

FLOOD RISK ASSESSMENT REPORT FOR BETA BUILDING, 121 KINGS ROAD, READING, RG1 3ES

DOCUMENT NUMBER: C3644-R1-REV-B

PREPARED BY



Table of Contents

1. SITE DETAILS.....3

1.1 Site Location.....3

1.2 Proposed Development 4

1.3 Geology of The Area 4

2. PLANNING POLICIES.....6

2.1 National Planning Policies 6

2.2 Local Planning Policy 6

3. FLOOD RISK.....7

3.1 Flood Zones.....7

3.2 Flood Vulnerability 13

3.3 Flooding from Land (Overland Flow) 15

3.4 Flooding from Groundwater 16

3.5 Flooding from Sewers.....16

3.6 Flooding from Reservoirs, Canals or Other Artificial Sources.....17

4. SAFE ACCESS AND EGRESS 19

5. CONCLUSIONS 20

APPENDICES

APPENDIX A – DRAWINGS

APPENDIX B – ENVIRONMENT AGENCY CORRESPONDENCE DATA

1. SITE DETAILS

Site Name	Beta Building
Site Address	Beta Building, 121 Kings Road, Reading, RG1 3ES
Purpose of Development	Residential
Existing Land Use	Commercial Floor
County	Berkshire
Country	England
Local Planning Authority	Reading Borough City Council

1.1 Site Location

The location of the project site is shown in Figure 1 below.

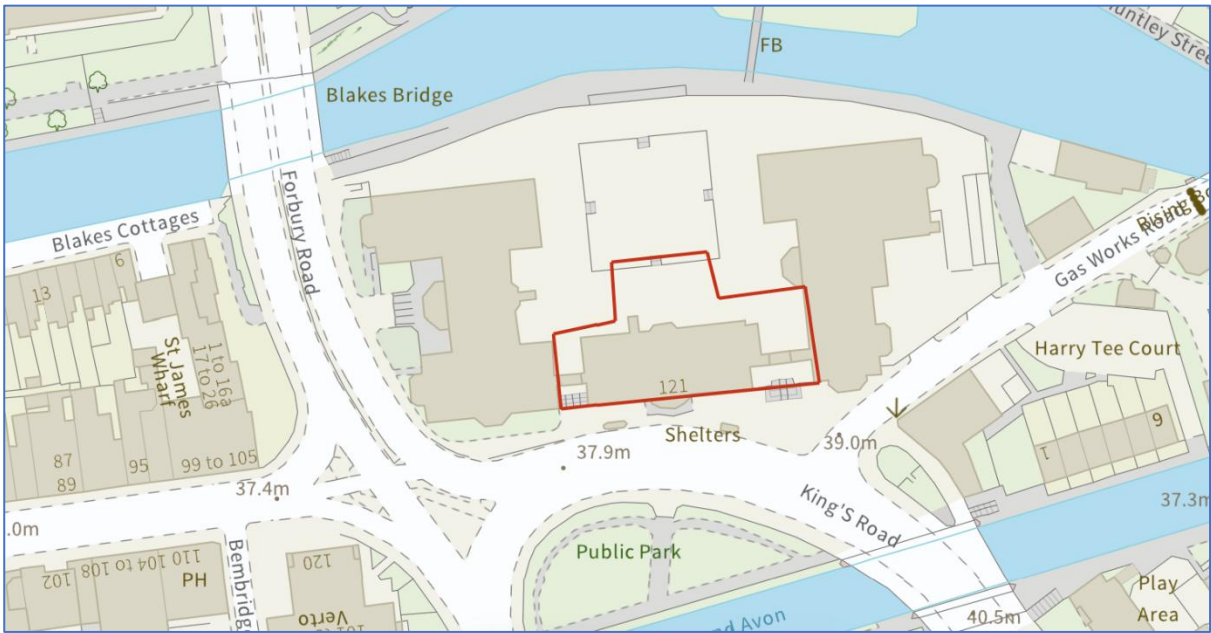


Figure 1- Location of Project Site (Source: OS Opendata).

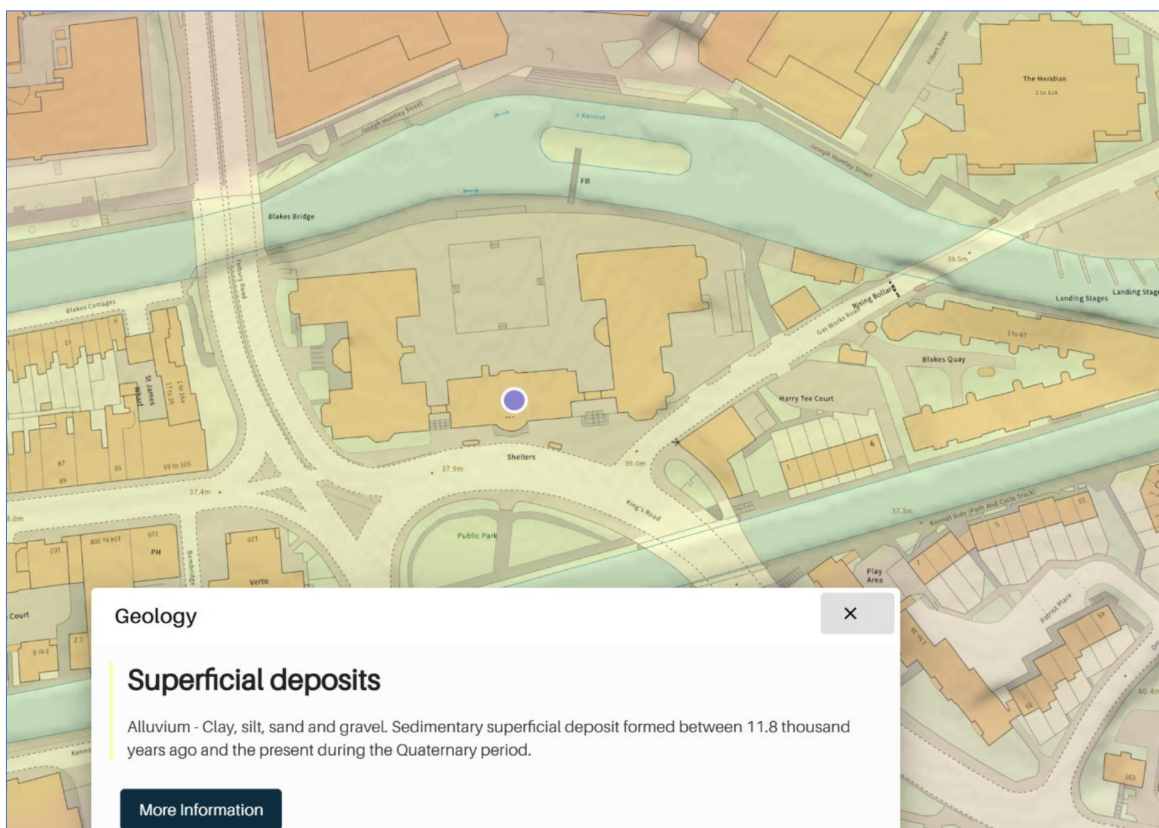
1.2 Proposed Development

The proposal involves the conversion of an existing building into 44 flats.

1.3 Geology of The Area

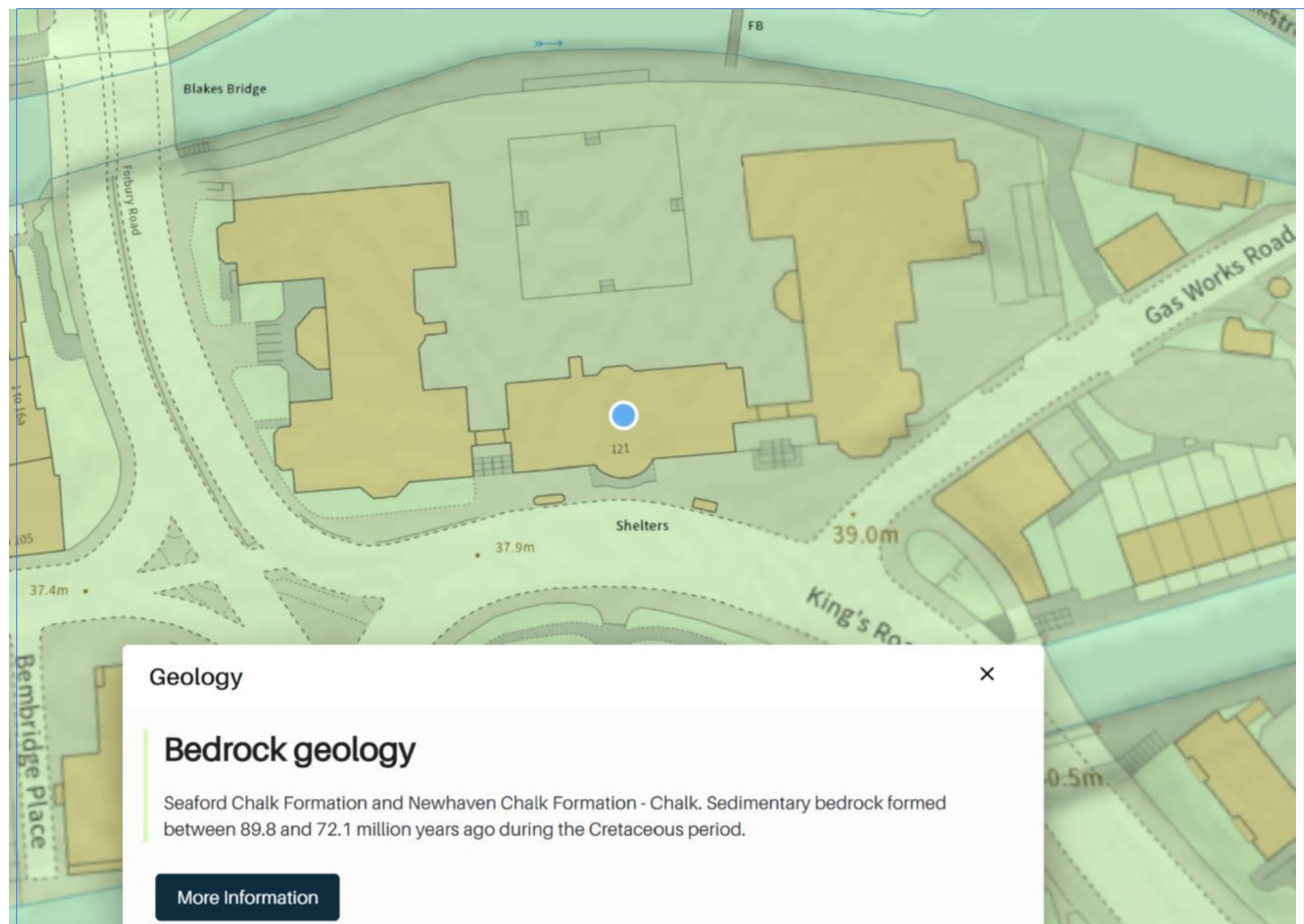
According to the British Geological Survey, the superficial deposit at the site is of the Alluvium deposits consisting of clay, silt and gravel Deposits, as shown in Figure 2 below.

The bedrock at is of the Seaford Chalk Formation and Newhaven Chalk Formation, as shown in Figure 3 overleaf.



 Alluvium - Clay, silt, sand and gravel

Figure 2 - Superficial Deposits at the site. (Source: British Geological Survey website (contains British Geological Survey materials © NERC2025)).



 Seaford Chalk Formation and Newh...

Figure 3 - Bedrock at the site. (Source: British Geological Society Website (contains British Geological Survey materials © NERC2025)).

2. PLANNING POLICIES

2.1 National Planning Policies

The report has been written in conjunction with the following national planning policies:

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

2.2 Local Planning Policy

The 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 in Figure 4 below, which shows the relative risk of flooding for different return periods.

