MAPLEBROOK
Environmental Consultants

Flood Risk Assessment for 69 King Street, Whalley, Clitheroe, BB7 9SW.

Jo Hales, BSc Hons

October 2024

Report QA Number 24/03a

Contents

1.0 Description of the Proposed Development

The proposed site is located as shown on Plan 1 at 69 King Street, Whalley, Clitheroe, BB7 9SW. The site is currently a shop and residential flat and is located within a mixed residential and commercial area of Whalley. See Appendix 1 for key site photographs, and Appendix 3 for the architects existing and proposed layout plans. The existing building will be converted to boutique restaurant and hotel.

Based on the flood maps provided by the Environment Agency (EA) (as included in Appendix 2) the majority of the site is situated in Flood Zone 1. With the edge of the building adjacent to King Street in Flood Zone 3.

2.0 Sources of Flooding

Sub Regional (County level) flooding scenarios have been investigated and summarised in the Ribble Valley Borough Council Level 1 Strategic Flood Risk Assessment (Reference 1) and information categorising the risk of flooding and the hazards posed to the area. The risk of flooding from six types of sources has been considered below using the information from the SFRA (Reference 1) and other sources.

Fluvial:

Based on the EA flood maps (see Appendix 1, and Figure 1 below) the majority of the site is located in Flood Zone 1. With front edge of the building adjacent to King Street located within Flood Zone 3. This risk is based on the risk of fluvial flooding from rivers and seas. Based on the EA map the nearest watercourse is the River Calder located to the South of the site which is categorised as Flood Zone 3. There is a ordinary watercourse located to the North of the site.

Figure 1: EA fluvial flood risk map. Site location outlined in red. (Source – EA).

The fluvial flood risk posed by the River Calder is also summarised in the Ribble Catchment Flood Management Plan (Reference 2), specifically in Sub- area 4 the Clitheroe. This sub area of the catchment has been categorised as being within Policy option 5 or "areas of moderate to

high flood risk where we can generally take further action to reduce flood risk" (Reference 2). This policy option does refer to the whole of the area within the catchment rather than the specific site. However, it can be assumed from this that any mitigation measures in the design of the site to reduce flooding will aid the policy option for this area of the catchment.

The data provided by the EA from the Whalley 2017 model also indicates that there was a flooding incident recorded in the road outside the site on King Street from an ordinary watercourse due to an obstruction/ blockage in a debris screen.

Pluvial:

Based on the EA's online surface water flooding maps (see Figure 2 below) the redevelopment is at a high risk of pluvial flooding from the surrounding roads.

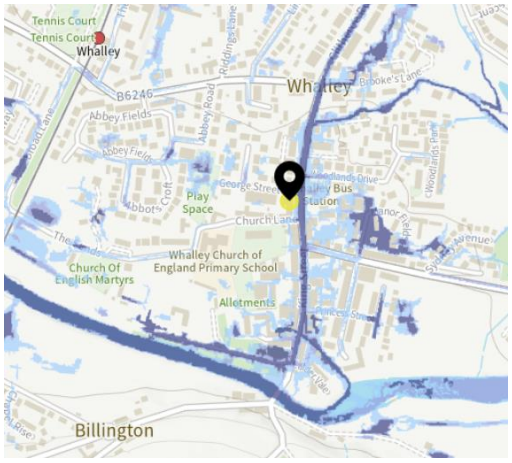


Figure 2: EA pluvial extents flood risk map. Site location marked in yellow. (Source – EA).

Based on the EA pluvial flood maps the edge of the building is at risk of pluvial flooding. Figure 2 indicates the extent of the flooding. The EA maps also indicate that the depth of flooding in King Street will be below 30cm (see Figure 3 below)

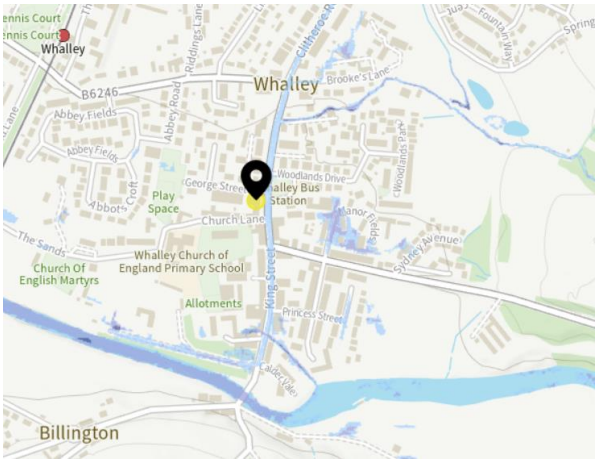


Figure 3: EA pluvial depth flood risk map. Site location marked in yellow. (Source – EA).

Sewer:

There is no specific information relating to sewer flooding in the SFRA such as the DG5 at risk register (Reference 1).

Groundwater:

The EA online flooding maps indicates that "flooding from groundwater is unlikely in this area".

Canals:

The Leeds and Liverpool canal is located approximately 7km to the South of site. Generally, as controlled water bodies, canals do not pose a direct flood risk.

Reservoirs:

The risk of flooding from reservoirs is included in Figure 4 below and indicates that the site is located within an area at risk of flooding from this source, based on the modelled maximum extent of flooding. The EA notes that these reservoirs are Dean Clough Lower and Dean Clough Upper.

Figure 4: EA reservoir flood risk map. Site location marked with a black marker. (Source – EA).

However, it should be noted that the risk categorised by the EA maps is based on the risk of breaching or the failure of reservoir outfalls. The Strategic Flood Risk Assessment (SFRA) states that reservoir flooding "is a theoretical risk which is very small. Under DEFRA guidelines, United Utilities, which own and manage some reservoir facilities in the area, are subject to strict controls on the publication of information relating to such matters and do not consider that potential reservoir related flooding issues would be used as grounds to refuse planning permission" (Reference 1).

3.0 Confirmation of Existing Flood Risk

As a result of the analysis in Section 2, this FRA report has focused on the risk of fluvial (river flow) and pluvial (surface water) flooding. We have contacted the EA as part of this report to obtain the flood level data for this site and the data they have provided is included as Appendix 2.

The flood map categorises the majority of the site as being located within Flood Zone 1 or having a 'low probability' of fluvial flooding. Land in this classification has an estimated flood risk of less than 1 in 1000 years or <0.1% based on the classification in the Flood Risk and Coastal Change Guidance (Reference 3).

The edges of the building located adjacent to King Street have been categorised as within Flood Zone 3 or having a 'high probability' of fluvial flooding. Land in this classification has an estimated flood risk of 1 in 100 years or 1% or greater (Reference 3).

The proposed redevelopment of the site includes using the majority of the ground floor for the restaurant. This usage would be considered as less vulnerable and as such a suitable usage for Flood Zone 3. The kitchen and a couple of bedrooms on the ground floor are located furthest away from King Street and in Flood Zone 1 and are a suitable usage for more vulnerable classification. Therefore, the sequential and exception tests are not required for this redevelopment.

4.0 Accounting for Flooding Within the Proposed Development

Finished Floor Level:

To assess the site specific flood risk posed to the site topographical levels for the surrounding area as included on the EA maps (see Appendix 2) have been reviewed. A site walkover of the site and surrounding area was also completed (see Appendix 1 for the key site photographs).

