumping stations. • Sewerage transmission infrastructure and pumping stations. • Sand and Gravel workings • Docks, marinas and wharves, navigational facilities. • MOD defence installations • Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location. • Water-based recreation (excluding sleeping accommodation) • Lifeguard and coastguard stations • Amenity open space, nature conservation and sports recreation. • Essential sleeping or residential accommodation for staff required by users in this category, subject to a warning and evacuation plan.

From the flood risk vulnerability classification table above, taken from the NPPF's technical Guidance, Buildings used for dwelling houses come within the 'more vulnerable' classification. However, based on the Environmental Agencies flood map, the development site is located within Flood Zone 2 and in accordance with Table 3, overleaf, is therefore suitable for any development, subject to this Flood Risk Assessment.

Table 3: NPPF's Flood Risk Vulnerability and Flood Zone Compatibility

Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone 1	✓	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception Test	✓	✓
Flood Zone 3a	Exception Test	✓	X	Exception Test	✓
Flood Zone 3b	Exception Test	✓	X	X	X

Key: ✓ Development is appropriate
X Development should not be permitted

4. FLOOD RISK ASSESMENT

The possible causes of flooding set out in NPPF's technical guidance are considered in this section in relation to the flood risk to the site itself and the effects of the development of the site on flood risk elsewhere.

4.1. Fluvial or Tidal Flooding

The site is located north of the River Kennet, and south of the River Thames. With the risk of flooding caused by the River Thames This is confirmed by the Environment Agency data is provided in Appendix B.

Flood depths for various node points have been provided within the Environment Agency data, as shown overleaf:

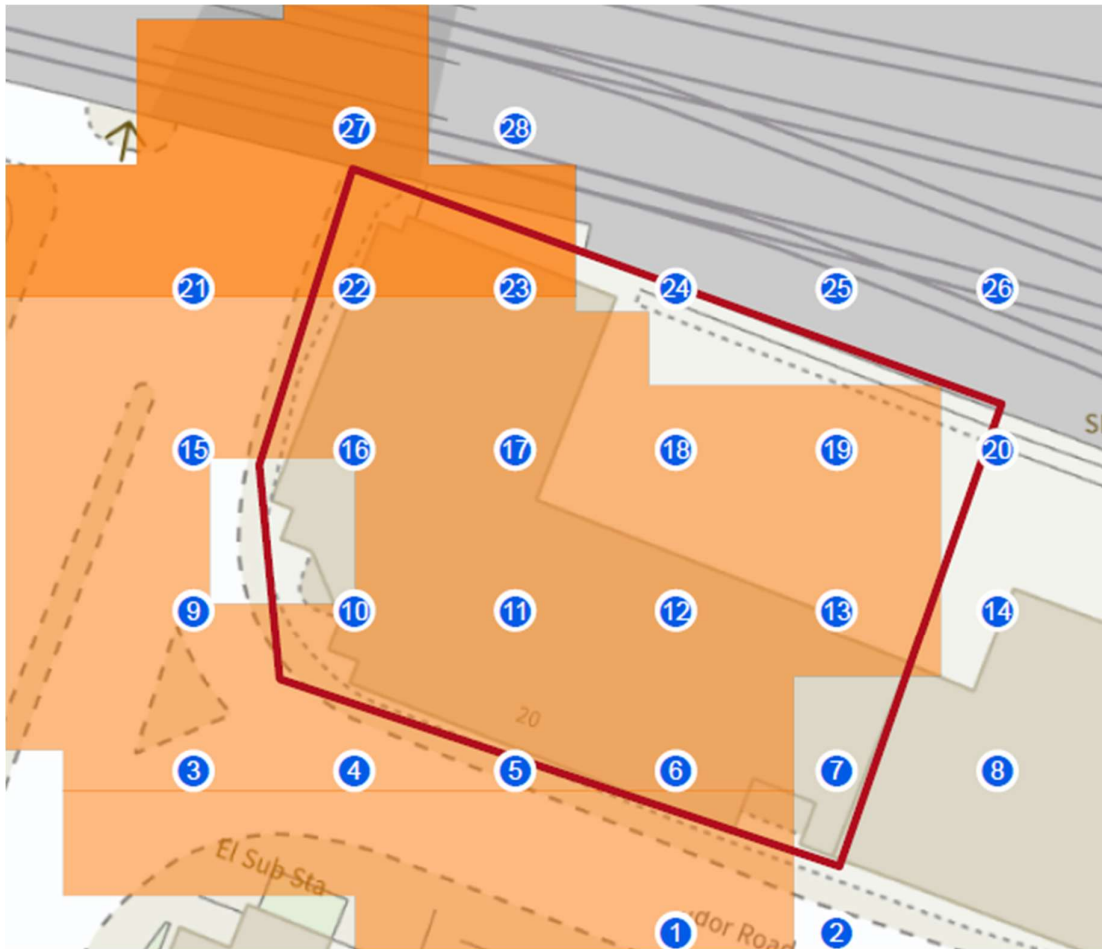


Figure 2 – Environment Agency Product 4, node data plan.

The majority of the ground floor is an undercroft car park, with the front entrance of the site and parts of this area proposed for a plant room, and two dwellings. Therefore for the purposes of this report, we have assessed nodes 10, 16, 17 and 22.

Node 10 is located just off the front entrance to the building, and the flood depth for the 1 in 100 year plus 70% event is shown as 0.46 metres in depth. However this is based on the external road level, whereas the internal ground level of this entrance is approximately 250mm higher than this road level. Therefore the expected flood level will be 210mm. However to ensure that no flood water enters the building, this will be

raised a further 300mm above the original ground floor finished floor level, and allow all access via ramps. Therefore the proposed dwellings will not be affected by this fluvial flooding, in a 1 in 100 year plus 70% flooding event.

Node 16 is located at the area of the fire exits to the plant room, and the flood depth here for the 1 in 100 year plus 70% event is shown as 0.46 metres in depth. However the client will provide a flood proof door and the plant room will be raised 500mm above the external ground level to ensure that there is no flood water entering the plant room also.

Node 17 is located at the area of the fire exit from the car park to the building, and the flood depth here for the 1 in 100 year plus 70% event is shown as 0.34 metres in depth. However as discussed previously, the finished floor level of the ground floor will be raised by 300mm above the existing finished floor level, and the existing finished floor level is already 150mm above the external ground level, therefore no flood water should enter this building. Furthermore, the client will provide a flood proof door and mitigation measures to ensure that if any flood water does enter this fire exit door, any drying and cleaning would be minimal. Also a large slot drain will be provided to the entrance of this doorway, to capture any flood water that enters this door.

A plan of the ground floor of the site has been provided in Appendix A, and shown overleaf.

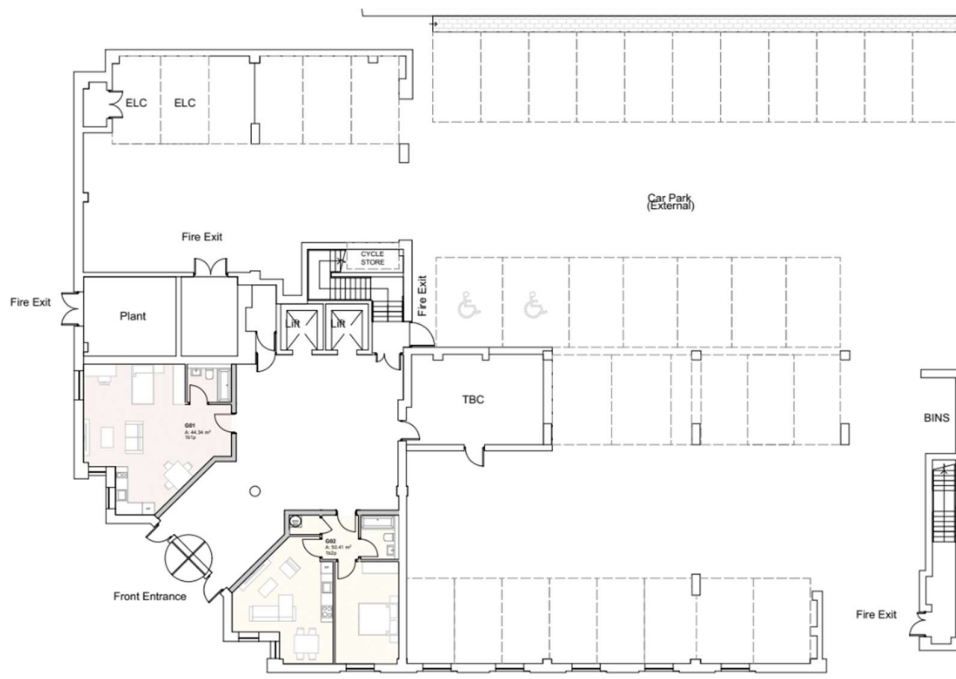


Figure 3 – Ground floor plan showing all entrances and exits to the building

The site is also not at risk of tidal flooding, this can also be confirmed by the Environment Agency's Flood map in Section 3.1.