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

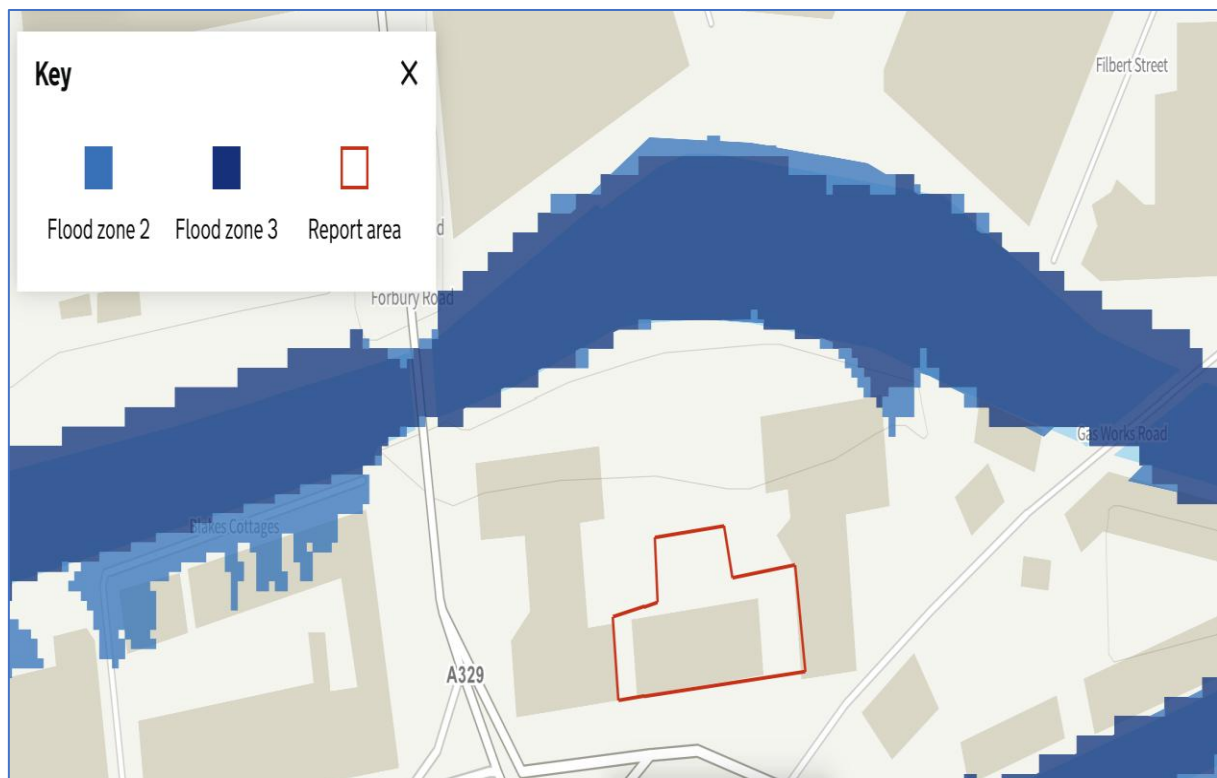


Figure 4 – Environment Agency Flood Map for the proposed development.

As can be seen from the above map and the site boundary plan provided in Appendix A, the site is located within Flood zone 1, and in accordance with Table 1 from the NPPF's technical guidance, land within Flood zone 1 is suitable for any use. This is also confirmed the Environment Agency data provided in Appendix A.

Assessment of this site has been based upon the Environment Agency's flood map, 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 of sustainable drainage techniques.
Zone 2 Medium Probability	This zone comprises land assessed as having between a 1 in 1000 annual probability of river flooding (1% - 0.1%) or between a 1 in 200 and 1 in 1000 annual probability of sea	The water-compatible less vulnerable and more vulnerable uses of land and essential infrastructure in Table D 2 are appropriate in this zone.	All development proposals 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 in the area through the layout of form and development, and the appropriate application of sustainable drainage techniques.

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	flooding (0.5%- 0.1%) in any year	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.		
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	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

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
		infrastructure uses in D.2 should only be permitted in this zone if the Exception Test (see para. 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.		iii. create space for flooding to occur by restoring functional floodplain and flood pathways and by identifying, allocating and safeguarding open space for flood storage.
Zone 3b The Functional Floor 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	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;	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 area through the layout and form of the development and appropriate application of sustainable drainage techniques; and ii. relocate existing development to land with a lower probability of flooding.

Flood Zone Classification	Definition of Zone	Appropriate uses	FRA Requirements	Policy Aims
	not be defined solely on rigid probability parameters. But land which would flood with an annual 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.	• not impede water flows; and • not increase flood risk elsewhere • Essential infrastructure in this zone should pass the Exception Test.		

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 places 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 uses 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 is 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 1 and in accordance with Table 3, overleaf, is therefore suitable for any development. Furthermore, neither a sequential or exception test is required as a part of 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

3.3 Flooding from Land (Overland Flow)

The proposed development and immediate surrounding properties are at not at risk of flooding from surface water, as seen in the Environmental Agency's flood map in Figure 5 overleaf.

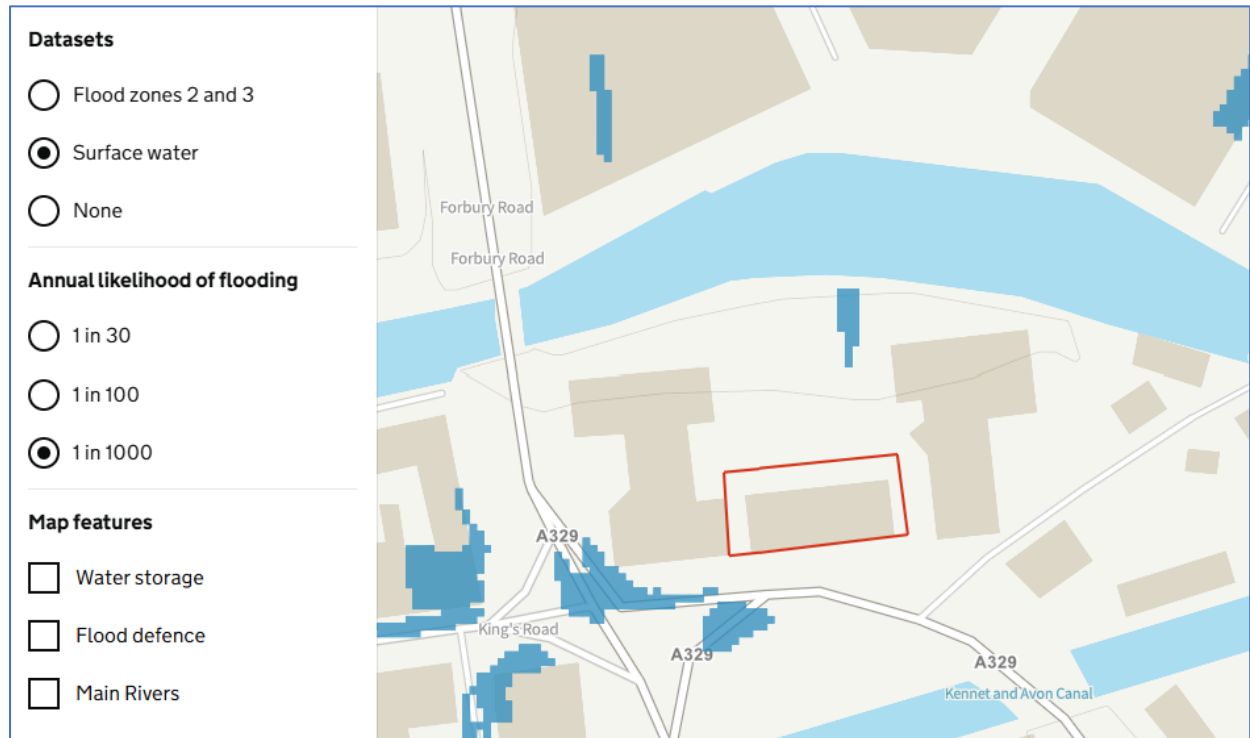


Figure 5 – Environment Agency Surface Water Flood Map for the proposed development.

3.4 Flooding from Groundwater

The Environment Agency's website confirms that any groundwater flooding in the area is unlikely.

3.5 Flooding from Sewers

A total of 14 sewer flooding incidents have been recorded in the vicinity of the site, as confirmed by the SFRA report. However there have been no incidents of sewer flooding at this site.

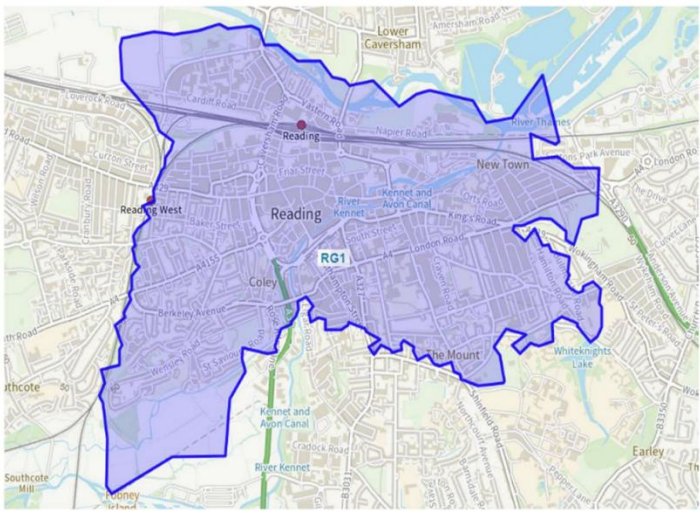
Table 4 - Sewer Flooding Incidents by Post code area				
Post Code	Post Code Area	External Flooding	Internal Flooding	Total
RG1		7	7	14

Figure 6: sewer flooding incidents by postcode area have been obtained from the Reading Level 1 Strategic Flood Risk Assessment.

3.6 Flooding from Reservoirs, Canals or Other Artificial Sources

The Environment Agency's Flood map shown in Figure 7 overleaf, indicates that the site is at no risk of flooding from reservoirs, canals, or other artificial sources during river flooding events. However the surrounding areas are, yet the risk of a reservoir failing is very low and there are flood warnings in place.



Figure 7 – Environment Agency Flood Map from reservoirs for the proposed development

4. 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.

5. 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

This detailed floor plan illustrates a large industrial or warehouse facility, likely a distribution center or manufacturing plant. The layout is organized into several main sections:

- Parking Areas:** Multiple levels of parking lots are shown, with spaces numbered sequentially (e.g., 1-25, 26-58, 59-138, 139-190, 191-225). Walkways are clearly marked throughout the parking areas.
- Buildings and Rooms:**
 - Landlords Generator Room:** Located in the top left corner.
 - Kitchen/Calorifier Room:** Situated in the middle right section.
 - Transformer Room:** Located in the bottom right section.
 - Store:** A large storage area in the bottom left section.
 - Various Other Rooms:** Including a Trailer, S.E.B. H.V. Room, and several smaller utility or storage rooms.
- Access and Egress:** Numerous 'STOP' and 'NO ENTRY' signs are placed throughout the plan to indicate restricted areas and one-way traffic flow. Arrows indicate the direction of movement.
- Infrastructure:** The plan shows various structural elements like walls, doors, and stairs, as well as external features like a ramp and a loading dock.

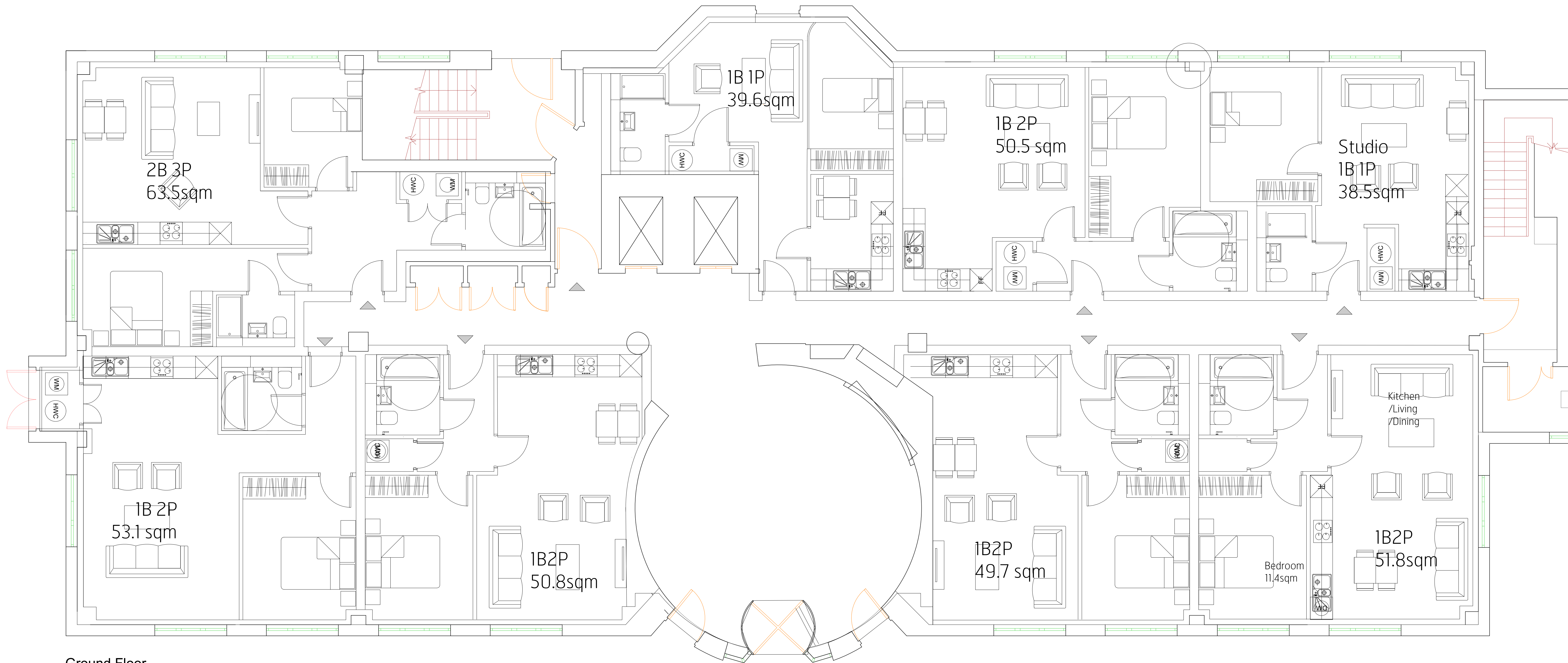
The overall design emphasizes efficient traffic flow and organized storage within a large-scale industrial environment.