The EA have provided flood data for the site which is included in Appendix 2. The EA have provided modelled data for the site and surrounding area (closest node is node 1). The EA have provided modelled data for a number of different scenarios as included in the table below and in Appendix 2. The defended and defences removed levels in the model data were the same. These are listed below in order to make the comparison of the data easier:

Scenario	Annual Exceedance Probability (%)	Level from Modelled Data (mAOD)
Defended	1.0	47.45
Defended	0.5	47.49
Defended	0.1	47.57
Defended with 15% Climate change	1.0	47.49

Generally, when considering the recommended Finished Floor Level (FFL) for the development the agreed practice is to use the 1:100 year (1%) plus climate change allowance data set, with the addition of a 0.6m freeboard, in order to provide additional safety above the estimated flood level.

The EA have only provided a climate change allowance of 15%. The EA changed from recommending a 20% climate change allowance as standard throughout the country, to in 2016, applying a variety of allowances for each region. The site is located in North West and the Higher Central allowances should be applied. These range from 20% (2015- 2039) to 35% (2070- 2115) (Reference 4).

Stage- Discharge Relationship calculations could not be completed to extrapolate the 35% climate change allowance to the existing model data, as the flow data provided in the EA model was 0.03m^3/s for all scenarios.

As such, the highest level has been used (0.1%) plus 0.6m freeboard an alternative for the Finished Floor Level (FFL):

47.57m AOD + 0.6m = 48.17m AOD.

The majority of the proposed ground floor FFL is at a 47.5m AOD level which is at the same level as the surrounding area. Ideally, the FFL could be increased to 48.17m AOD to provide additional freeboard for a climate change allowance. However, increasing the FFL by 0.67m would prevent wheelchair access to the building which is a legal requirement for a hotel and restaurant. It is therefore recommended that the FFL remains at 47.5m AOD which provides 0.05m freeboard above the 1% level and the additional protection measure as outlined below is included in the site design. It is also recommended that following consultation with a flood barrier specialist supplier, flood barriers should be purchased for each access door so these can be fitted during flood warning periods.

Reinstate the Existing Wall:

As part of the redevelopment, it is proposed that the existing wall that surrounds the site adjacent to George Street that has been previously removed from in front of the building on King Street is reinstated. Given that the EA flood maps indicate that the risk of flooding is from the road on King Street reinstating the wall here will provide additional protection from

flooding. This wall should be at a minimum height of 48.17m AOD to protect the building from the 0.1% level plus 0.6m freeboard for climate change allowance. The gate access in the wall should be fitted with a flood barrier to the same height as the wall.

Basement:

As noted on the architect's plans (Appendix 3) and in the site walkover photographs (Appendix 1) a small section of the existing building has a basement level. This basement is located under the outbuildings at the rear of the site and furthest away from King Street and as such would not be in Flood Zone 1 and at a low risk of flooding. As noted on the architect's plans (Reference 3) the proposed use for the basement is for storage.

Safe Egress:

A safe egress route is required to ensure that the customers and staff can safely exit the building and head to an area within Flood Zone 1. Customers and staff would be able to safely exist the building via exits on George Street and at the rear of the building.

5.0 Conclusions

The flood map categorises the majority of the site as being located within Flood Zone 1 or having a 'low probability' of fluvial flooding.

The edges of the building located adjacent to King Street have been categorised as within Flood Zone 3 or having a 'high probability' of fluvial flooding. Land in this classification has an estimated flood risk of 1 in 100 years or 1% or greater (Reference 3).

The proposed redevelopment of the site includes using the majority of the ground floor for the restaurant. This usage would be considered as less vulnerable and as such a suitable usage for Flood Zone 3. The kitchen and a couple of bedrooms on the ground floor are located furthest away from King Street and in Flood Zone 1 and are a suitable usage for more vulnerable classification

The majority of the proposed ground floor FFL is at a 47.5m AOD level which is at the same level as the surrounding area. Ideally, the FFL could be increased to 48.17m AOD to provide additional freeboard for a climate change allowance. However, increasing the FFL by 0.67m would prevent wheelchair access to the building which is a legal requirement for a hotel and restaurant. It is therefore recommended that the FFL remains at 47.5m AOD which provides 0.05m freeboard above the 1% level and the additional protection measure as outlined below is included in the site design. It is also recommended that following consultation with a flood barrier specialist supplier, flood barriers should be purchased for each access door so these can be fitted during flood warning periods.

As part of the redevelopment, it is proposed that the existing wall that surrounds the site adjacent to George Street that has been previously removed from in front of the building on

King Street is reinstated. Given that the EA flood maps indicate that the risk of flooding is from the road on King Street reinstating the wall here will provide additional protection from flooding. This wall should be at a minimum height of 48.17m AOD to protect the building from the 0.1% level plus 0.6m freeboard for climate change allowance. The gate access in the wall should be fitted with a flood barrier to the same height as the wall.

As noted on the architect's plans (Appendix 3) and in the site walkover photographs (Appendix 1) a small section of the existing building has a basement level. This basement is located under the outbuildings at the rear of the site and furthest away from King Street and as such would not be in Flood Zone 1 and at a low risk of flooding. As noted on the architect's plans (Reference 3) the proposed use for the basement is for storage.

6.0 References

1. Strategic Risk Assessment Level 1. Ribble Valley Borough Council. April 2017.

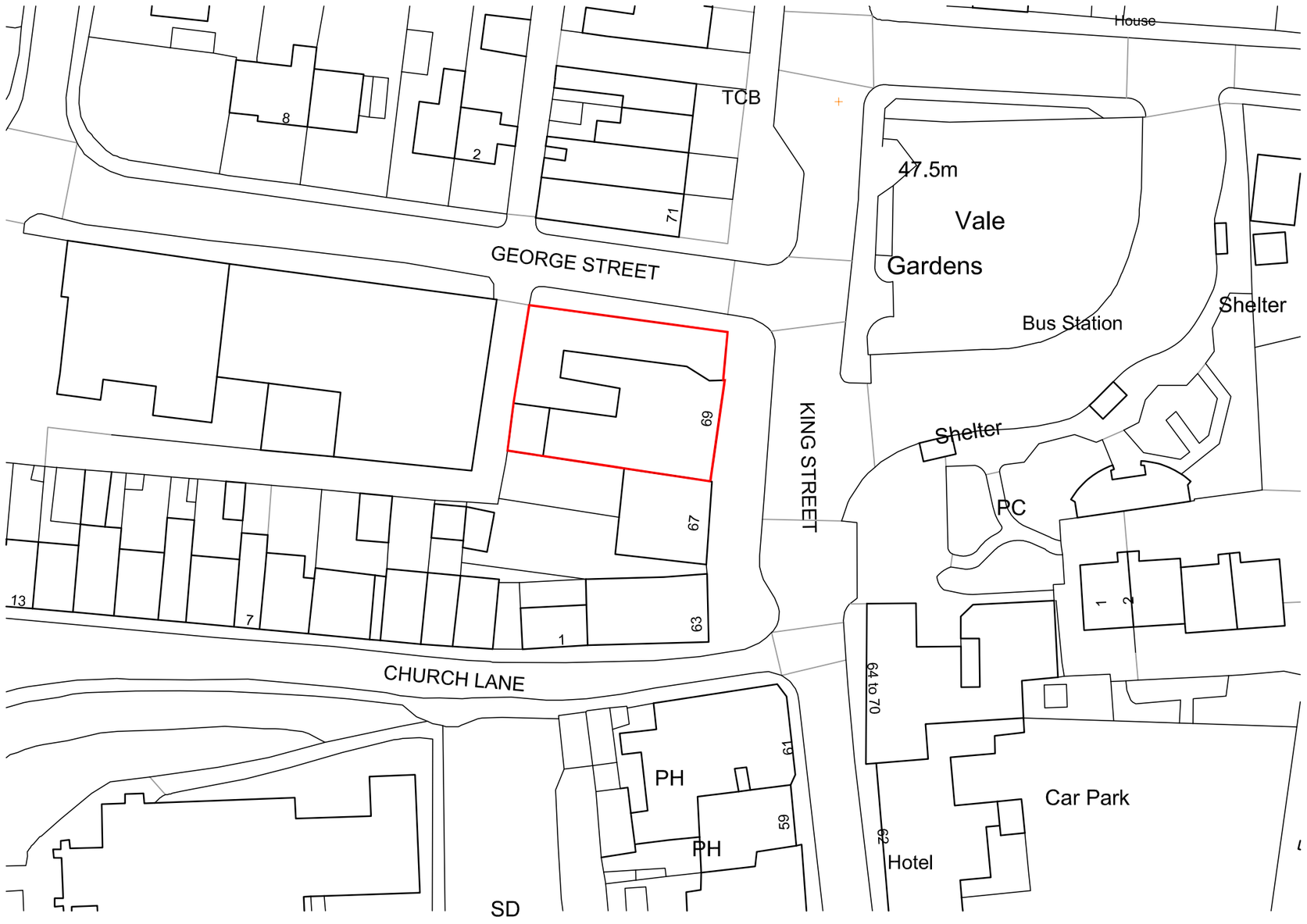
2. Ribble Catchment Flood Management Plan. Environment Agency. December 2009.