4.2. Flooding from Land (Overland Flow)

The proposed development site is at a very low risk of surface water flooding, as is the road immediately adjacent to the site, and this can be confirmed by the Environment Agency's Flood map shown overleaf.

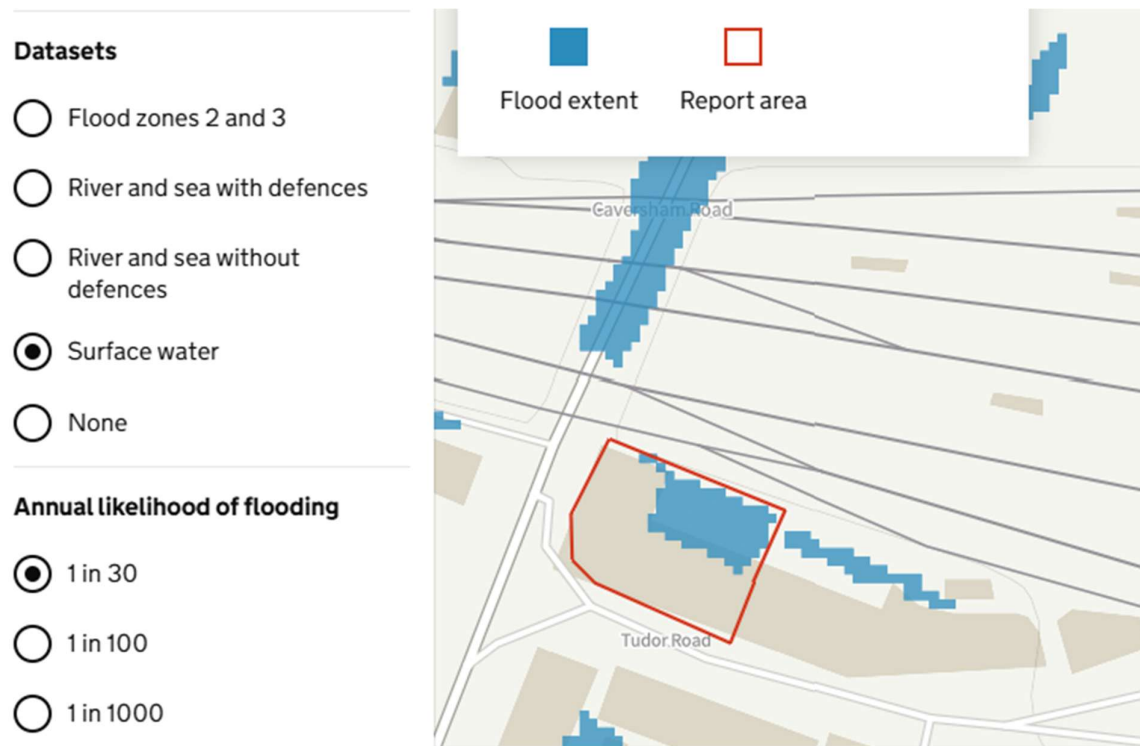


Figure 4 – Environment Agency Surface Water Flood Map, 1 in 30 year storm event, for the proposed development.



Figure 5 – Environment Agency Surface Water Flood Map, 1 in 100 year storm event, for the proposed development.

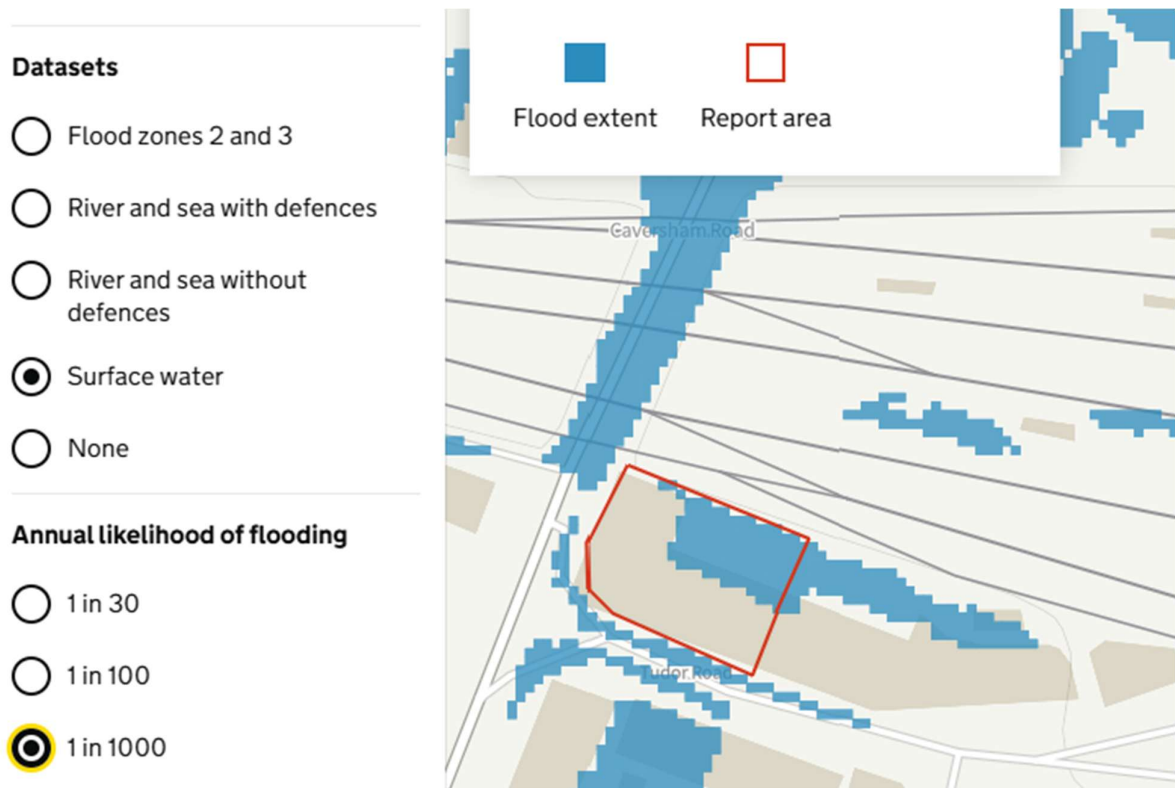


Figure 6 – Environment Agency Surface Water Flood Map, 1 in 1000 year storm event, for the proposed development.

This surface water flooding is caused by water ponding in naturally low lying areas at the site, however the flooding only extends to under the undercroft car parking area, and will not enter the building. The main entrance is not affected by this surface water flood risk, therefore no flood water will enter the building, via this route.

Judging from a site visit, for which a video can be provided, the levels at this area show that the maximum depth of flooding in this area is unlikely to be higher than 250mm for the 1 in 1000 year storm event.

4.3. Flooding from Groundwater

The Environment Agency's website confirms that groundwater flooding is unlikely in this area. As the proposals are for internal changes and reconfiguration, there will be no deep excavations proposed.

4.4. Flooding from Sewers

There is no risk of sewer flooding at this site, and this is confirmed by the Strategic Flood Risk Assessment Report.

4.5. Flooding from Reservoirs

There is a risk of reservoir flooding to this site from any reservoirs. This can also be confirmed by the map, from the Environment Agency's website, shown overleaf.

The likelihood of a reservoir failing is very low, and flood warning measures are in place.