DO NOT SCALE

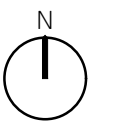
NO DIMENSIONS SHOULD BE SCALED FROM THIS DRAWING.
CONTRACTORS MUST VERIFY ALL DIMENSIONS BEFORE STARTING
WORK AND ANY DISCREPANCIES ARE TO BE REPORTED TO
PRUDENTIAL CORPORATE PROPERTY/ACCOMMODATION PLANNING

[illegible]

PROJECT NO: ****	REV: _
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Ground Floor
GIA - 600.8 sqm



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brooks
murray

CLIENT:
PRIVATE CLIENT

JOB:
BETA BUILDING
READING
RG1 3ES

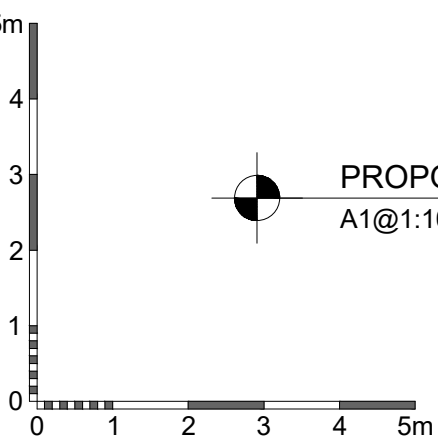
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GROUND FLOOR PLAN

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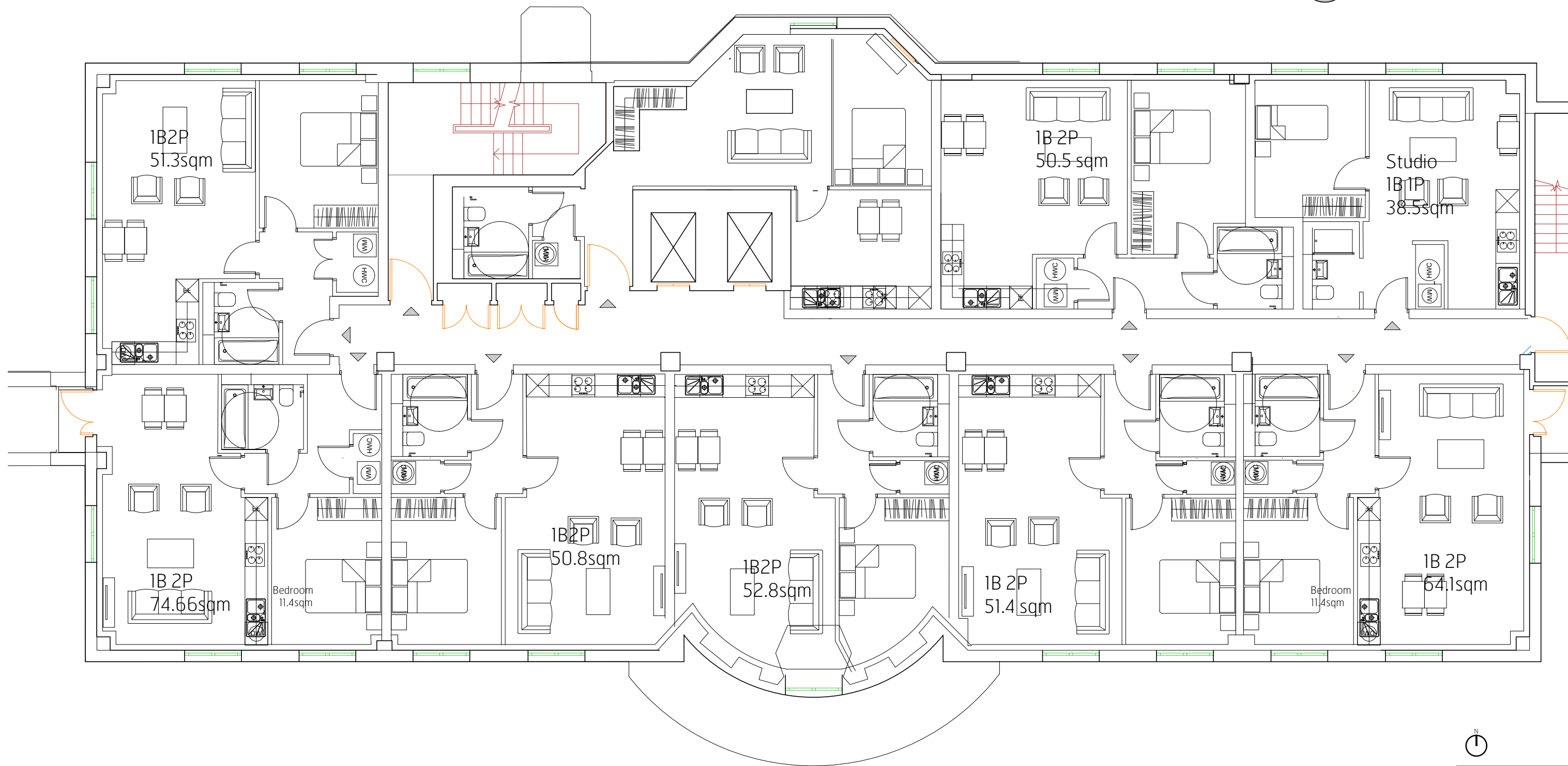
DATE:
SEPT 2025

STATUS:
FOR INFORMATION

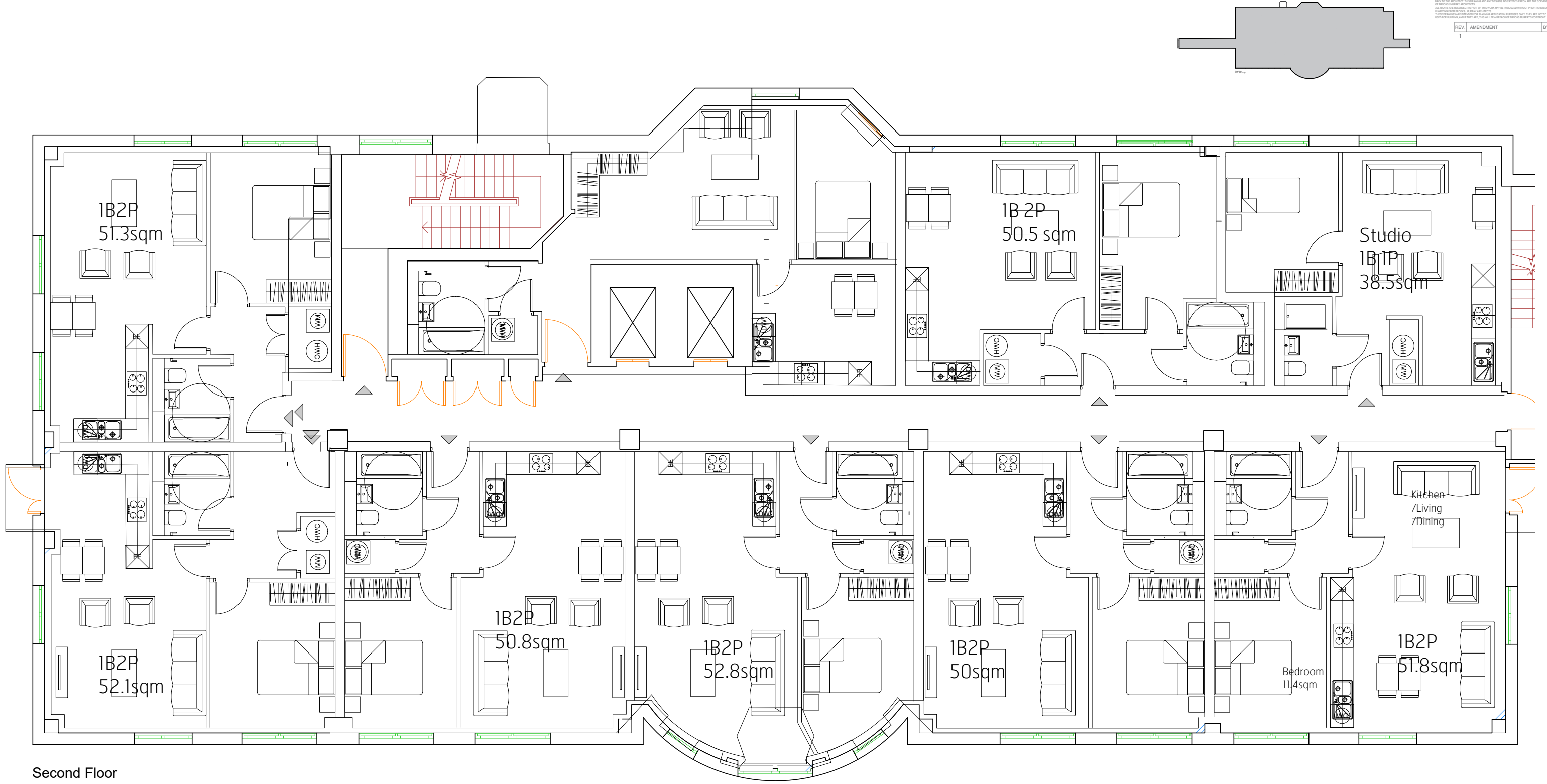
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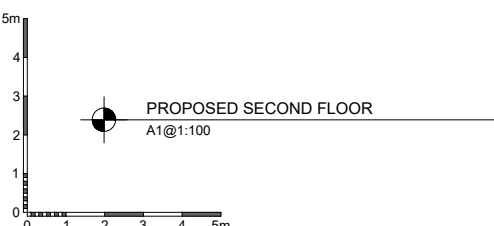
PROPOSED GROUND FLOOR
A1@1:100