3. Flood Risk and Coastal Change Guidance. Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities. August 2022.

4. Flood Risk Assessments: Climate Change Allowances. Environment Agency. February 2016.

Plans

Revision	Date	Revision note	Drawn by	Purpose of issue
-	05.02.24	First issue	LM	Planning



Project Conversion and extension to 69 King Street Whalley	Drawing title Location plan	Scale 1:1250 @ A4	LMC Architecture Limited Architectural design services 4 Dovedale Drive, Ightenhill, Burnley, Lancashire, BB12 8XD Web : www.lmcarchitecture.co.uk
Client Ronnan Corporation	Drawing number 2339–LP01	Date 05.02.24	

Appendix 1

Key Site Photographs

Photo 1: Front of building on King Street.

Photo 2: Existing front door on King Street with steps up from pavement.

Photo 3: Front of the building. The demarcation between the two different pavement surfaces is where it is proposed to reinstate the wall in front of the building.

Photo 4: Existing wall on the George Street side of the building.

Photo 5: Side of building on George Street.

Photo 6: Rear of the building on George Street looking towards King Street at a lower level.

Photo 7: Rear of the building.

Photo 8: Rear of the building towards the outbuildings where the basement area is located.

Appendix 2

Flood risk assessment data

Location of site: 373304 / 436239 (shown as easting and northing coordinates)
Document created on: 27 August 2024
This information was previously known as a product 4.
Customer reference number: GKFKM1YAM7NA

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)
- historic flooding
- flood defences and attributes
- information to help you assess if there is a reduced flood risk from rivers and the sea because of defences
- modelled data
- climate change modelled data
- information about strategic flood risk assessments
- information about this data
- information about flood risk activity permits
- help and advice

Surface water and other sources of flooding

Use the long term flood risk service to find out about the risk of flooding from:

- surface water
- ordinary watercourses
- reservoirs

Or you can contact your Lead Local Flood Authority for further information.

Your Lead Local Flood Authority is Ribble Valley.

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

About the models used

Model name: Whalley 2017
Scenario(s): Defended fluvial, defences removed fluvial, defended climate change fluvial, defences removed climate change fluvial
Date: 11 August 2017

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 occuring 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

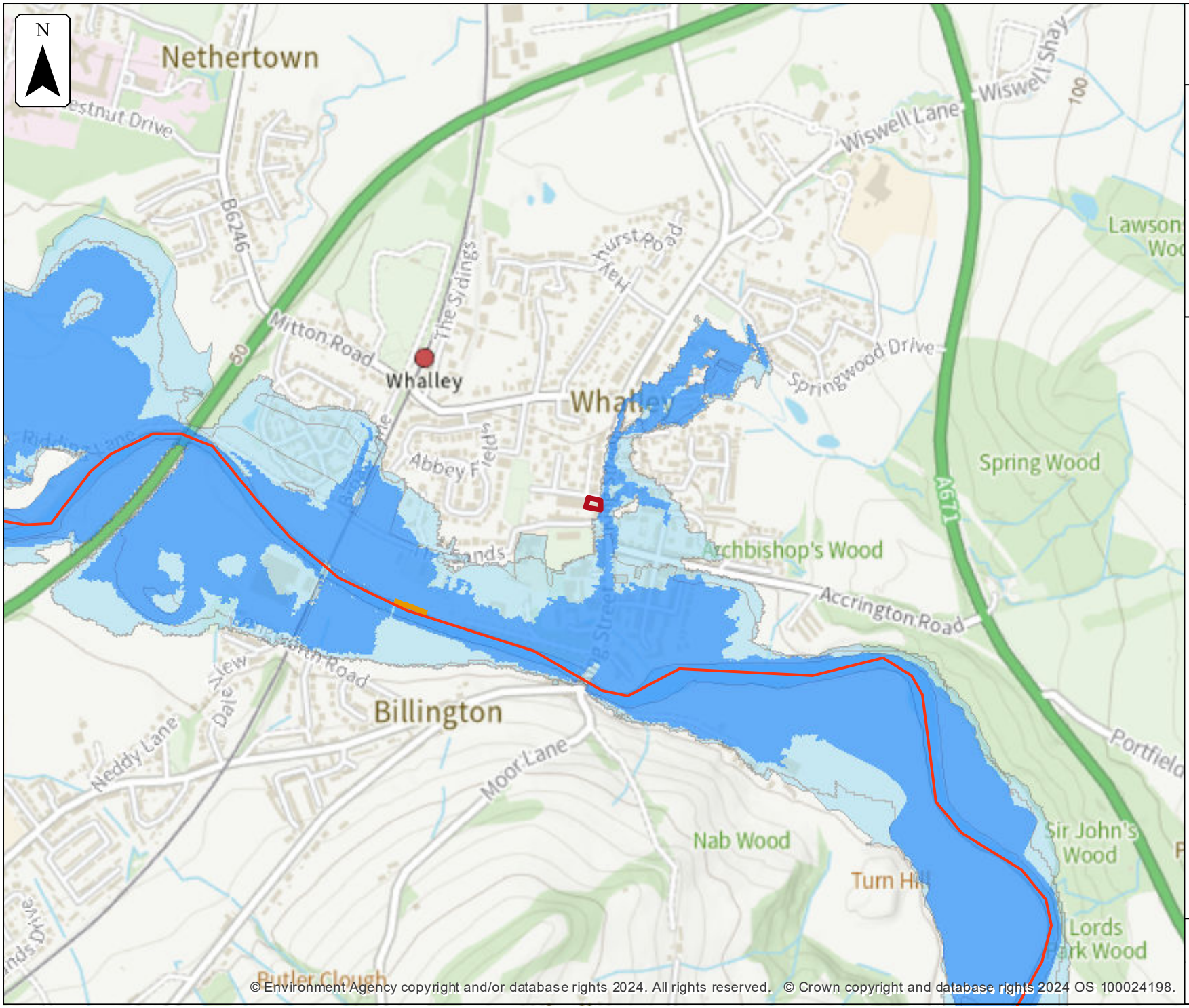
Flood zone 2 shows the area at risk of flooding for an undefended flood event with:

- 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

The flood zones are not currently being updated. The last update was in November 2023. Some of the flood zones may have changed, however all source data is included in the models below.