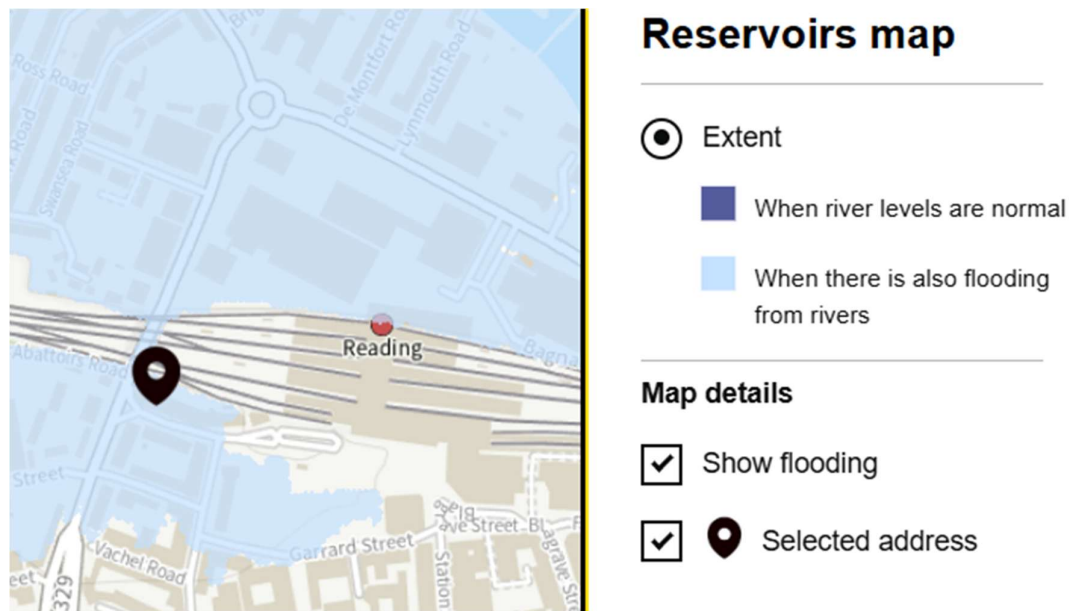


Figure 7 – Environment Agency Reservoir Flood Map, 1 in 1000 year storm event, for the proposed development.

5. SAFE ACCESS AND EGRESS

Although the proposed development site is at a very low risk of fluvial and pluvial flooding. Key routes surrounding the site are at a risk of fluvial and pluvial flooding, therefore there will be issues with access and egress to the site during extreme fluvial and pluvial events, and residents needs to be made aware of hidden dangers such as blown manholes.

Occupants will be required to sign up to the Environment Agency's Flood line on 0345 988 1188 in order to receive flood warnings, as well as making sure they are aware of any extreme storm events that may cause surface water flooding. The fluvial flooding events will restrict access and egress to the site therefore the residents will be advised to remain in their properties once a flood warning has been issued.

However the surface water flooding is localised along the access and egress routes, therefore the occupants are advised not to drive through flood water, and to avoid journeys during extreme storm events which may cause localised flooding along the access and egress routes.

6. MITIGATION AND RESILIENCE MEASURES

The finished floor level of the ground floor of this building will be raised 300mm higher than the existing ground flood level. Furthermore the building is currently raised approximately 150mm to 250mm above the external ground levels. The plant room will be raised 500mm above the external ground level to ensure that no flood water enters the building.

In order to mitigate risks to the residents, the owners of this property will be required to sign up to Floodline Warnings direct on 0345 988 1188 in order to receive flood warnings from the Environment Agency via text, phone or email, as well as being presented with a copy of this Flood Risk Assessment in order to understand the access and egress risks to the associated with the flood risk in the area. Once the flood warning has been received, occupants of the building will be required seek refuge in the upper floors and remain in here until told otherwise by the emergency services.

Various mitigation and resilience measures will be incorporated into the fabric of the building to ensure that if any flood water does enter the building, during an unlikely breach in the flood defences, even though the proposed ground finished floor levels are raised above the modelled flood levels. This is a precautionary measure to ensure drying, and cleaning is simpler.

The resilience measures to be adopted, are as follows:

- All air vents to be located 600mm above the finished floor level.
- Electricity consumer unit and mains connection point to be located 600mm above the finished floor level, with all feeds to go down the building from the ceiling.
- Non return valves to be used in drainage design to prevent back up of flow.
- All water, electricity and gas meters to be located 600mm above the finished floor level.
- Adequate sealing of joints between the internal units required to prevent any penetration of water behind fittings.
- Heating systems such as boiler units and ancillary devices to be located 600mm above the finished floor level.
- Waterproof paint to be used internally

Once a flood warning has been received, the owners of the property will be advised to remain in their property, unless told otherwise by the emergency services.

Residents should not attempt to walk through floodwater unless instructed to do so.

6.1 Safe Access and Egress

Residents should not attempt to walk through floodwater, once the area has become inundated. Therefore, it would be deemed more appropriate to remain in their dwellings until residents can be safely evacuated.

As part of the deeds, the owners of these properties/and or tenants will be required to sign up to Floodline Warnings direct on 0345 988 1188, in order to receive flood warnings from the Environment Agency via text, phone or email, as well as being presented with a copy of this Flood Risk Assessment in order to understand the access and egress risks within the flood risk area.

Residents are also advised to prepare a flood plan, which includes a checklist of things to consider during a flood. The residents should have an emergency flood grab bag ready so they can 'grab' and take this to the evacuation area, if asked to do so by the emergency services, in the event of a flood.

It is essential that the grab bag should include the following items:

- Torch
- Warm and waterproof clothing for all residents
- Food
- Medication
- Rubber gloves
- Wellingtons

You should also consider the following items in this grab bag:

- Toys for children and pets
- Change of clothes

7. CONCLUSIONS

The purpose of this report is to satisfy the local planning authority that the risk of flooding from all sources has been assessed, and the proposed floors for this 'change of use' from office to residential are not a risk of flooding, and these proposals will not increase flood risk at the site or elsewhere.

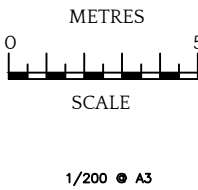
Key routes surrounding the site are at a risk of flooding, however a discussion of access and egress and appropriate measures have been provided in this report.

APPENDIX A - DRAWINGS



SOUTH WEST ELEVATION
BUILDING SCALE: 1/200

Legend			
A/C	Air Conditioner	H	Height
AB	Air Brick	IC	Inspection Cover
BOP	Brick Paving	IL	Invert Level
BO	Bollard	IR	Iron Railings
BS	Bus Stop	JB	Junction Box
BT	British Telecom cover	KO	Kerb Outlet
FC	Floor to Cill height	LP	Lamp Post
COL	Cover Level	LW	Light Well
CL	Celling Level	MH	Manhole
CH	Cill to head height	MT	Meter
CBF	Close Board Fence	OH	Overhead
CONC	Concrete	PT	Post
CPS	Concrete Paving Slabs	RAD	Radiator
CTV	Cable Television Cover	RS	Road Sign
DK	Drop Kerb	RWP	Rain Water Pipe
DH	Door Height	SVP	Salt Vent Pipe
EP	Electricty Pole	TCS	Telephone Call Box
FB	Flower Bed	TBM	Temp. Bench Mark
FC	False Ceiling	TL	Traffic Light
FE	Fire Escape	TK	Tank
FH	Fire Hydrant	UTL	Unable To Lift
PHR	Fire Hose Reel	V	Vent
FL	Floor Level	VP	Vent Pipe
GP	Gate Post	WM	Water Meter
GU	Gully	WP	Waste Pipe
GV	Gas Valve	WV	Water Valve



It is sole responsibility of all Contractors and Consultants to check all dimensions on site. Only figured dimensions are to be used. Any discrepancies to be reported prior to the commencement of any works. This drawing shall be used only for the purpose intended.