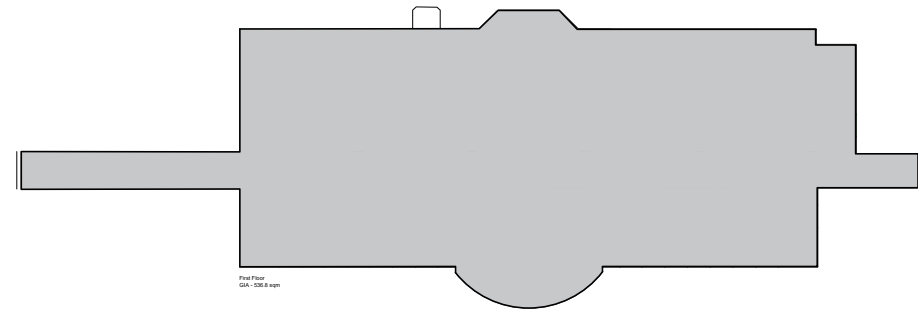


PROPOSED FIRST FLOOR - Hotel Option
A1@1:100



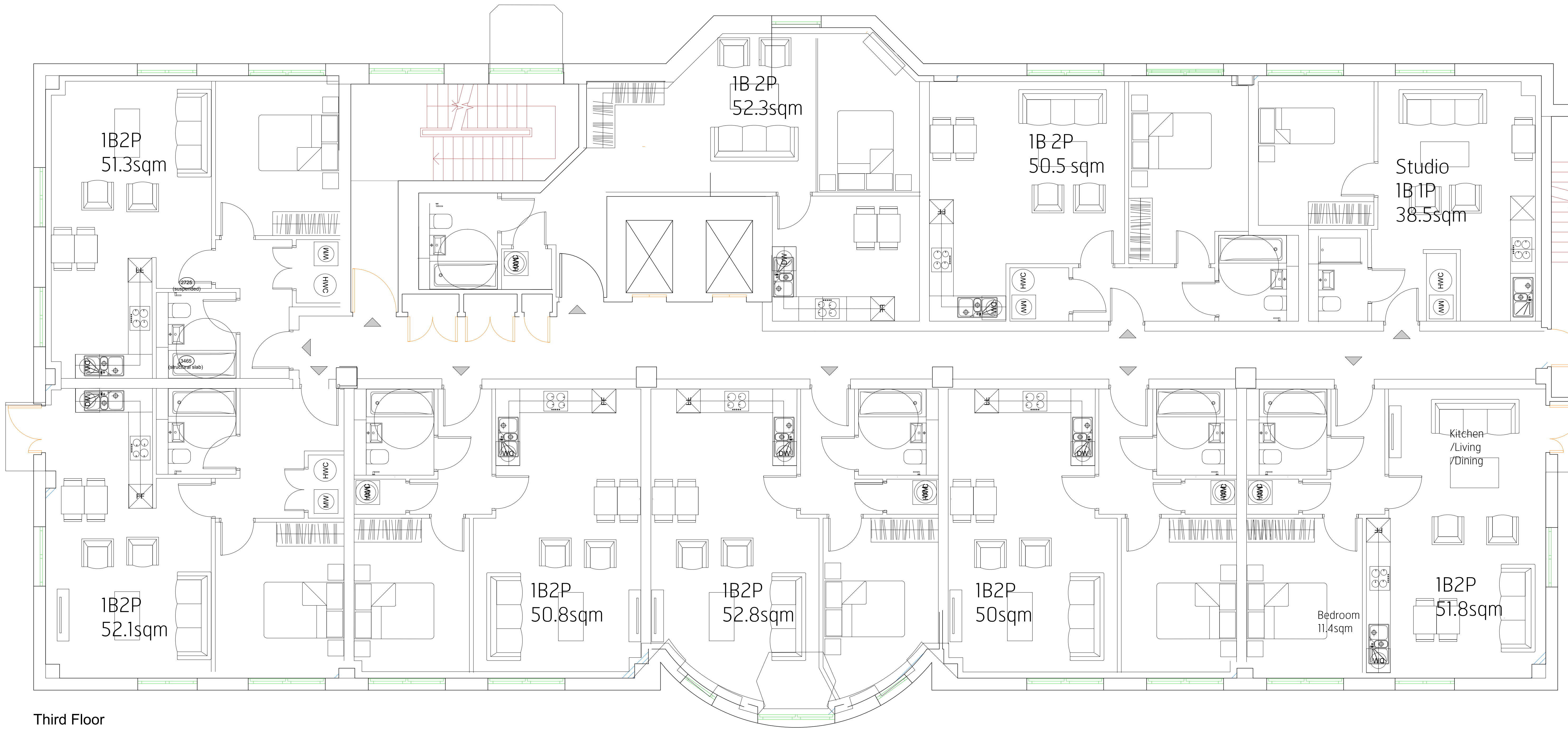
Second Floor
GIA - 590.1 sqm



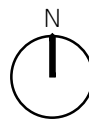


USE FIGURED DIMENSIONS ONLY. DO NOT SCALE FROM THIS DRAWING EXCEPT FOR PLANNING PURPOSES. ALL DIMENSIONS SHALL BE CHECKED IN THE FIELD AND PROPOSED THERE WILL BE NO VARIATION BACK TO THE ARCHITECT. THE DRAWING AND ANY DESIGN INDICATED THEREIN ARE THE COPYRIGHT OF BROOKS MURRAY ARCHITECTS.
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REV.	AMENDMENT	BY:	DATE
1			



Third Floor
GIA - 591.0 sqm

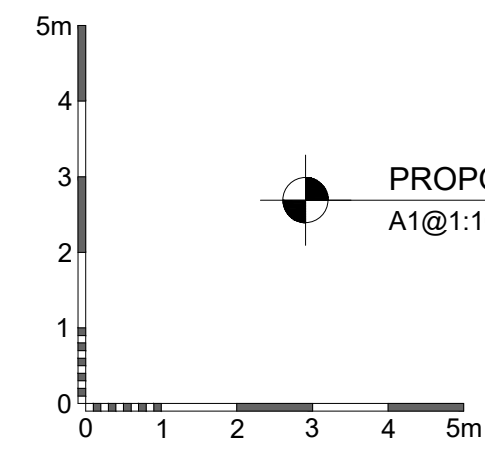


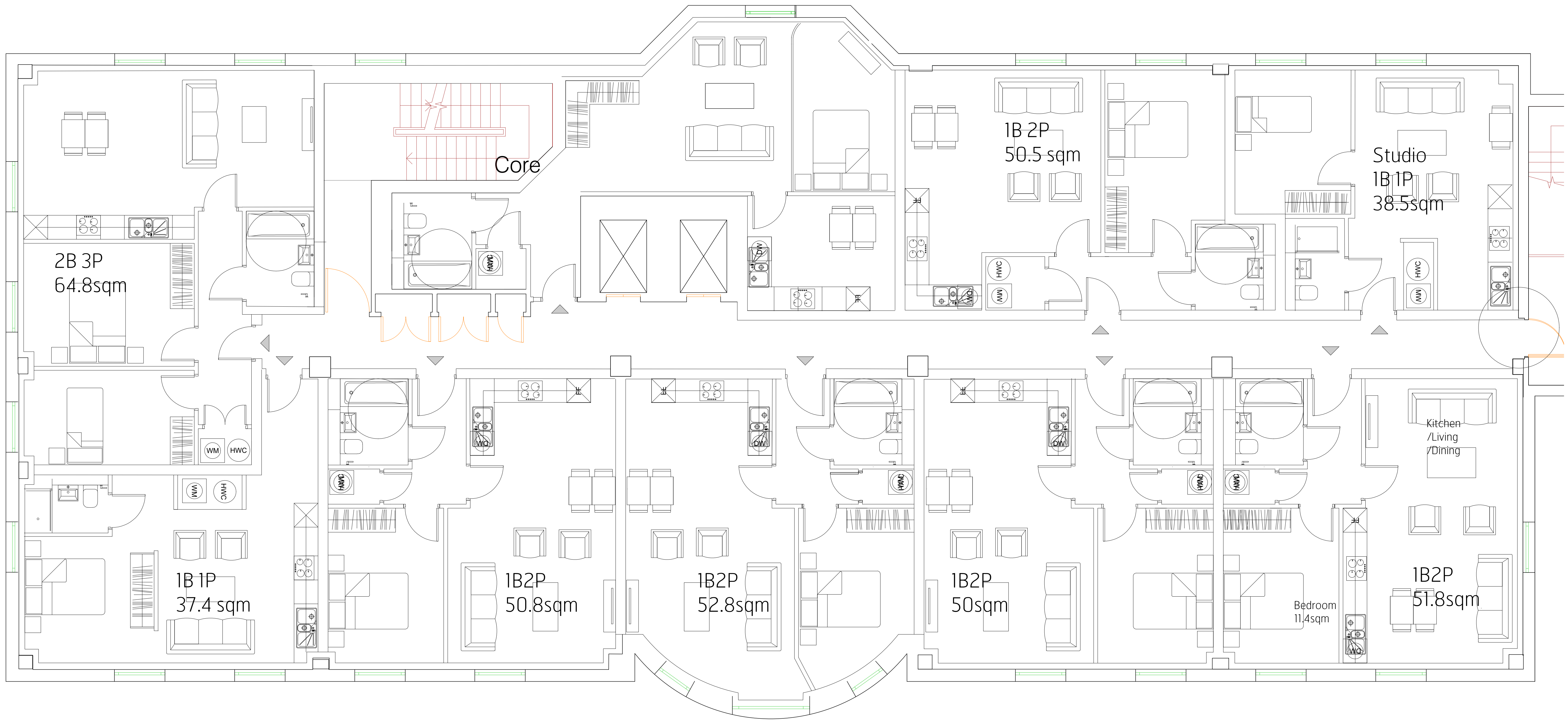
Brooks Murray Architects
41 Tabernacle Street, London, EC2A 4AA
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brooks
murray

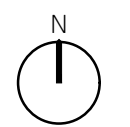
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SCALE:	1:100 @ A1
DATE:	AUGUST 2025
STATUS:	FOR INFORMATION
DRAWING NUMBER:	1364.6 -104
REV:	REV B
ISSUED BY:	SB

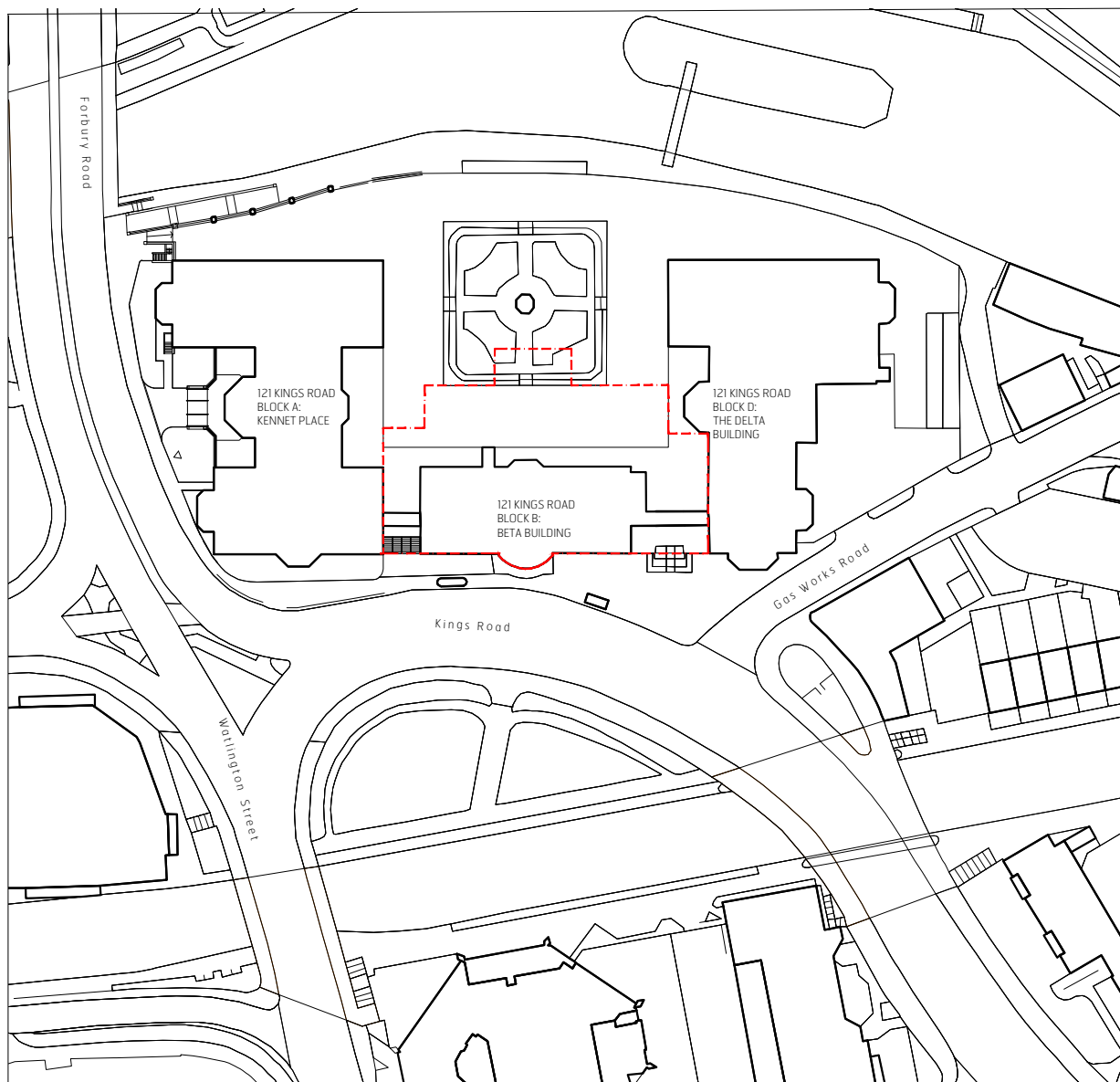
PROPOSED THIRD FLOOR
A1@1:100





Fourth Floor
GIA - 589.4 sqm

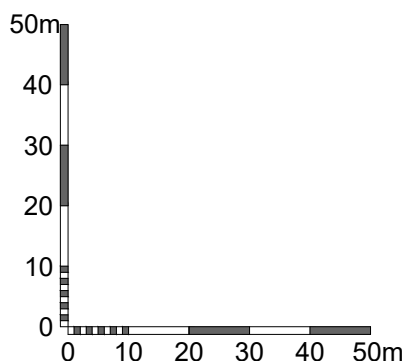




 **Site Location Plan**
1:1250 @ A4



 - Site Boundary



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**brooks
murray**

CLIENT:
PRIVATE CLIENT

JOB:
BETA BUILDING
READING
RG1 3ES

DRAWING TITLE:
Site Location Plan

Scale:
1:1250@A4

DATE:
SEPT 2025

STATUS:
PRELIMINARY

DRAWING NUMBER:
1368.6-001

APPENDIX B – ENVIRONMENT AGENCY CORRESPONDENCE DATA

Product 4 (Detailed Flood Risk) for Beta Building, 121 Kings Road, Reading, RG1 3ES