Historic flooding

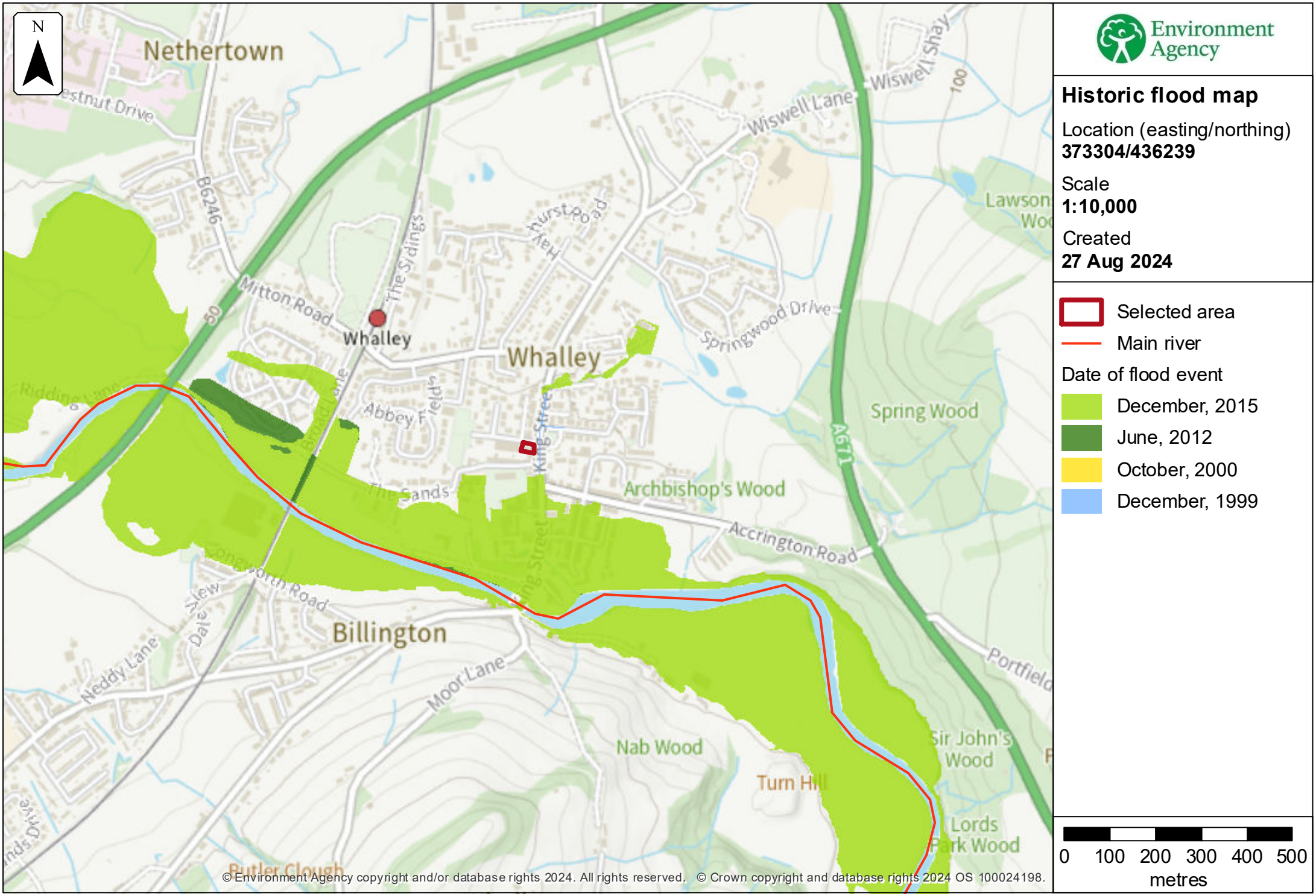
This map is an indicative outline of areas that have previously flooded. Remember that:

- our records are incomplete, so the information here is based on the best available data
- it is possible not all properties within this area will have flooded
- other flooding may have occurred that we do not have records for
- flooding can come from a range of different sources - we can only supply flood risk data relating to flooding from rivers or the sea

You can also contact your Lead Local Flood Authority or Internal Drainage Board to see if they have other relevant local flood information. Please note that some areas do not have an Internal Drainage Board.

Your Lead Local Flood Authority is Ribble Valley.

Download recorded flood outlines in GIS format



Environment Agency

Historic flood map

Location (easting/northing)
373304/436239

Scale
1:10,000

Created
27 Aug 2024

- Selected area
- Main river

Date of flood event

- December, 2015
- June, 2012
- October, 2000
- December, 1999

0 100 200 300 400 500
metres

Historic flood event data

Start date	End date	Source of flood	Cause of flood	Affects location
26 December 2015	27 December 2015	ordinary watercourse	channel capacity exceeded (no raised defences)	No
22 June 2012	23 June 2012	main river	channel capacity exceeded (no raised defences)	No
26 October 2000	27 October 2000	main river	channel capacity exceeded (no raised defences)	No
11 December 1999	12 December 1999	ordinary watercourse	obstruction/blockage - debris screen	No

Flood defences and attributes

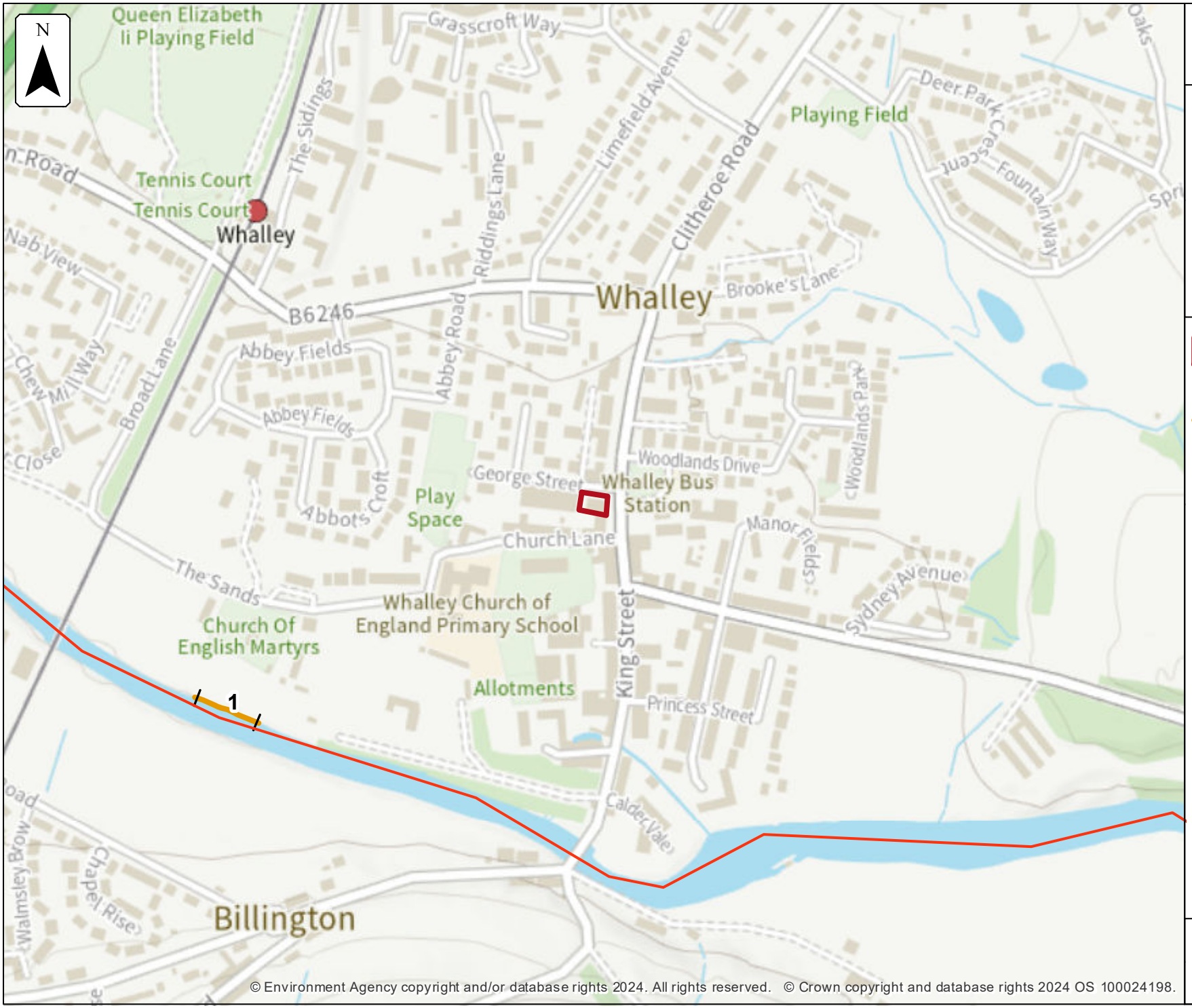
The flood defences map shows the location of the flood defences present.