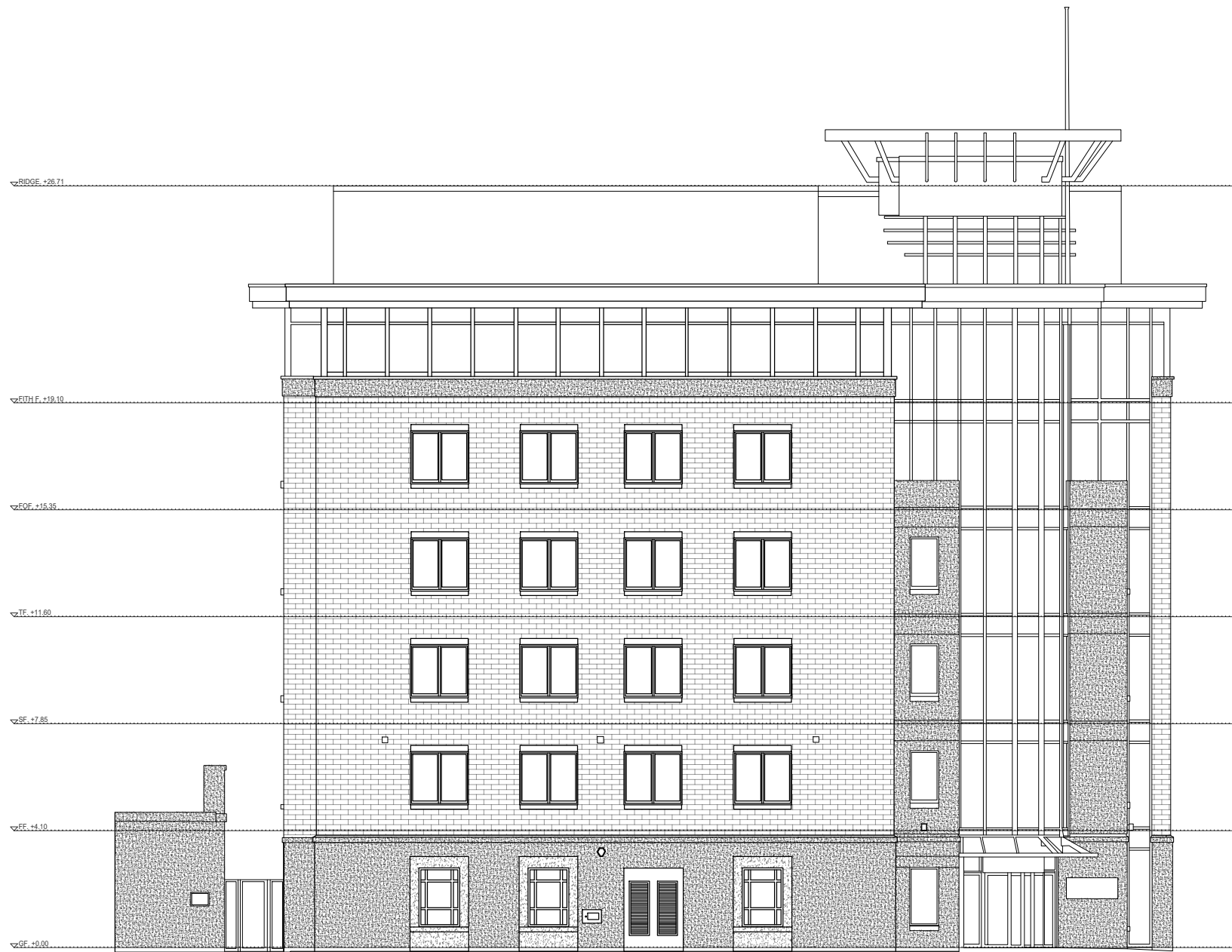
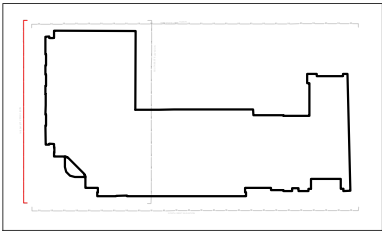
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No.	Revision/Issue	Date

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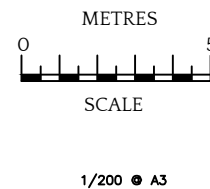
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NORTH WEST ELEVATION
BUILDING SCALE: 1/200

Legend			
A/C	Air Conditioner	H	Height
AB	Air Brick	IC	Inspection Cover
BOP	Brick Paving	IL	Invert Level
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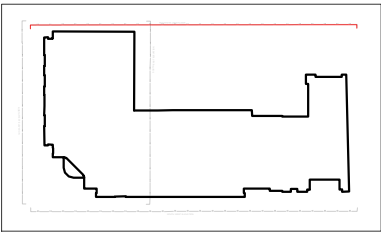
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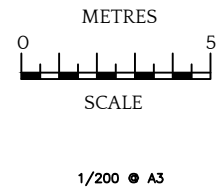
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NORTH EAST ELEVATION
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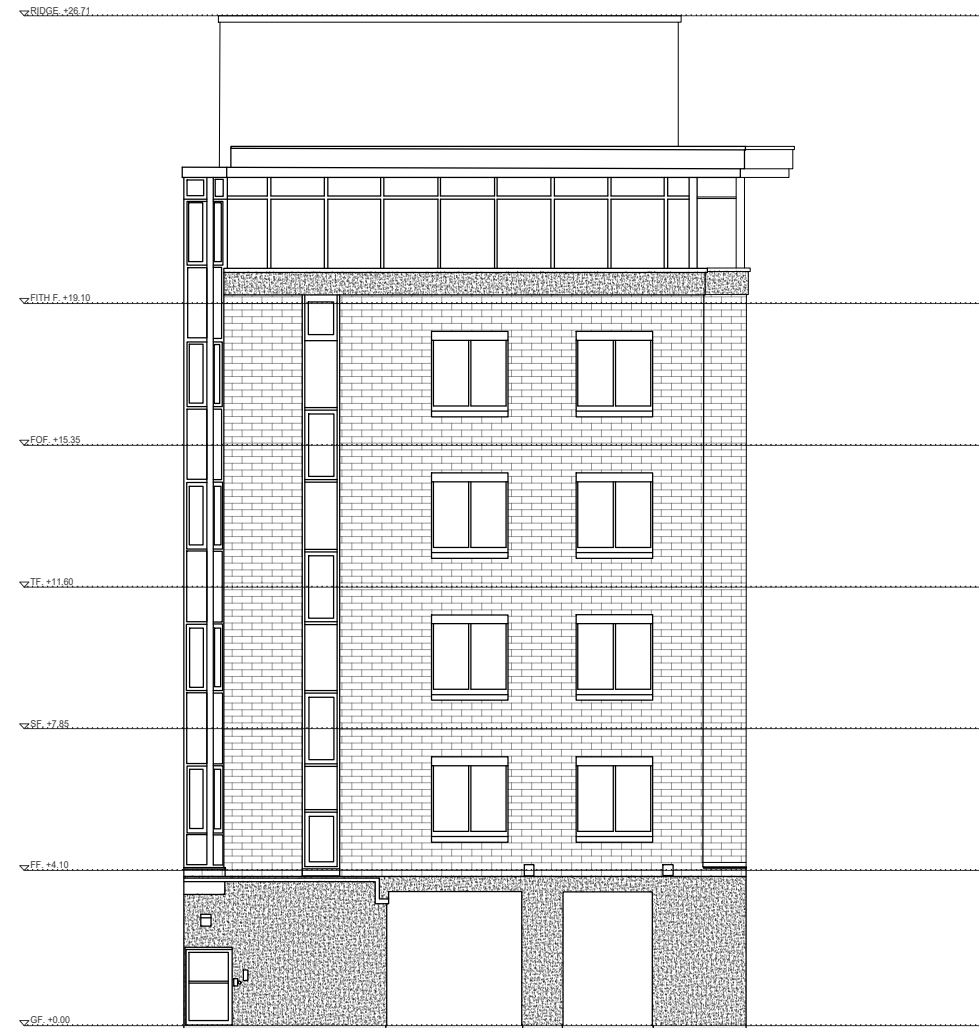
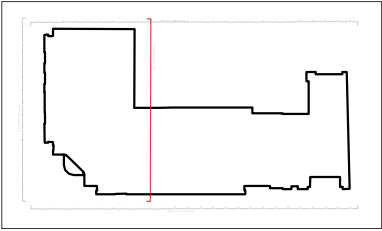
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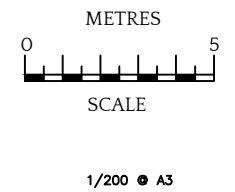
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SOUTH EAST ELEVATION
BUILDING SCALE: 1/10

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BO	Bollard	IR	Iron Railings
BS	Bus Stop	JB	Junction Box
BT	British Telecom cover	KO	Kerb Outlet
FC	Floor to Cill height	LP	Lamp Post
COL	Cover Level	LW	Light Well
CL	Ceiling Level	MH	Manhole
CH	Cill to head height	MT	Meter
CBF	Close Board Fence	OH	Overhead
CONC	Concrete	PT	Post
CPS	Concrete Paving Slabs	RAD	Radiator
CTV	Cable Television Cover	RS	Road Sign
DK	Drop Kerb	RWP	Rain Water Pipe
DH	Door Height	SVP	Salt Vent Pipe
EP	Electricty Pole	TCS	Telephone Call Box
FB	Flower Bed	TBM	Temp. Bench Mark
FC	False Ceiling	TL	Traffic Light
FE	Fire Escape	TK	Tank
FH	Fire Hydrant	UTL	Unable To Lift
PHR	Fire Hose Reel	V	Vent
FL	Floor Level	VP	Vent Pipe
GP	Gate Post	WM	Water Meter
GU	Gully	WP	Waste Pipe
GV	Gas Valve	WV	Water Valve



It is sole responsibility of all Contractors and Consultants to check all dimensions on site. Only figured dimensions are to be used. Any discrepancies to be reported prior to the commencement of any works. This drawing shall be used only for the purpose intended.