Our Ref: EIR2025/33158

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:

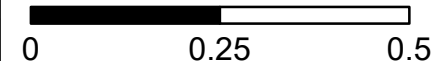
<https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion>

Flood Map for Planning centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Kilometres



Legend

- Site
- Statutory Main Rivers
- Flood Zone 3
- Flood Zone 2

Flooding from rivers or sea without defences (Flood Zone 3) shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

The Extent of an extreme flood (Flood Zone 2) shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

Defence information

EIR2025/33158

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

EIR2025/33158

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.

Model information

EIR2025/33158

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.

Modelled in-channel flood flows and levels

EIR2025/33158

The modelled flood levels and flows for the closest most appropriate model node points for your site that are within the river channel are provided below:

Node label	Model	Easting	Northing	Flood Levels (mAOD)								
				20% AEP	5% AEP	3.3% AEP	1% AEP	1% AEP (+15% increase in flows)	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
061_22_2018_001KENN3_1322.1	Kennet (Tyle Mill to Thames Confluence) 2018	472004	173365	36.70	36.85	36.88	36.98	37.10	37.18	37.23	37.44	37.26
061_22_2018_001KENN3_1103.1	Kennet (Tyle Mill to Thames Confluence) 2018	472142	173476	36.63	36.75	36.78	36.86	36.96	37.02	37.07	37.24	37.09
061_22_2018_001KENN3_1103.2	Kennet (Tyle Mill to Thames Confluence) 2018	472164	173482	36.62	36.74	36.77	36.85	36.95	37.01	37.05	37.22	37.07
061_22_2018_001KENN3_0996.1	Kennet (Tyle Mill to Thames Confluence) 2018	472246	173511	36.61	36.73	36.75	36.83	36.92	36.98	37.02	37.19	37.05
061_22_2018_001KENN3_0961.1	Kennet (Tyle Mill to Thames Confluence) 2018	472301	173508	36.60	36.71	36.73	36.81	36.90	36.95	36.99	37.15	37.02
061_22_2018_001KENN3_0857.1	Kennet (Tyle Mill to Thames Confluence) 2018	472383	173477	36.59	36.70	36.72	36.79	36.88	36.93	36.97	37.13	37.00
061_22_2018_001KENC10_069.2	Kennet (Tyle Mill to Thames Confluence) 2018	472292	173375	36.62	36.73	36.76	36.84	36.94	37.01	37.04	37.22	37.06
061_22_2018_001KENC10_069.1	Kennet (Tyle Mill to Thames Confluence) 2018	472216	173352	36.64	36.76	36.79	36.87	36.97	37.04	37.08	37.26	37.11

Node label	Model	Easting	Northing	Flood Flows (m3/s)								
				20% AEP	5% AEP	3.3% AEP	1% AEP	1% AEP (+15% increase in flows)	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
061_22_2018_001KENN3_1322.1	Kennet (Tyle Mill to Thames Confluence) 2018	472004	173365	24.74	32.24	34.28	39.84	46.67	50.87	53.54	66.22	55.43
061_22_2018_001KENN3_1103.1	Kennet (Tyle Mill to Thames Confluence) 2018	472142	173476	27.22	34.80	36.86	42.44	49.41	53.98	57.14	70.79	59.27
061_22_2018_001KENN3_1103.2	Kennet (Tyle Mill to Thames Confluence) 2018	472164	173482	27.22	34.80	36.85	42.44	49.41	54.05	57.14	70.86	59.27
061_22_2018_001KENN3_0996.1	Kennet (Tyle Mill to Thames Confluence) 2018	472246	173511	27.22	34.80	36.85	42.44	49.41	53.98	57.14	70.79	59.27
061_22_2018_001KENN3_0961.1	Kennet (Tyle Mill to Thames Confluence) 2018	472301	173508	27.22	34.80	36.85	42.44	49.41	54.03	57.14	70.82	59.27
061_22_2018_001KENN3_0857.1	Kennet (Tyle Mill to Thames Confluence) 2018	472383	173477	27.22	34.81	36.86	42.45	49.42	54.02	57.15	70.81	59.28
061_22_2018_001KENC10_069.2	Kennet (Tyle Mill to Thames Confluence) 2018	472292	173375	26.99	34.12	36.04	41.34	49.35	56.61	54.63	75.66	56.49
061_22_2018_001KENC10_069.1	Kennet (Tyle Mill to Thames Confluence) 2018	472216	173352	26.98	34.12	36.03	41.33	47.86	52.88	54.62	68.51	56.48

Note:

Due to changes in guidance on the allowances for climate change, the percentage increase in river flows above should no longer to be used for development design purposes. The data included in this Product can be used for interpolation of levels as part of an intermediate level assessment.

For further advice on the new allowances please visit
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Modelled in-channel flood flows and levels

EIR2025/33158

The modelled flood levels and flows for the closest most appropriate model node points for your site that are within the river channel are provided below:

Node label	Model	Easting	Northing	Flood Levels (mAOD)							
				20% AEP	5% AEP	3.3% AEP	1% AEP	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
061_00_2019_Reading_u	Thames (Pangbourne to Sonning) 2019	471792	174062	37.00	37.35	37.45	37.69	37.89	37.95	38.22	38.01
061_00_2019_36.009L2	Thames (Pangbourne to Sonning) 2019	471925	174020	36.98	37.33	37.42	37.61	37.76	37.80	37.95	37.83
061_00_2019_36009L2d	Thames (Pangbourne to Sonning) 2019	471928	174019	36.98	37.33	37.42	37.61	37.76	37.80	37.95	37.83
061_00_2019_Bathy11	Thames (Pangbourne to Sonning) 2019	472484	174253	36.41	36.63	36.70	36.93	37.20	37.30	37.61	37.37
061_00_2019_Bathy10	Thames (Pangbourne to Sonning) 2019	472200	174094	36.51	36.74	36.81	37.03	37.28	37.38	37.72	37.45
061_00_2019_35.067	Thames (Pangbourne to Sonning) 2019	473076	173909	36.24	36.37	36.40	36.52	36.66	36.70	36.88	36.74

Node label	Model	Easting	Northing	Flood Flows (m3/s)							
				20% AEP	5% AEP	3.3% AEP	1% AEP	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
061_00_2019_Reading_u	Thames (Pangbourne to Sonning) 2019	471792	174062	222.84	286.01	305.13	367.44	442.77	470.98	560.56	491.56
061_00_2019_36.009L2	Thames (Pangbourne to Sonning) 2019	471925	174020	5.25	5.85	6.11	11.83	27.86	34.67	121.04	42.65
061_00_2019_36009L2d	Thames (Pangbourne to Sonning) 2019	471928	174019	1.04	0.83	1.22	6.14	21.47	27.98	115.06	35.82
061_00_2019_Bathy11	Thames (Pangbourne to Sonning) 2019	472484	174253	222.76	281.18	295.48	337.99	378.01	389.80	427.76	398.72
061_00_2019_Bathy10	Thames (Pangbourne to Sonning) 2019	472200	174094	197.92	248.90	262.78	280.84	281.18	281.08	281.43	281.08
061_00_2019_35.067	Thames (Pangbourne to Sonning) 2019	473076	173909	223.06	290.50	310.52	377.23	457.82	486.14	577.70	507.58

Note:

Due to changes in guidance on the allowances for climate change, the percentage increase in river flows above should no longer to be used for development design purposes. The data included in this Product can be used for interpolation of levels as part of an intermediate level assessment.

For further advice on the new allowances please visit
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Modelled floodplain flood levels

EIR2025/33158

The modelled flood levels for the closest most appropriate model grid cells for your site are provided below:

2D grid cell reference	Model	Easting	Northing	flood levels (mAOD)								
				20% AEP	5% AEP	3.3 AEP	1% AEP	1% AEP (+15% increase in flows)	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
Flood Point 1	Kennet (Tyle Mill to Thames Confluence) 2018	472207	173484	No Data	No Data	No Data	No Data	36.94	36.99	37.03	37.20	37.06
Flood Point 2	Kennet (Tyle Mill to Thames Confluence) 2018	472340	173474	No Data	36.70	36.73	36.80	36.89	36.94	36.98	37.14	37.00
Flood Point 3	Kennet (Tyle Mill to Thames Confluence) 2018	472373	173468	36.59	36.69	36.72	36.79	36.88	36.93	36.97	37.12	36.99
Flood Point 4	Kennet (Tyle Mill to Thames Confluence) 2018	472008	173372	36.70	36.84	36.87	36.97	37.09	37.16	37.21	37.41	37.24

This flood model has represented the floodplain as a grid.
The flood water levels have been calculated for each grid cell.

Note:
Due to changes in guidance on the allowances for climate change, the percentage increase in river flows above should no longer to be used for development design purposes. The data included in this Product can be used for interpolation of levels as part of an intermediate level assessment.

For further advice on the new allowances please visit
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Modelled floodplain flood levels

EIR2025/33158

The modelled flood levels for the closest most appropriate model grid cells for your site are provided below:

2D grid cell reference	Model	Easting	Northing	flood levels (mAOD)										
				20% AEP	5% AEP	3.3 AEP	1% AEP	1% AEP (+10% increase in flows)	1% AEP (+15% increase in flows)	1% AEP (+20% increase in flows)	1% AEP (+25% increase in flows)	1% AEP (+35% increase in flows)	1% AEP (+70% increase in flows)	0.1% AEP
Flood Point 1	Thames (Pangbourne to Sonning) 2019	472653	173478	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	37.07	No Data
Flood Point 2	Thames (Pangbourne to Sonning) 2019	472537	173548	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	37.32	No Data