The flood defences data table shows the type of defences, their condition and the standard of protection. It shows the height above sea level of the top of the flood defence (crest level). The height is In mAOD which is the metres above the mean sea level at Newlyn, Cornwall.

It's important to remember that flood defence data may not be updated on a regular basis. The information here is based on the best available data.

Use this information:

- to help you assess if there is a reduced flood risk for this location because of defences
- with any information in the modelled data section to find out the impact of defences on flood risk



Environment Agency

Flood defences

Location (easting/northing)
373304/436239

Scale
1:5,000

Created
27 Aug 2024

- Selected area
- Main river
- Flood defence

0 50 100 150 200 250
metres

Flood defences data

Label	Asset ID	Asset Type	Standard of protection (years)	Current condition	Downstream actual crest level (mAOD)	Upstream actual crest level (mAOD)	Effective crest level (mAOD)
1	64827	Embankment	5	Poor	43.90	43.90	43.90

Any blank cells show where a particular value has not been recorded for an asset.

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

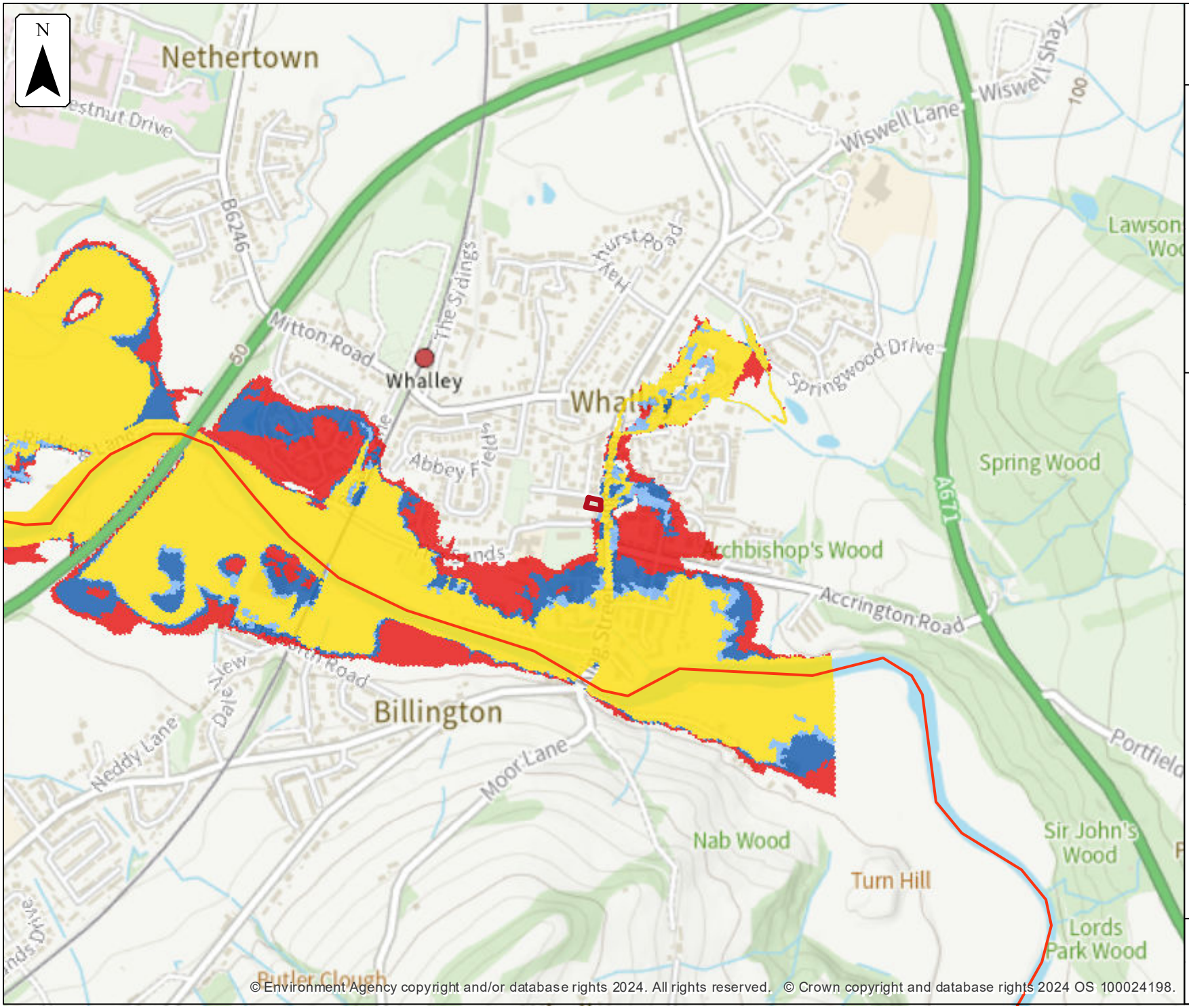
The climate change data included in the models may not include the latest flood risk assessment climate change allowances. Where the new allowances are not available you will need to consider this data and factor in the new allowances to demonstrate the development will be safe from flooding.

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:

- Defended modelled fluvial: risk of flooding from rivers where there are flood defences
- Defences removed modelled fluvial: risk of flooding from rivers where flood defences have been removed
- Defended climate change modelled fluvial: risk of flooding from rivers where there are flood defences, including estimated impact of climate change
- Defences removed climate change modelled fluvial: risk of flooding from rivers where flood defences have been removed, including estimated impact of climate change



Environment Agency

Defended modelled fluvial extent

Location (easting/northing)
373304/436239

Scale
1:10,000

Created
27 Aug 2024

Model name
Whalley 2017

- Selected area
- Main river

Modelled flood extent

- 1.33% AEP
- 1% AEP
- 0.5% AEP
- 0.1% AEP

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

0 100 200 300 400 500
metres

Environment Agency

Defended modelled fluvial node locations

Location (easting/northing)
373304/436239

Scale
1:2,500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Modelled location