Hedges, banks / fences do not represent any actual agreed physical boundaries unless stated.

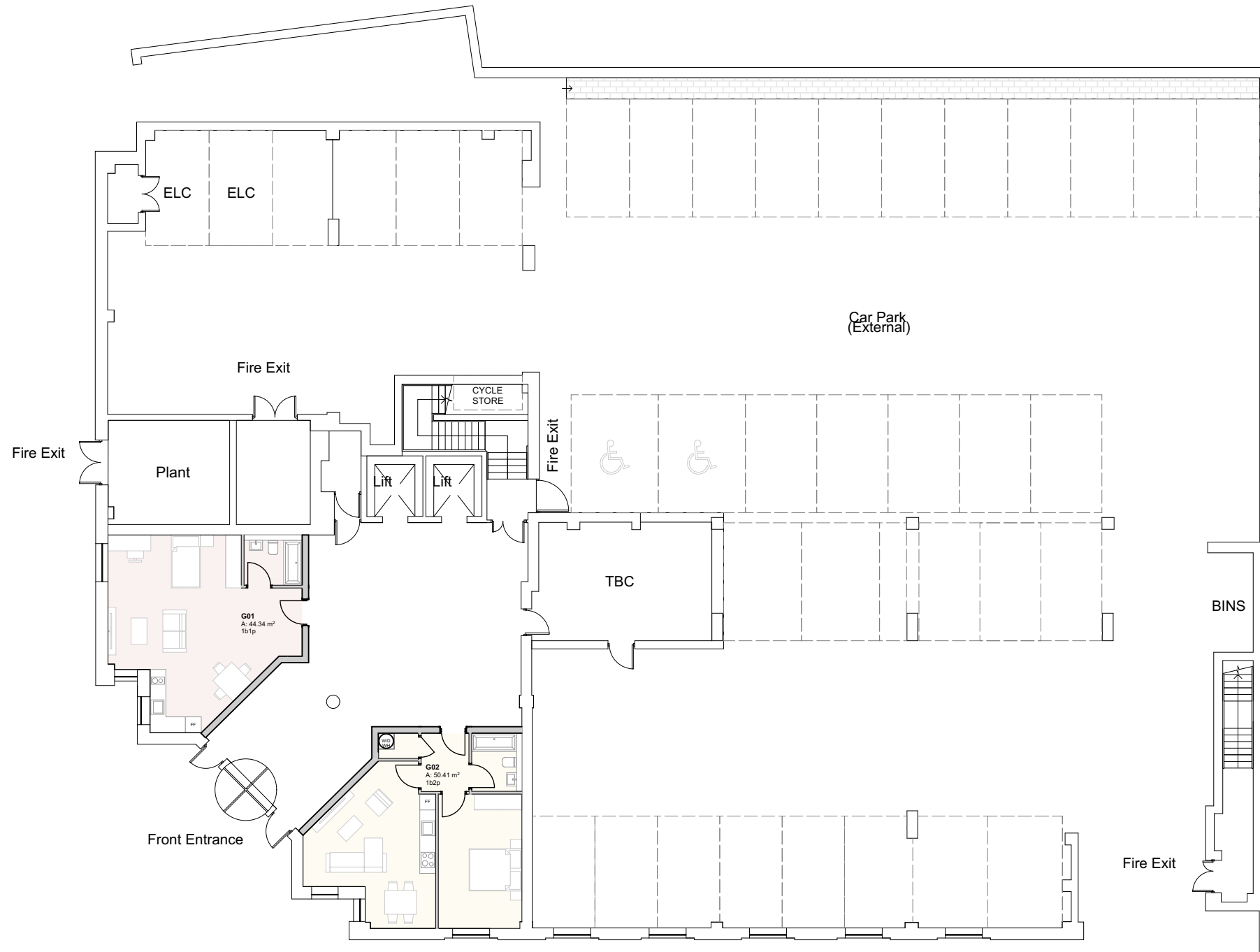
No.	Revision/Issue	Date

0203 576 0922 | info@sbileaseplans.co.uk

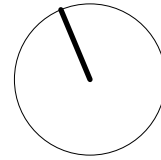
Client	SP.
Address	The Pinnacle, 20 Tudor Road, Reading RG1 1NH
Project	The Pinnacle
Scales	1/100 @ A3

Surveyed	Drawn	Checked	Sheet
P.H	A.F	E.E	4/04
Date	18/06/2025		
Drawing No	The Pinnacle		

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PROJECT NORTH



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PROJECT

The Pinnacle, 20 Tudor Road
Reading RG1 1NH

CLIENT

SCALE
1:200 @ A3

DATE
13/06/25

DRAWN BY
OF

APPROVED BY
EM

DRAWING

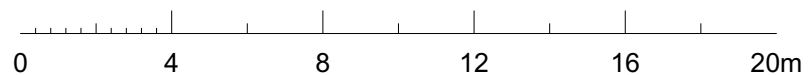
Ground Floor Plan

Purpose:

PROJECT NO / DRAWING NO
32508 /SK01

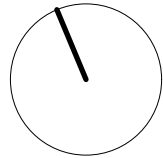
REVISION

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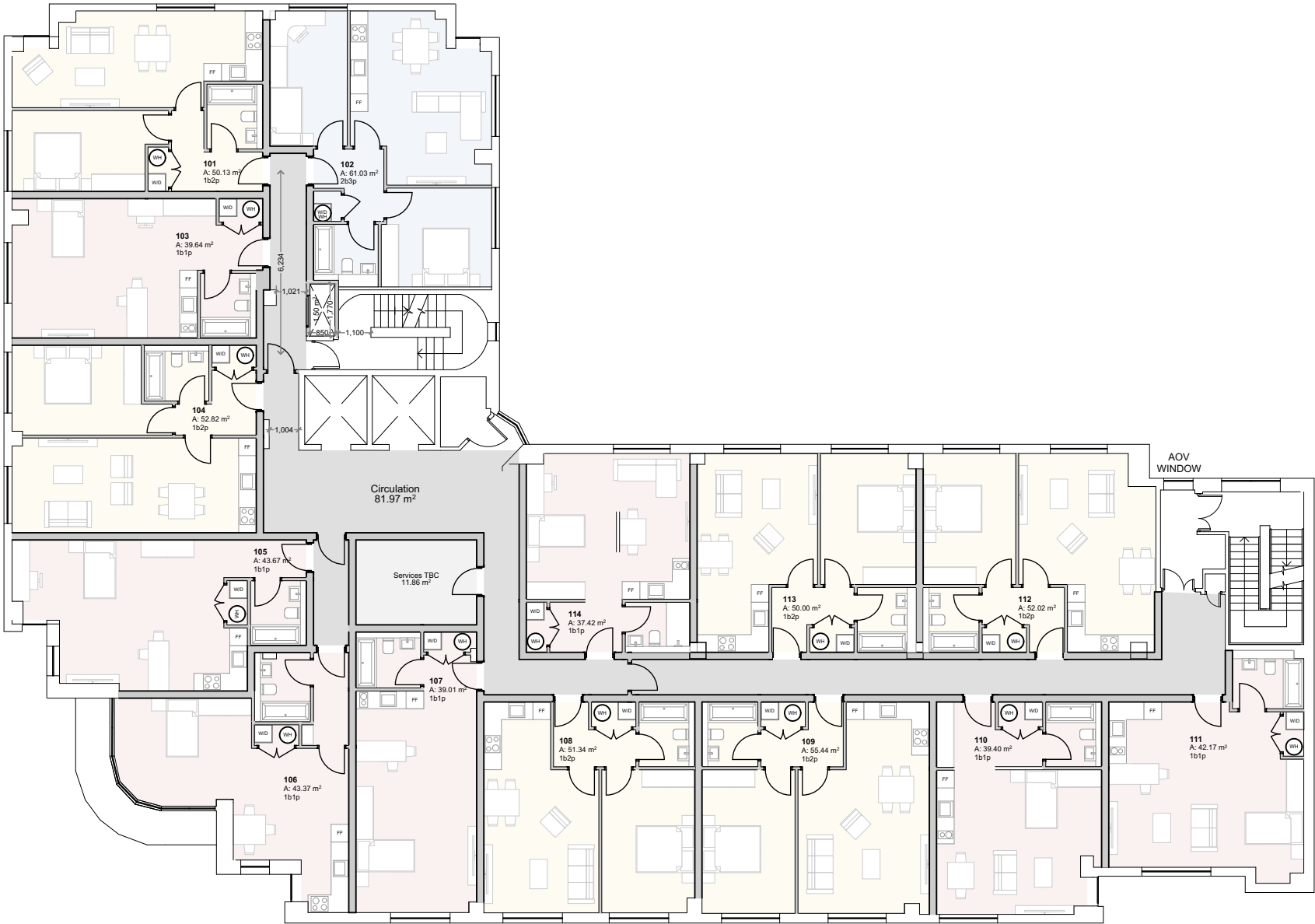