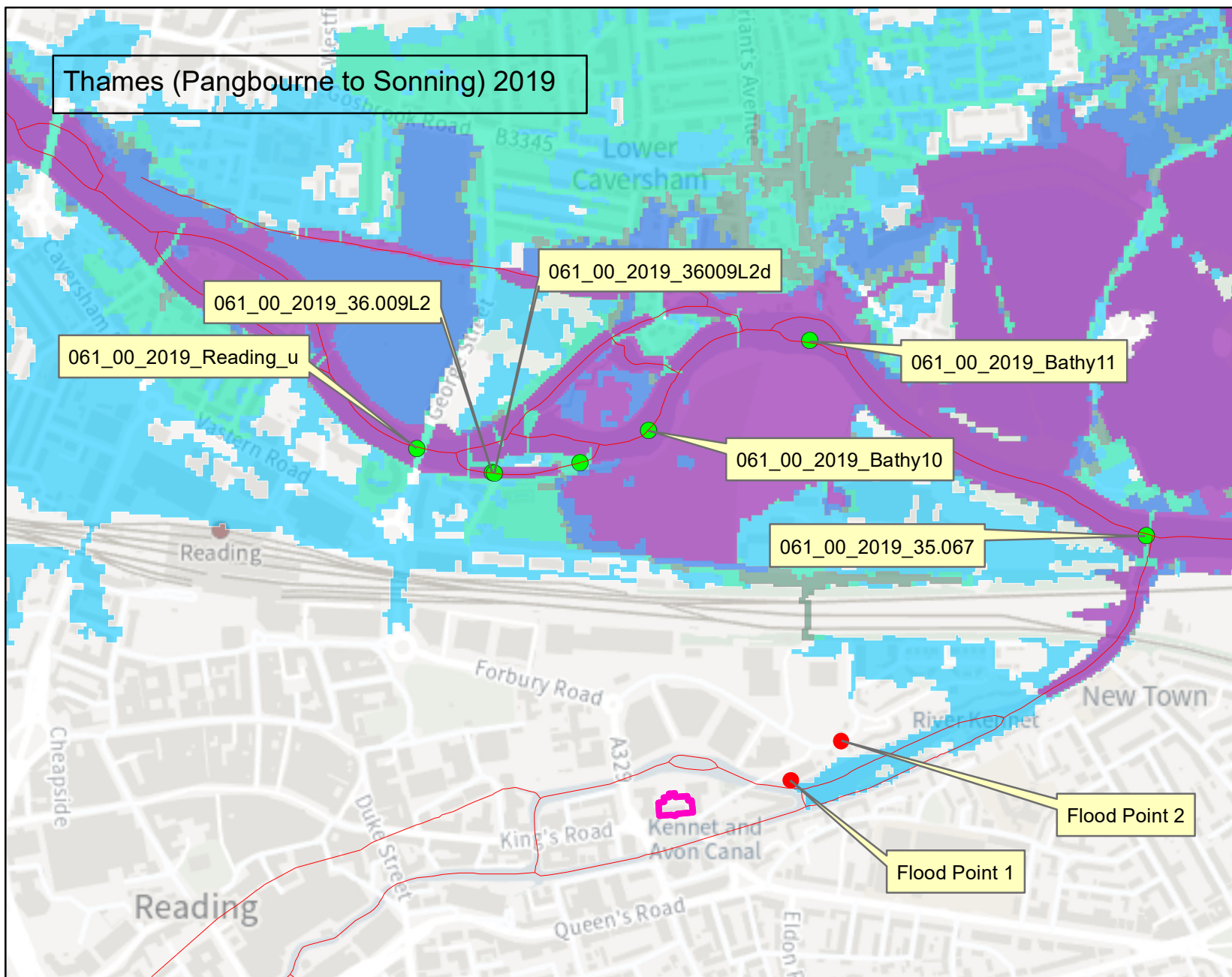
This flood model has represented the floodplain as a grid.
The flood water levels have been calculated for each grid cell.

Note:
Due to changes in guidance on the allowances for climate change, the percentage increase in river flows above should no longer to be used for development design purposes. The data included in this Product can be used for interpolation of levels as part of an intermediate level assessment.

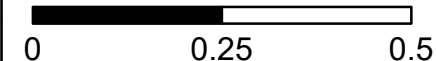
For further advice on the new allowances please visit
<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Detailed FRA Map centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Kilometres



Legend

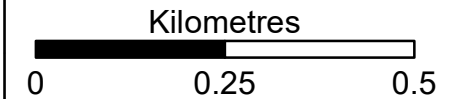
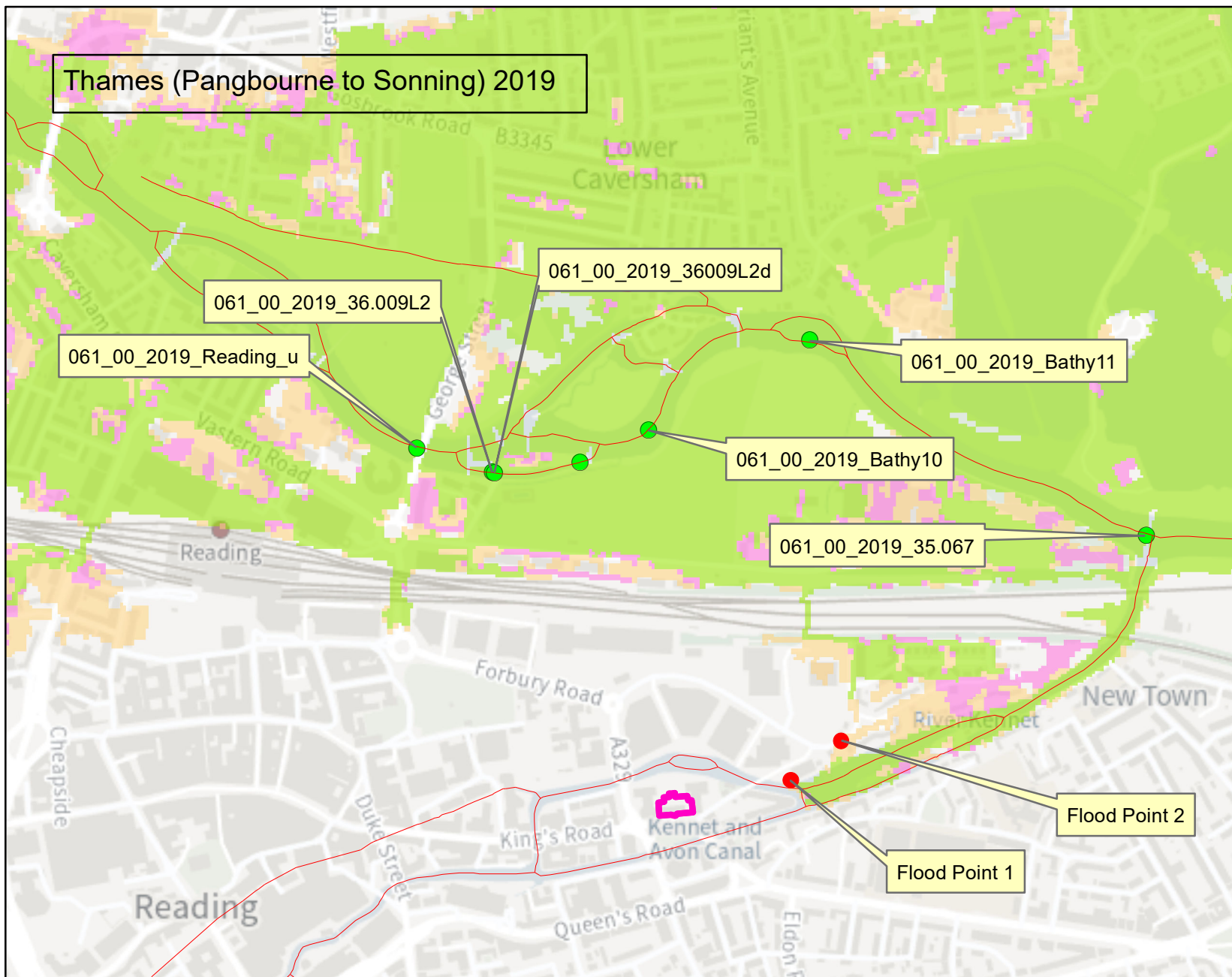
- Site
- Statutory Main Rivers
- Model Nodes
- 20% AEP Flood Outline
- 5% AEP Flood Outline
- 3.3% AEP Flood Outline
- 1% AEP Flood Outline
- 0.1% AEP Flood Outline
- Floodplain Node

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

Where available climate change extents have been calculated with an additional flow added to an AEP event. An example of how this is written is 1%+20% AEP.

Detailed FRA Map centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

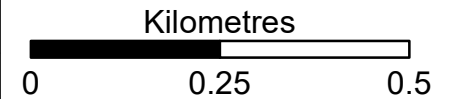
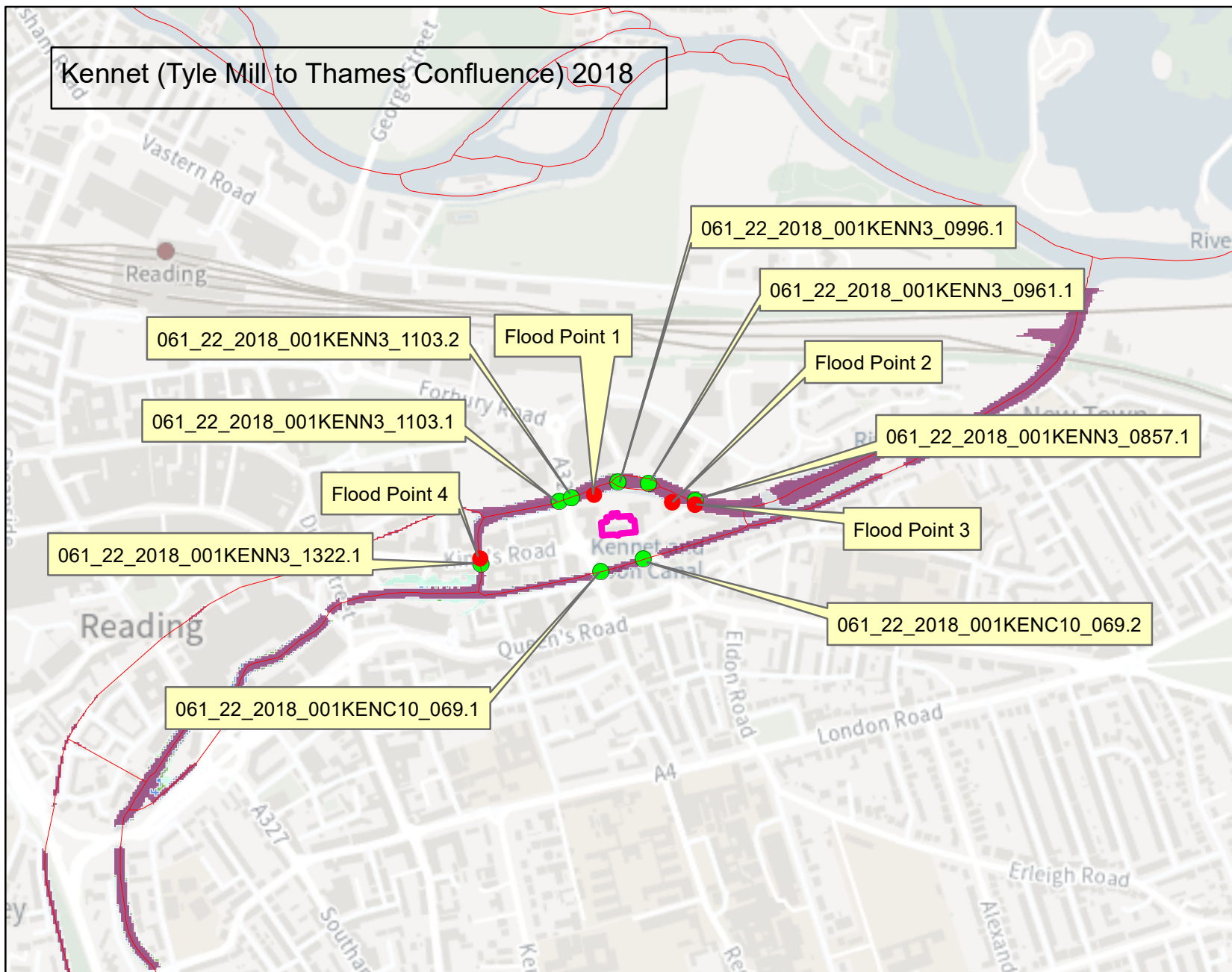
- Site
- Statutory Main Rivers
- Model Nodes
- 1%+25% CC AEP Flood Outline
- 1%+35% CC AEP Flood Outline
- 1%+70% CC AEP Flood Outline
- Floodplain Node

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

Where available climate change extents have been calculated with an additional flow added to an AEP event. An example of how this is written is 1%+20% AEP.