Main river

0 25 50 75 100
metres

Modelled node locations data

Defended

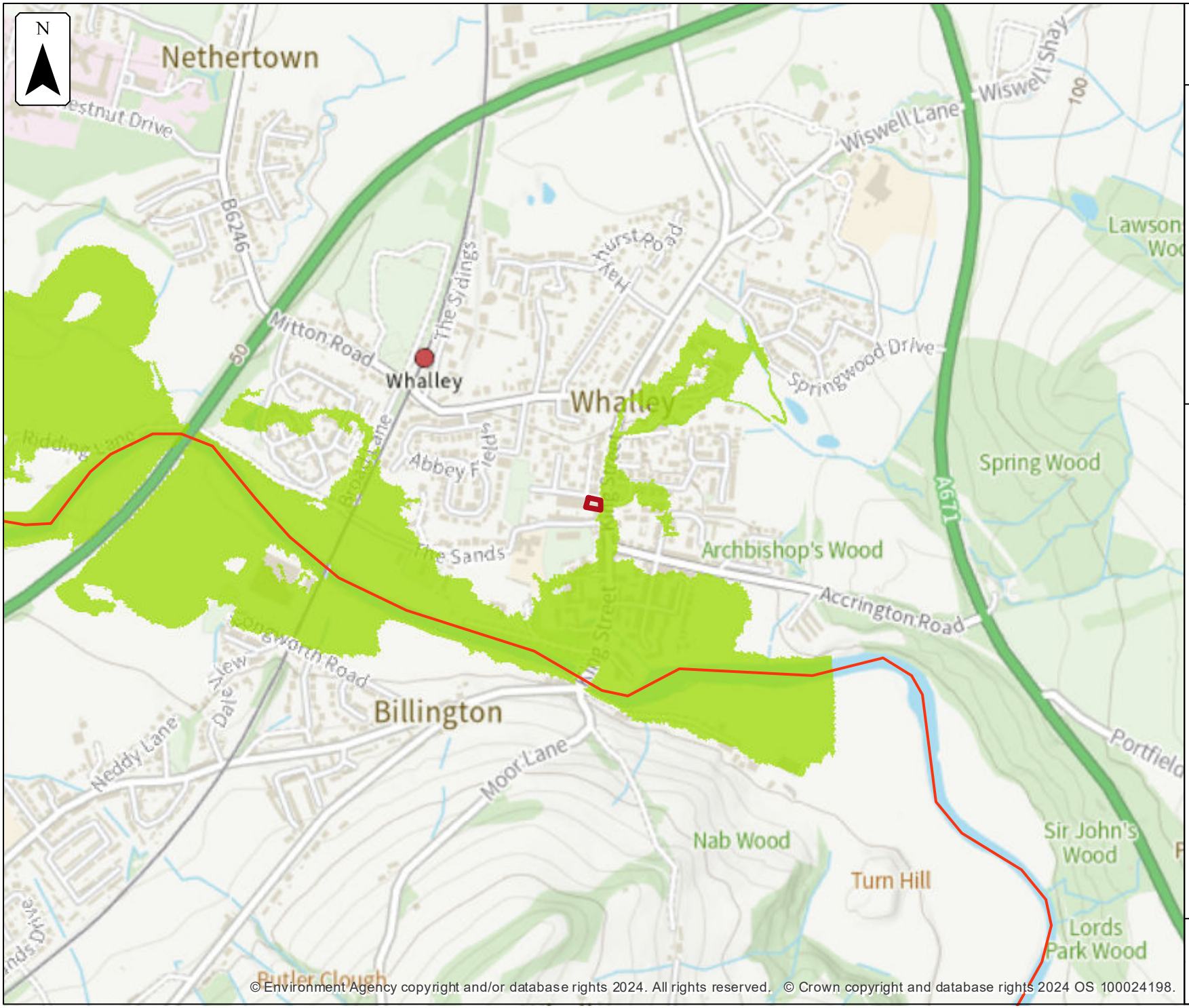
Label	Modelled location ID	Easting	Northing	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level
1	931692	373333	436270			47.45	47.49	47.57
2	931613	373334	436151			45.97	46.03	46.94
3	931614	373336	436037			45.40	45.87	46.90
4	931602	373337	436308			47.97	48.04	48.11
5	931687	373373	436378	48.86	49.06	49.08	49.13	49.25
6	931688	373394	436379	49.17	49.28	49.30	49.38	49.55
7	931648	373406	436382	49.41	49.52	49.55	49.64	49.85
8	931643	373425	436390	49.86	50.0	50.04	50.15	50.48
9	931662	373452	436396	50.27	50.43	50.47	50.54	50.90
10	931605	373470	436395	50.52	50.66	50.70	50.79	51.24

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.

Defended

Label	Modelled location ID	Easting	Northing	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow
1	931692	373333	436270			0.03	0.03	0.03
2	931613	373334	436151			0.03	0.03	0.03
3	931614	373336	436037			0.20	0.21	0.81
4	931602	373337	436308			0.35	0.35	0.35
5	931687	373373	436378	2.54	3.27	3.43	4.12	5.98
6	931688	373394	436379	2.54	3.27	3.43	4.11	6.0
7	931648	373406	436382	2.54	3.27	3.44	4.13	6.02
8	931643	373425	436390	2.14	2.67	2.85	3.32	4.90
9	931662	373452	436396	2.15	2.68	2.85	3.31	4.91
10	931605	373470	436395	2.15	2.68	2.86	3.34	3.99

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.



Environment Agency

Defended climate change modelled fluvial extent

Location (easting/northing)
373304/436239

Scale
1:10,000

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Main river

Modelled flood extent

1.0% AEP (+15%)

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

0 100 200 300 400 500
metres

Environment Agency

Defended climate change modelled fluvial node locations

Location (easting/northing)
373304/436239

Scale
1:2,500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Modelled location