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Reading RG1 1NH

CLIENT

SCALE	DATE	DRAWN BY	APPROVED BY
1:200 @ A3	13/06/25	OF	EM

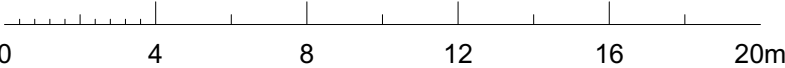
DRAWING
1st, 2nd and 3rd Floor Plans

Purpose:

PROJECT NO / DRAWING NO
32508 /SK02

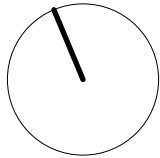
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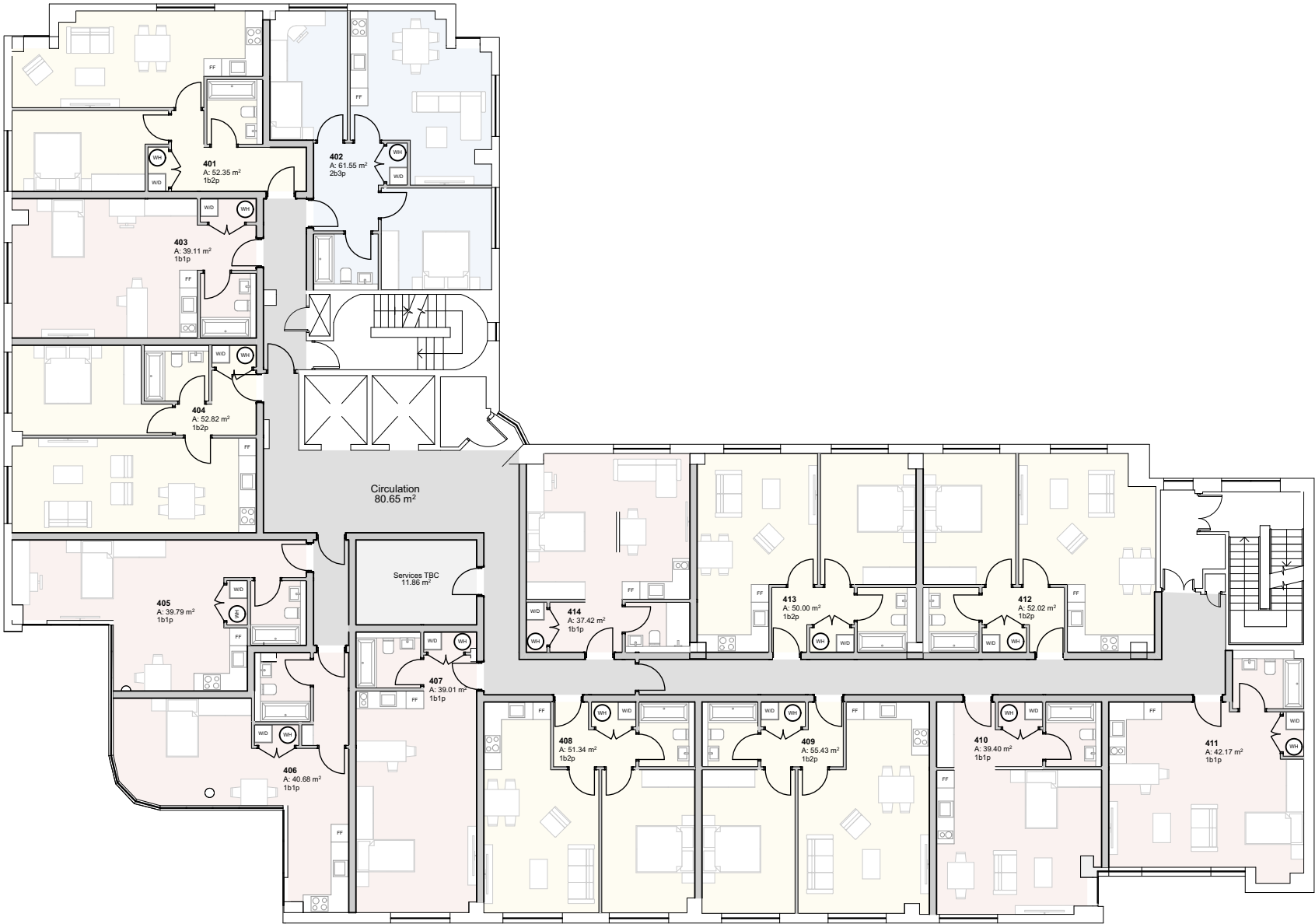


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PROJECT
The Pinnacle, 20 Tudor Road
Reading RG1 1NH

CLIENT

SCALE	DATE	DRAWN BY	APPROVED BY
1:200 @ A3	13/06/25	OF	EM

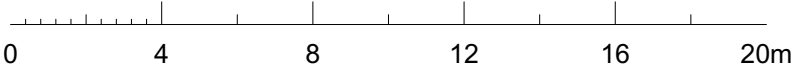
DRAWING
4th Floor Plan

Purpose:

PROJECT NO / DRAWING NO
32508 /SK03

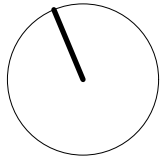
REVISION

SCALE 1:200

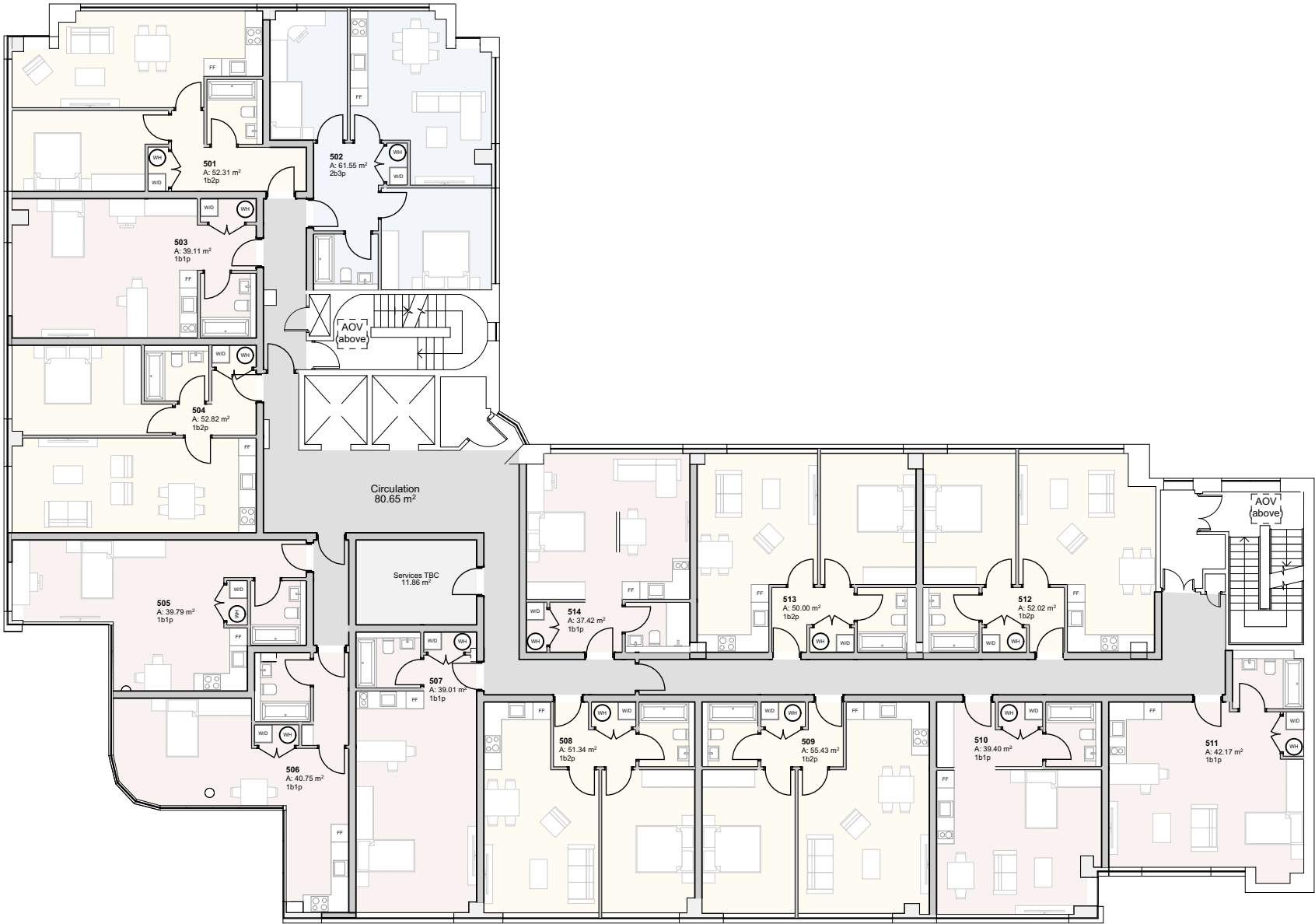


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PROJECT
The Pinnacle, 20 Tudor Road
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CLIENT

SCALE	DATE	DRAWN BY	APPROVED BY
1:200 @ A3	13/06/25	OF	EM

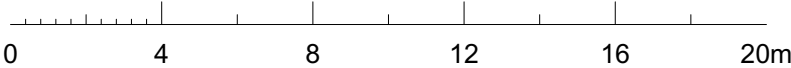
DRAWING
5th Floor Plan

Purpose:

PROJECT NO / DRAWING NO
32508 /SK04

REVISION

SCALE 1:200



APPENDIX B – ENVIRONMENT AGENCY CORRESPONDENCE DATA

Product 4 (Detailed Flood Risk) for RG1 1NH

Our Ref: EIR2025/14893

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 and NOT on Main River

Description: This location is not on Main River and we do not hold defence information for this area. There may be an ordinary watercourse nearby which could affect the site. Please contact your local authority for further details.

Model information

EIR2025/14893

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.

Model information

EIR2025/14893

Model: **Kennet (Tyle Mill to Thames Confluence) 2018**

Description: The information provided is taken from the Kennet (Tyle Mill to Thames confluence) 2018. The study was carried out using 1D-2D modelling software (Flood modeller-Tuflow).

Model design runs:

1 in 2/ 50% AEP; 1 in 5 / 20% AEP; 1 in 20 / 5% AEP; 1 in 30/ 3.3% AEP; 1 in 75 / 1.3% AEP; 1 in 100 / 1% AEP; 1 in 100+15% / 1% + 15% AEP with climate change; 1 in 100+25% / 1% + 25% AEP with climate change; 1 in 100+35% / 1% + 35% AEP with climate change; 1 in 100+70% / 1% + 70% AEP with climate change; and 1 in 1000 / 0.1% AEP.

Mapped Outputs:

1 in 2/ 50% AEP; 1 in 5 / 20% AEP; 1 in 20 / 5% AEP; 1 in 30/ 3.3% AEP; 1 in 75 / 1.3% AEP; 1 in 100 / 1% AEP; 1 in 100+15% / 1% + 15% AEP with climate change; 1 in 100+25% / 1% + 25% AEP with climate change; 1 in 100+35% / 1% + 35% AEP with climate change; 1 in 100+70% / 1% + 70% AEP with climate change; and 1 in 1000 / 0.1% AEP.

Hazard Mapping

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)

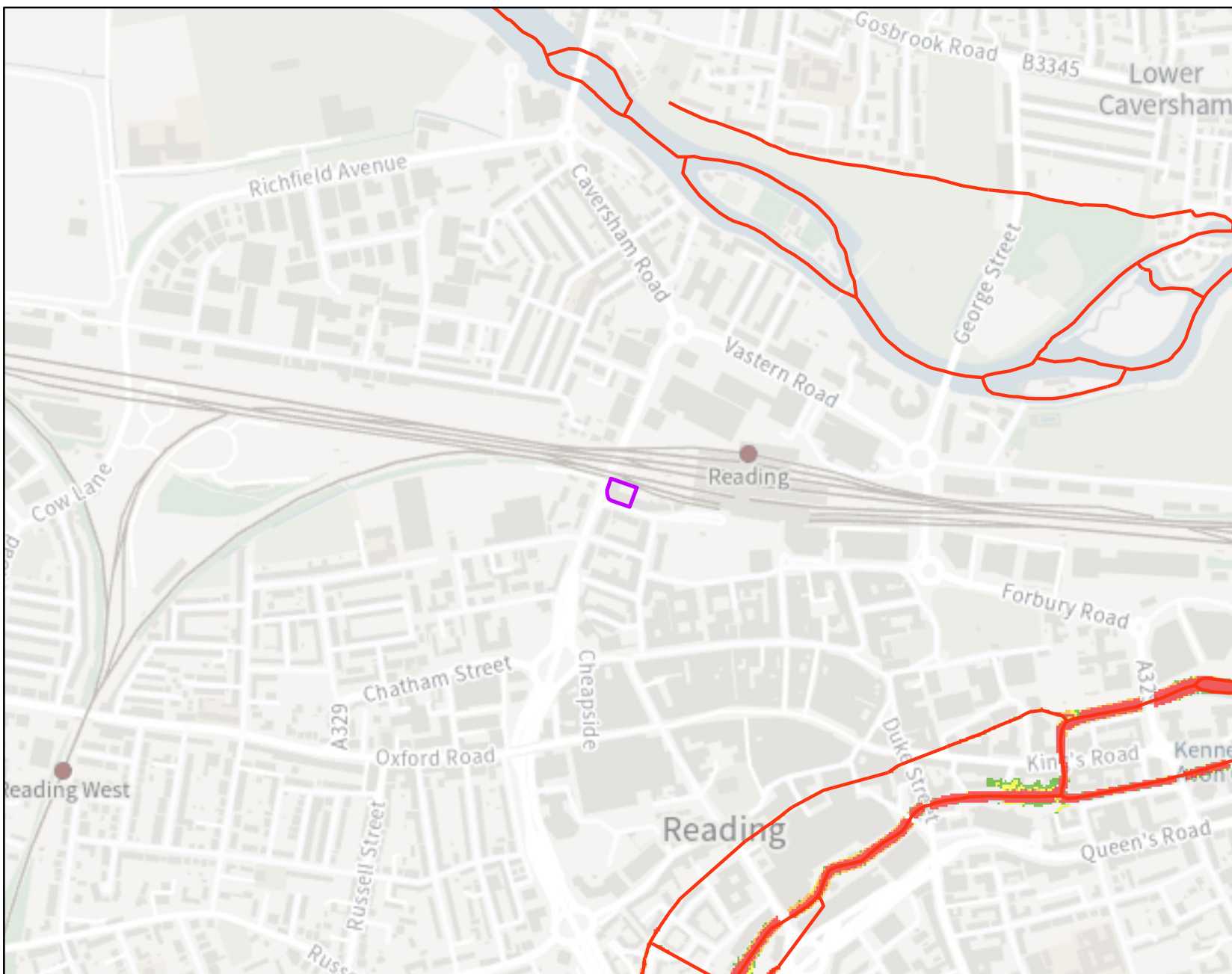
The resultant hazard rating is then classified according to:

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%+35% climate change scenario) centred on RG1 1NH

Created on 04/07/2025 REF: EIR2025/14893 (Kennet 2018)



Legend

- Statutory Main Rivers
- RG1 1NH
- 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

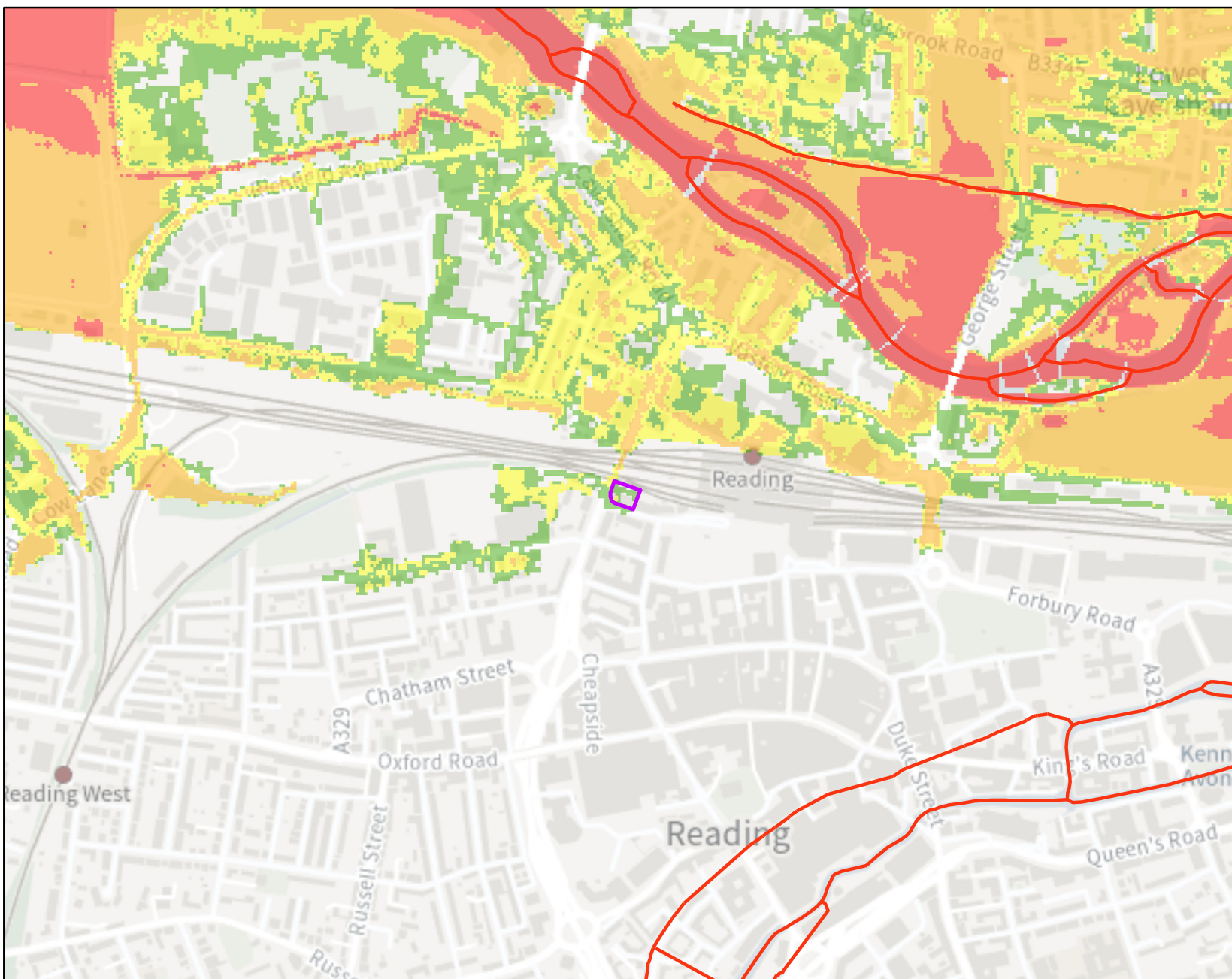
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

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

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%+35% climate change scenario) centred on RG1 1NH

Created on 04/07/2025 REF: EIR2025/14893 (Thames 2019)



Legend

- Statutory Main Rivers
- RG1 1NH
- 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

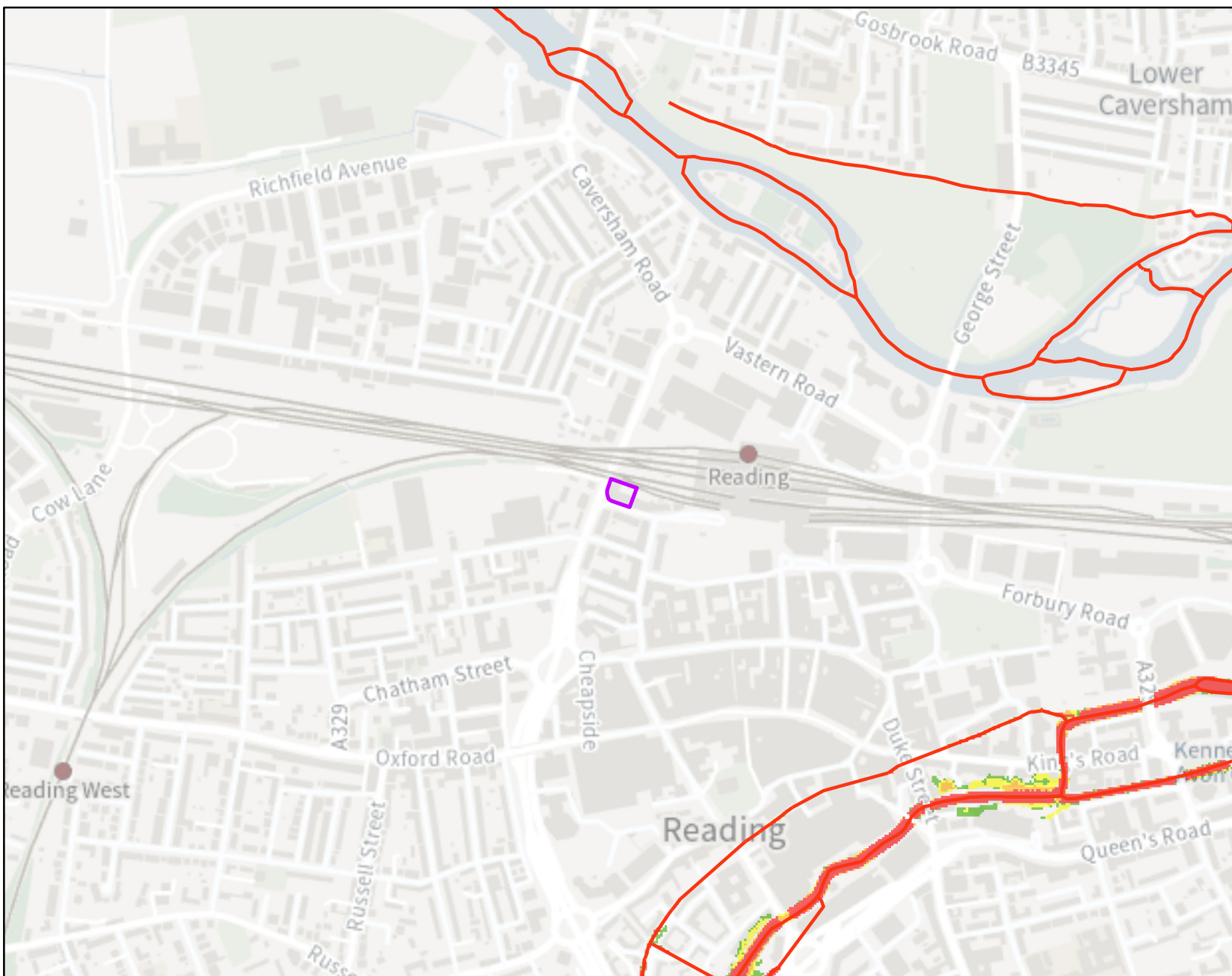
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

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

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%+70% climate change scenario) centred on RG1 1NH

Created on 04/07/2025 REF: EIR2025/14893 (Kennet 2018)



Legend

- Statutory Main Rivers
- RG1 1NH
- 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)