Detailed FRA Map centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

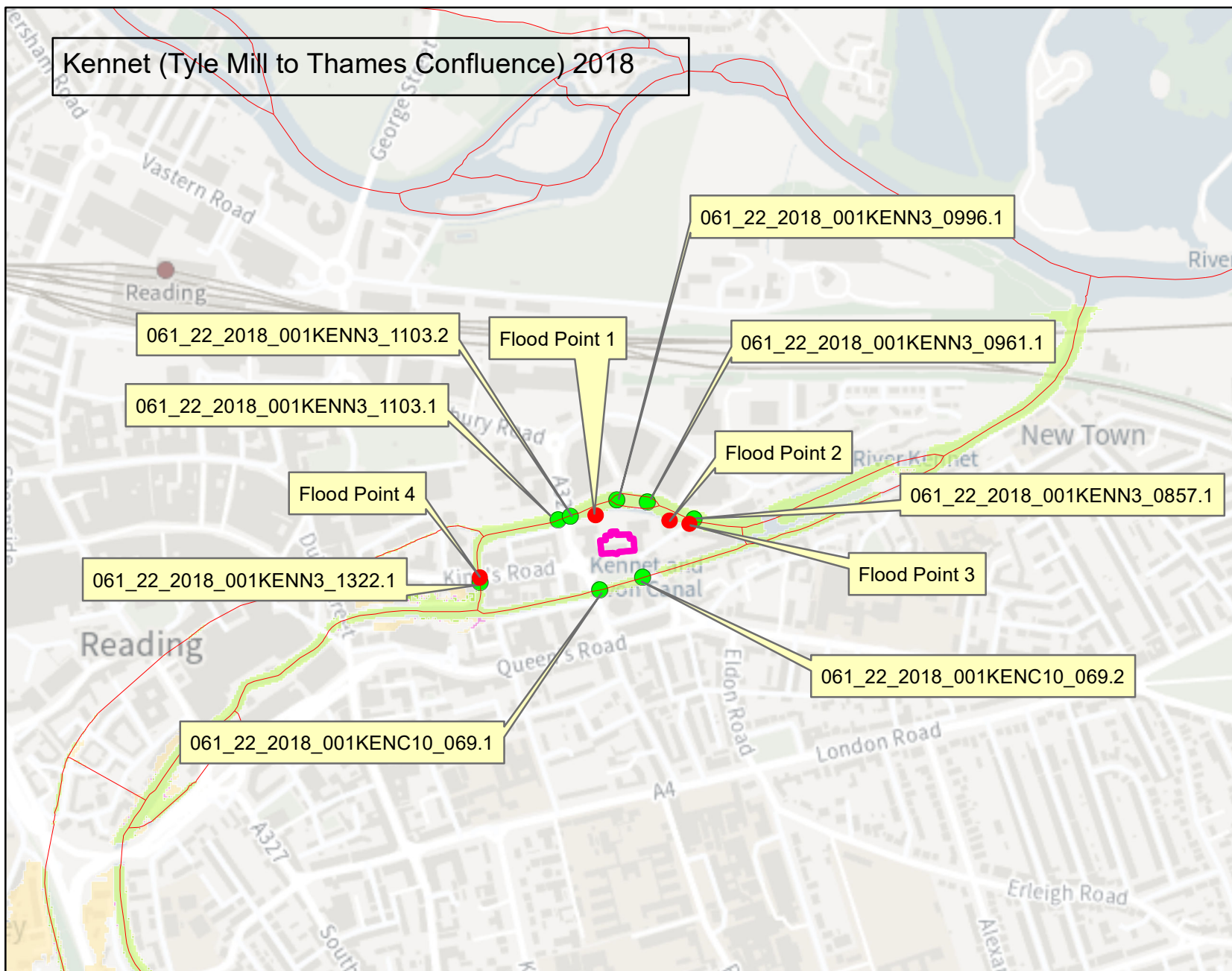
- Site
- Statutory Main Rivers
- Model Nodes
- 20% AEP Flood Outline
- 5% AEP Flood Outline
- 3.3% AEP Flood Outline
- 1% AEP Flood Outline
- 0.1% AEP Flood Outline
- Floodplain Node

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

Where available climate change extents have been calculated with an additional flow added to an AEP event. An example of how this is written is 1%+20% AEP.

Detailed FRA Map centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- Statutory Main Rivers
- Model Nodes
- 1%+15% CC AEP Flood Outline
- 1%+25% CC AEP Flood Outline
- 1%+35% CC AEP Flood Outline
- 1%+70% CC AEP Flood Outline
- Floodplain Node

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

Where available climate change extents have been calculated with an additional flow added to an AEP event. An example of how this is written is 1%+20% AEP.

Historic flood data

EIR2025/33158

Our records show that the area of your site has been affected by flooding.
Information on the floods that have affected your site is provided in the table below:

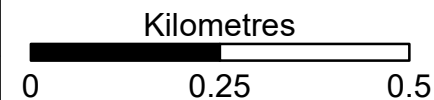
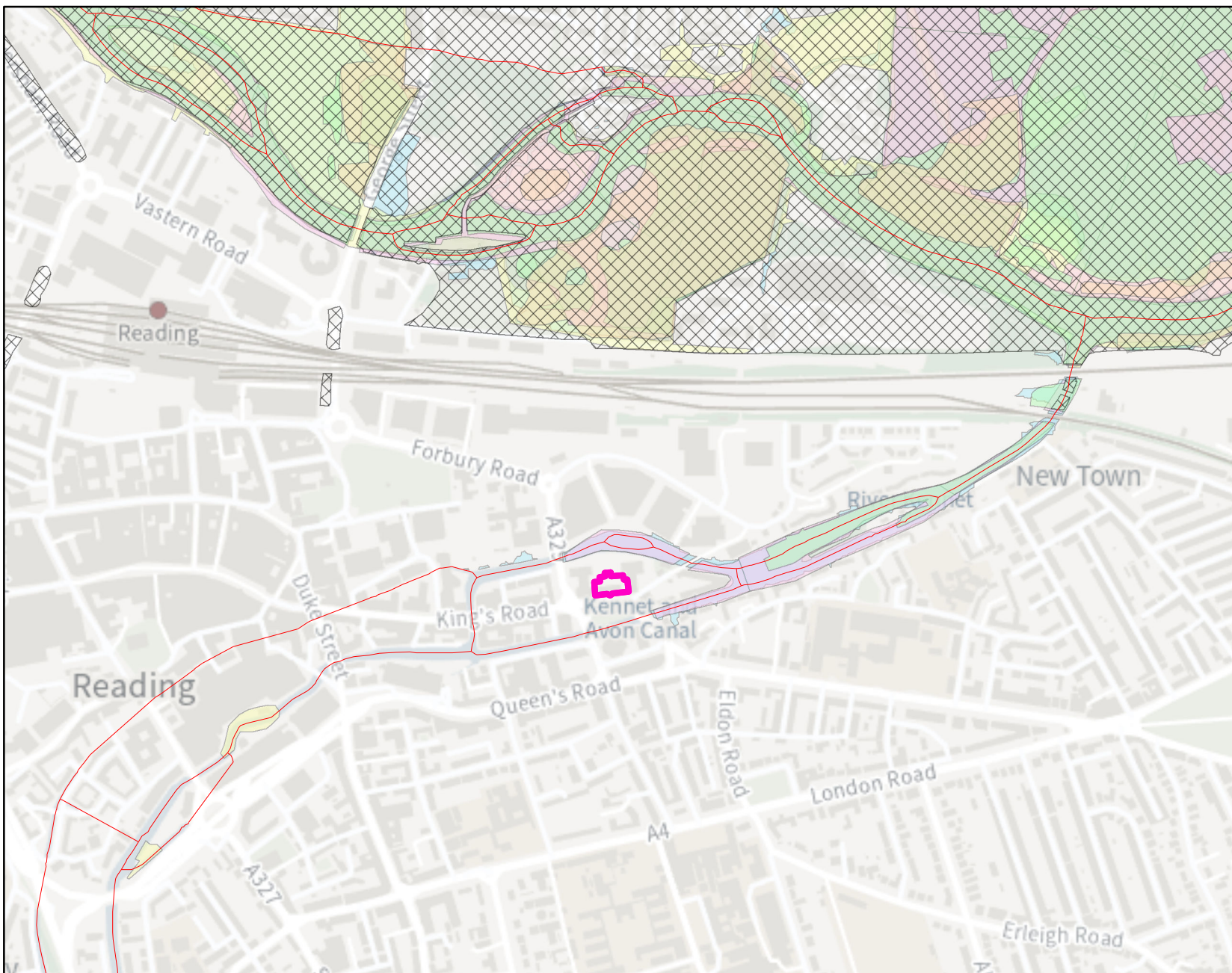
Flood Event Code	Flood Event Name	Start Date	End Date	Source of Flooding	Cause of Flooding
No Historic Information					

Please note the Environment Agency maps flooding to land not individual properties. Floodplain extents are an indication of the geographical extent of a historic flood. They do not provide information regarding levels of individual properties, nor do they imply that a property has flooded internally.

Start and End Dates shown above may represent a wider range where the exact dates are not available.

Historic Flood Map centred on Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- Statutory Main Rivers
- 1947
- 1974
- 1977
- 2000
- 2002/3
- 2007
- 2014

Flooding from rivers or sea without defences (Flood Zone 3) shows the area that could be affected by flooding:

- from the sea with a 1 in 200 or greater chance of happening each year
- or from a river with a 1 in 100 or greater chance of happening each year.

The Extent of an extreme flood (Flood Zone 2) shows the extent of an extreme flood from rivers or the sea with up to a 1 in 1000 chance of occurring each year.

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)

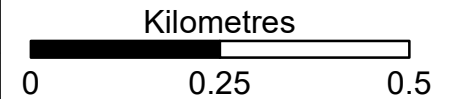
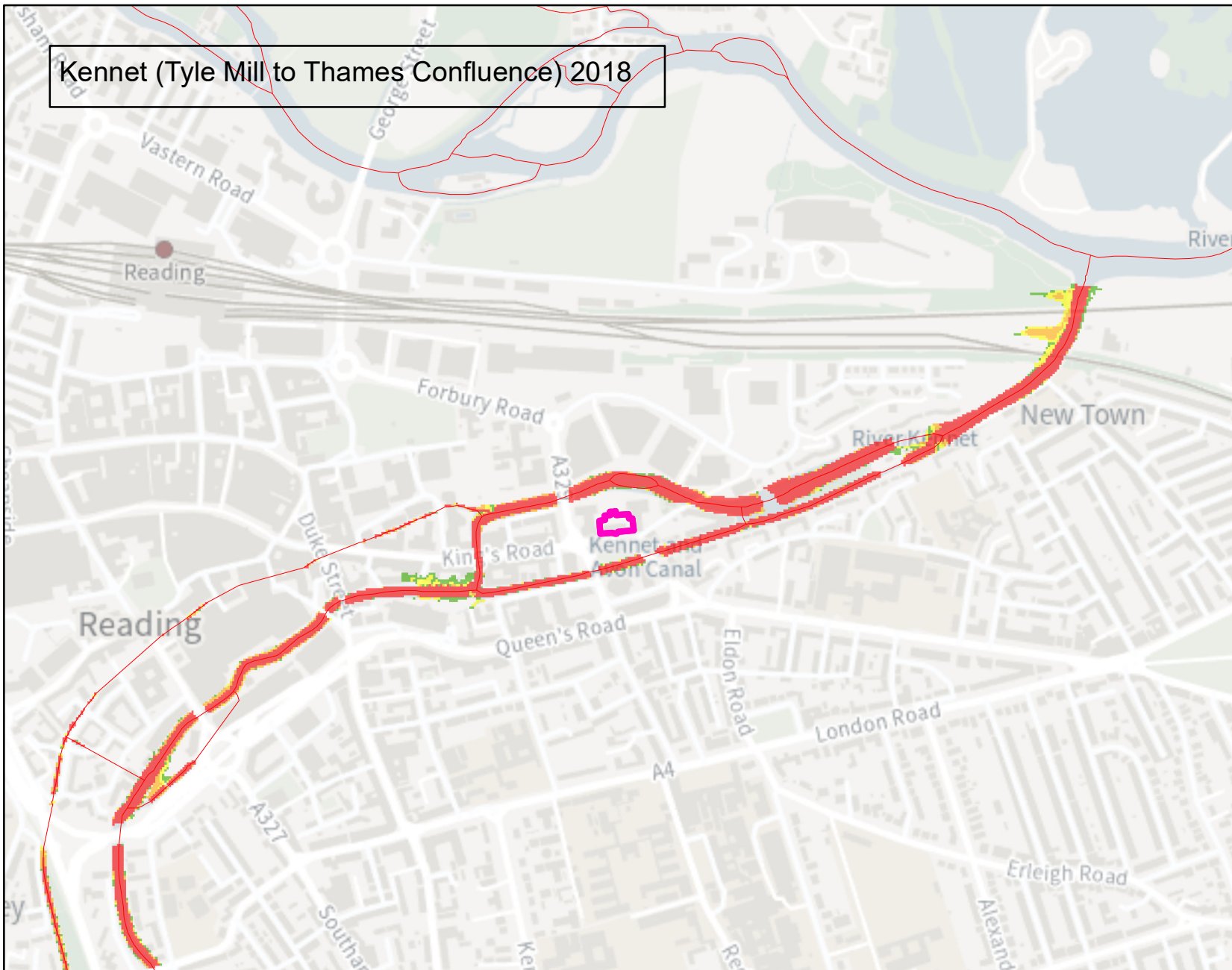
The resultant hazard rating is then classified according to:

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% CC scenario) Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- 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

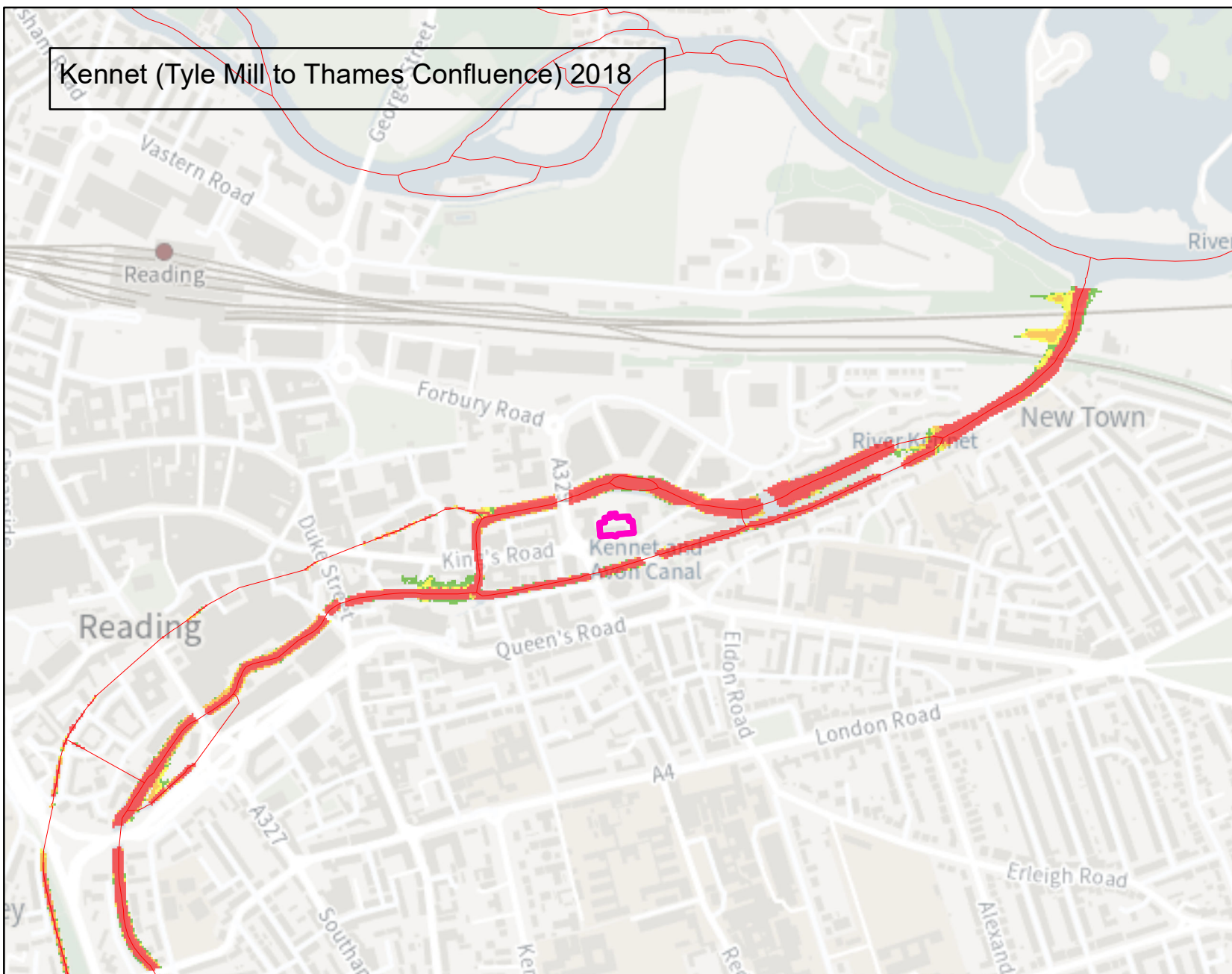
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

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

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% + 25% CC scenario) Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- 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

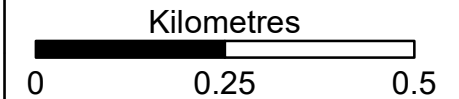
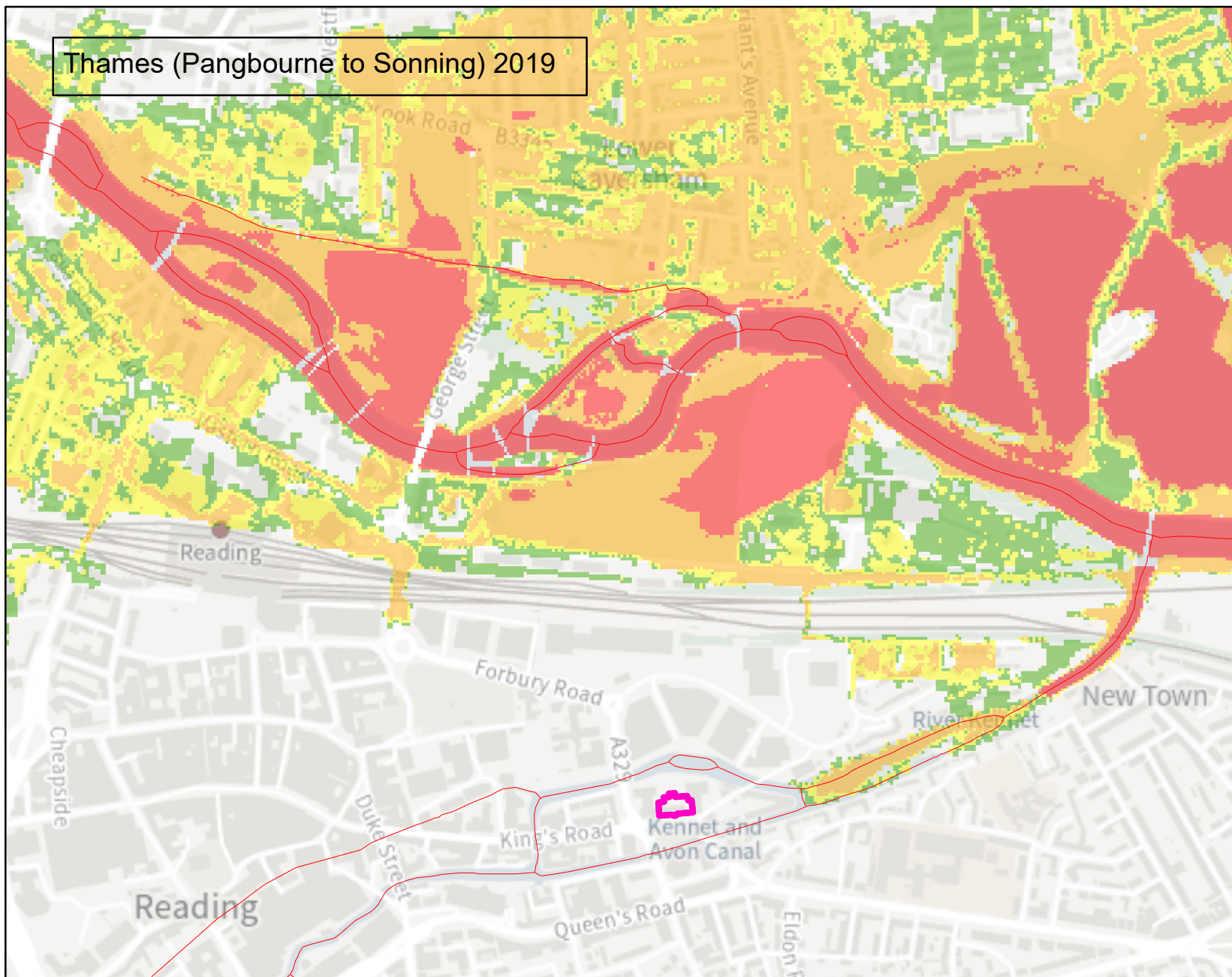
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

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

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% + 35% CC scenario) Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- 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

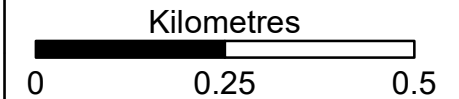
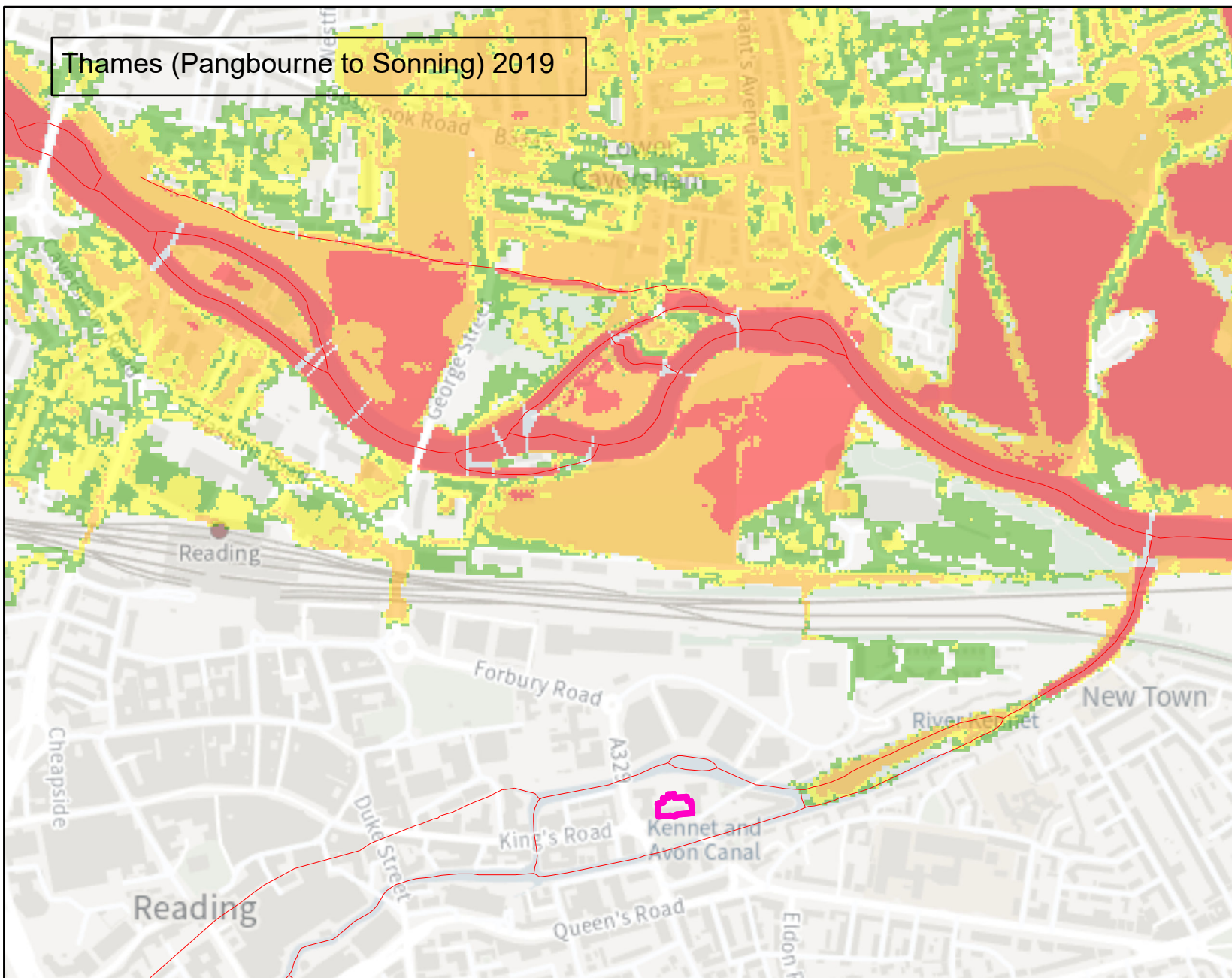
For hazard and debris factor we used HR Wallingford and Environment Agency (May 2008) supplementary note on flood hazard ratings and thresholds for development planning and control purpose. The following calculation is used:

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

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% + 25% CC scenario) Beta Building, 121 Kings Road, Reading, RG1 3ES

Created on 06/10/2025 REF: EIR2025/33158



Legend

- Site
- 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)