Main river

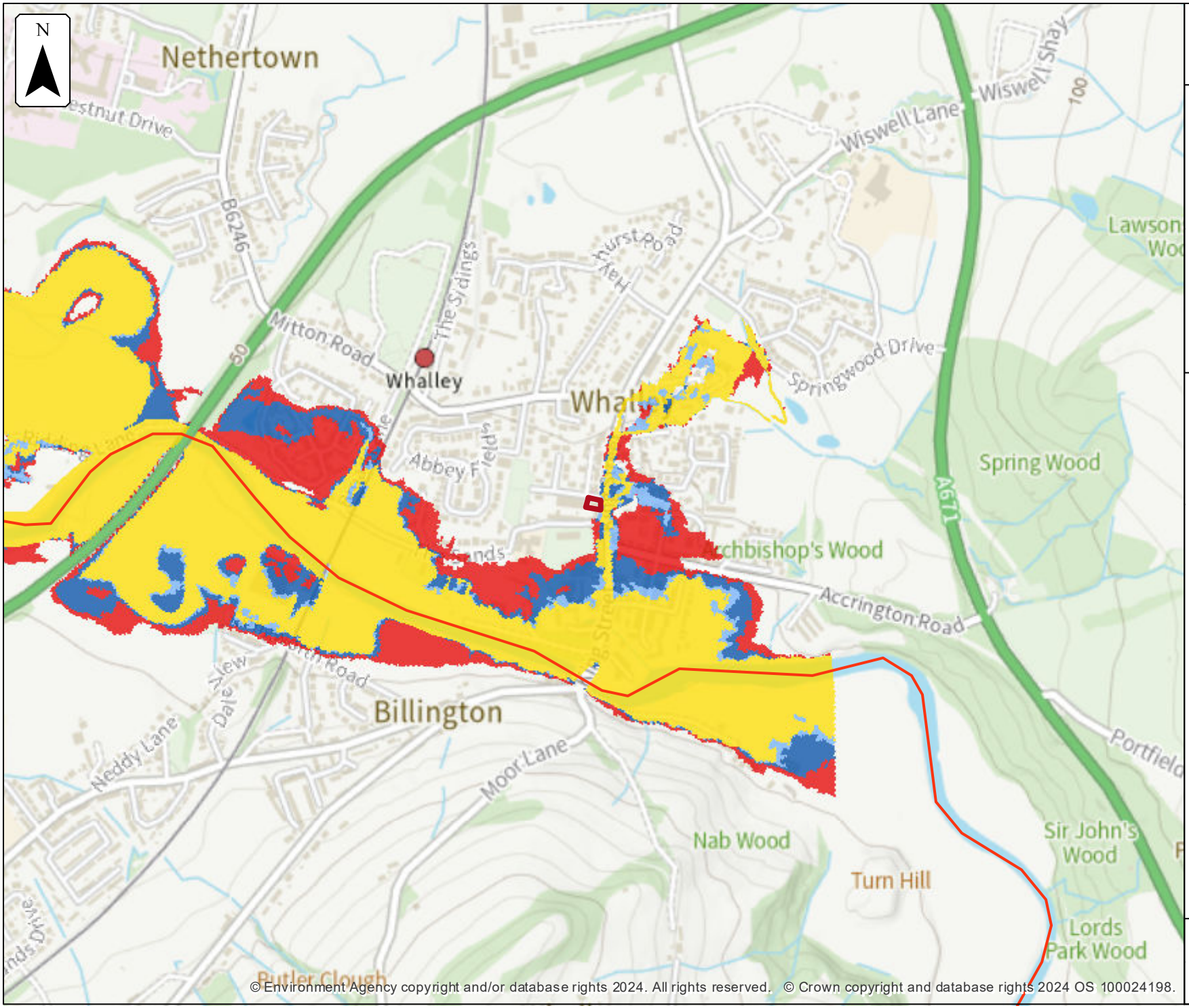
0 25 50 75 100
metres

Modelled node locations data

Defended climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+15%)	1.0% AEP (+15%)
				Level	Flow
1	931692	373333	436270	47.49	0.03
2	931613	373334	436151	46.02	0.03
3	931614	373336	436037	45.81	0.20
4	931602	373337	436308	48.03	0.35
5	931687	373373	436378	49.11	3.97
6	931688	373394	436379	49.36	3.96
7	931648	373406	436382	49.62	3.96
8	931643	373425	436390	50.14	3.27
9	931662	373452	436396	50.53	3.25
10	931605	373470	436395	50.78	3.29

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.



Environment Agency

Defences removed modelled fluvial node locations

Location (easting/northing)
373304/436239

Scale
1:2,500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Modelled location

Main river

0 25 50 75 100
metres

Modelled node locations data

Defences removed

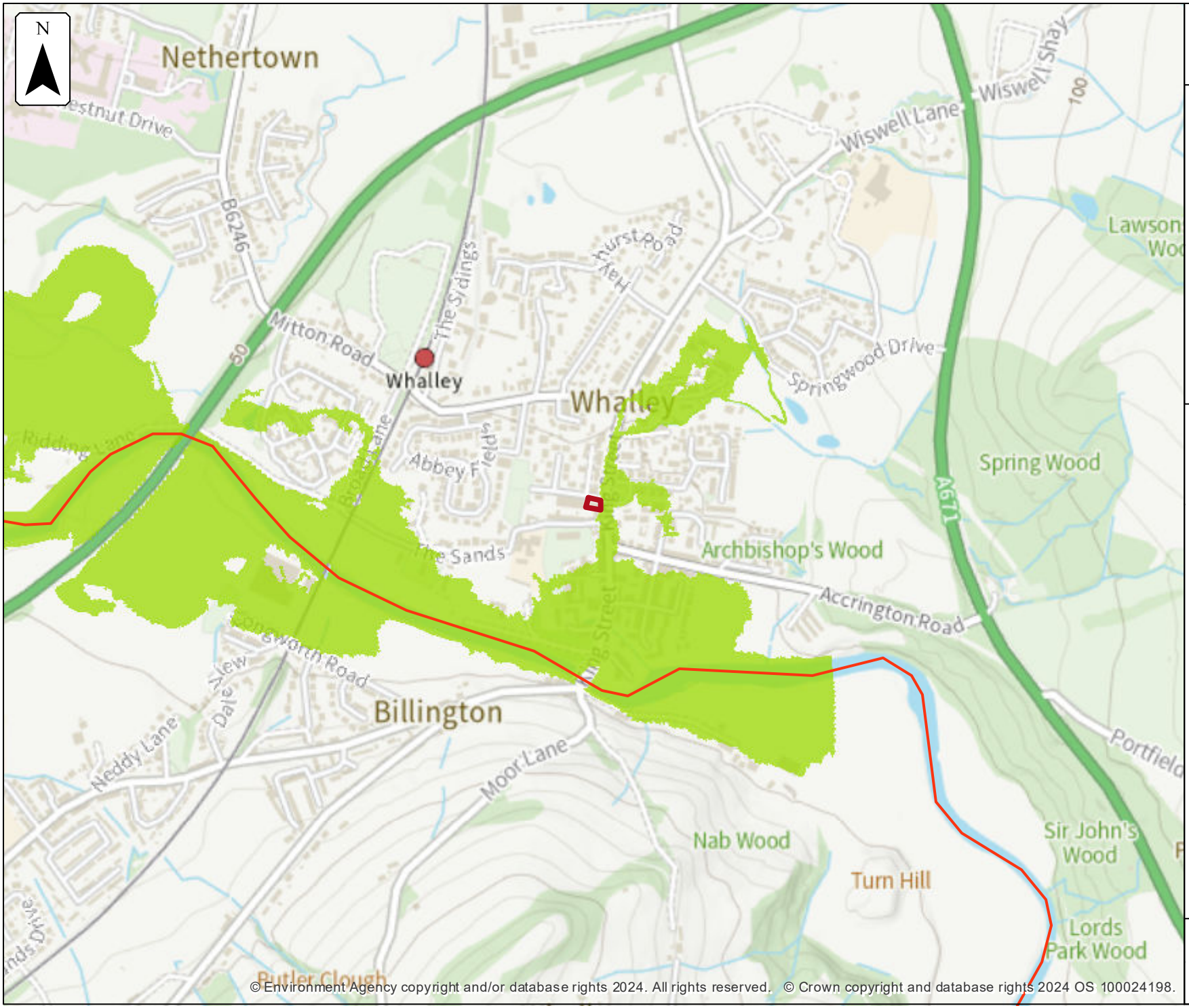
Label	Modelled location ID	Easting	Northing	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Level	Level	Level	Level	Level
1	931692	373333	436270			47.45	47.49	47.57
2	931613	373334	436151			45.97	46.03	46.94
3	931614	373336	436037			45.40	45.87	46.90
4	931602	373337	436308			47.97	48.04	48.11
5	931687	373373	436378	48.85	49.06	49.08	49.13	49.25
6	931688	373394	436379	49.17	49.28	49.30	49.38	49.55
7	931648	373406	436382	49.41	49.52	49.55	49.64	49.85
8	931643	373425	436390	49.86	50.0	50.04	50.15	50.49
9	931662	373452	436396	50.27	50.42	50.47	50.54	50.90
10	931605	373470	436395	50.52	50.66	50.70	50.79	51.25

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.

Defences removed

Label	Modelled location ID	Easting	Northing	4% AEP	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
				Flow	Flow	Flow	Flow	Flow
1	931692	373333	436270			0.03	0.03	0.03
2	931613	373334	436151			0.03	0.03	0.03
3	931614	373336	436037			0.20	0.20	0.80
4	931602	373337	436308			0.35	0.35	0.35
5	931687	373373	436378	2.54	3.28	3.43	4.11	6.01
6	931688	373394	436379	2.54	3.27	3.43	4.11	6.04
7	931648	373406	436382	2.54	3.27	3.43	4.13	6.05
8	931643	373425	436390	2.14	2.67	2.85	3.32	4.94
9	931662	373452	436396	2.13	2.67	2.84	3.33	4.88
10	931605	373470	436395	2.15	2.69	2.85	3.30	4.0

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.



Environment Agency

Defences removed climate change modelled fluvial extent

Location (easting/northing)
373304/436239

Scale
1:10,000

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Main river

Modelled flood extent

1.0% AEP (+15%)

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

0 100 200 300 400 500
metres

Environment Agency

Defences removed climate change modelled fluvial node locations

Location (easting/northing)
373304/436239

Scale
1:2,500

Created
27 Aug 2024

Model name
Whalley 2017

- Selected area
- Modelled location
- Main river

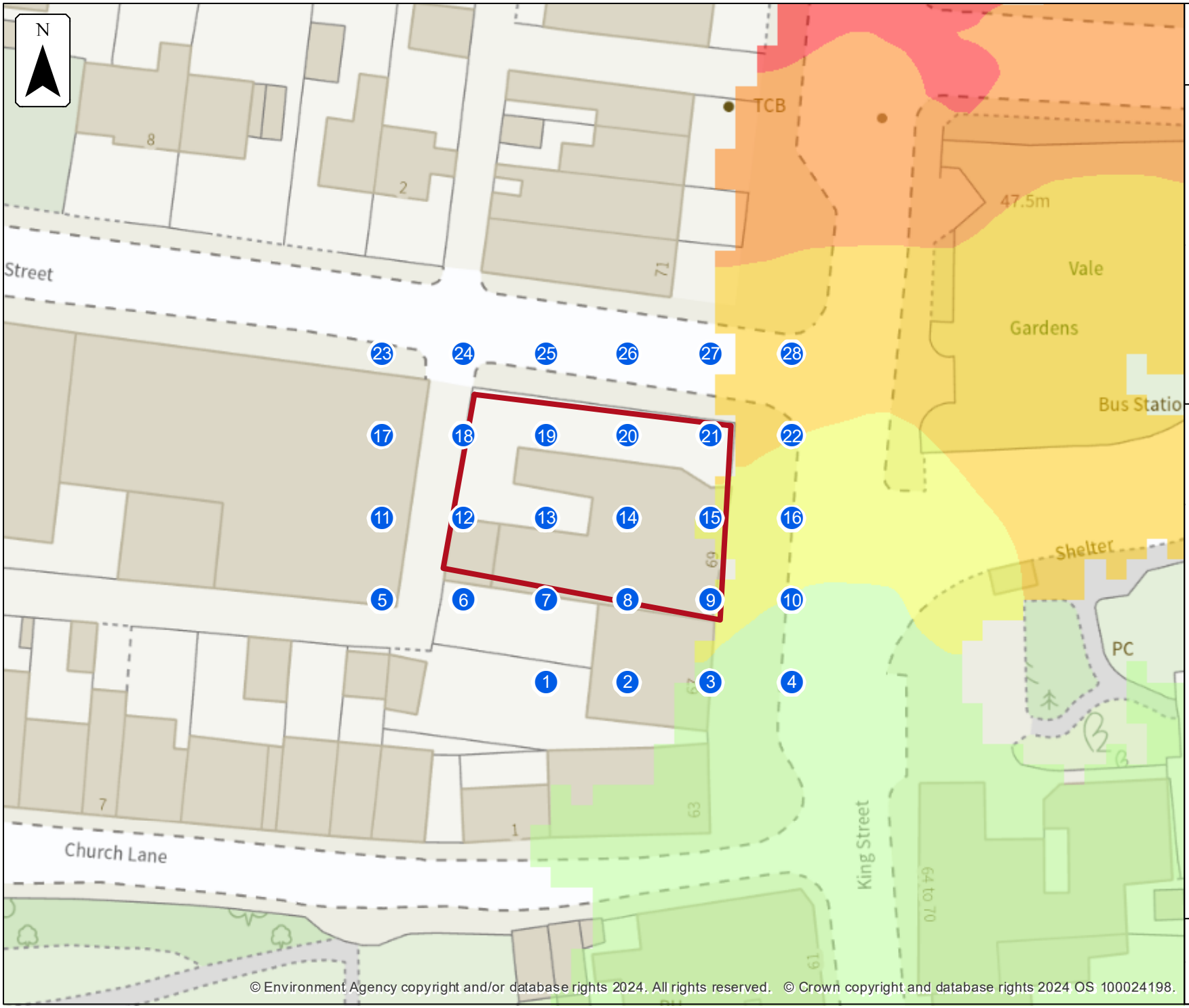
0 25 50 75 100
metres

Modelled node locations data

Defences removed climate change

Label	Modelled location ID	Easting	Northing	1.0% AEP (+15%)	1.0% AEP (+15%)
				Level	Flow
1	931692	373333	436270	47.49	0.03
2	931613	373334	436151	46.02	0.03
3	931614	373336	436037	45.81	0.20
4	931602	373337	436308	48.03	0.35
5	931687	373373	436378	49.11	3.97
6	931688	373394	436379	49.36	3.96
7	931648	373406	436382	49.62	3.96
8	931643	373425	436390	50.14	3.27
9	931662	373452	436396	50.53	3.25
10	931605	373470	436395	50.78	3.29

Data in this table comes from the Whalley 2017 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.
If no level or flow data is available for a scenario, no table will be shown.



Environment Agency

Defended modelled fluvial extent and height

Location (easting/northing)
373304/436239

Scale
1:500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 46.0
- 46.0 - 46.25
- 46.25 - 46.5
- 46.5 - 46.75
- 46.75 - 47.0
- 47.0 - 47.25
- 47.25 - 47.5
- 47.5 - 47.75
- 47.75 - 48.0

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

Sample point data

Defended

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth
1	373300	436222	NoData	NoData	NoData	NoData
2	373308	436222	NoData	NoData	NoData	NoData
3	373316	436222	NoData	0	0	0.02
4	373324	436222	0.01	0.03	0.06	0.17
5	373284	436230	NoData	NoData	NoData	NoData
6	373292	436230	NoData	NoData	NoData	NoData
7	373300	436230	NoData	NoData	NoData	NoData
8	373308	436230	NoData	NoData	NoData	NoData
9	373316	436230	NoData	NoData	NoData	NoData
10	373324	436230	0.02	0.03	0.06	0.09
11	373284	436238	NoData	NoData	NoData	NoData
12	373292	436238	NoData	NoData	NoData	NoData
13	373300	436238	NoData	NoData	NoData	NoData
14	373308	436238	NoData	NoData	NoData	NoData
15	373316	436238	NoData	NoData	NoData	0
16	373324	436238	0.00	0.03	0.05	0.08

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth
17	373284	436246	NoData	NoData	NoData	NoData
18	373292	436246	NoData	NoData	NoData	NoData
19	373300	436246	NoData	NoData	NoData	NoData
20	373308	436246	NoData	NoData	NoData	NoData
21	373316	436246	NoData	NoData	NoData	NoData
22	373324	436246	0.01	0.01	0.05	0.13
23	373284	436254	NoData	NoData	NoData	NoData
24	373292	436254	NoData	NoData	NoData	NoData
25	373300	436254	NoData	NoData	NoData	NoData
26	373308	436254	NoData	NoData	NoData	NoData
27	373316	436254	NoData	NoData	NoData	NoData
28	373324	436254	0.02	0.05	0.08	0.14
Max value in selected area:			NoData	NoData	NoData	0.00

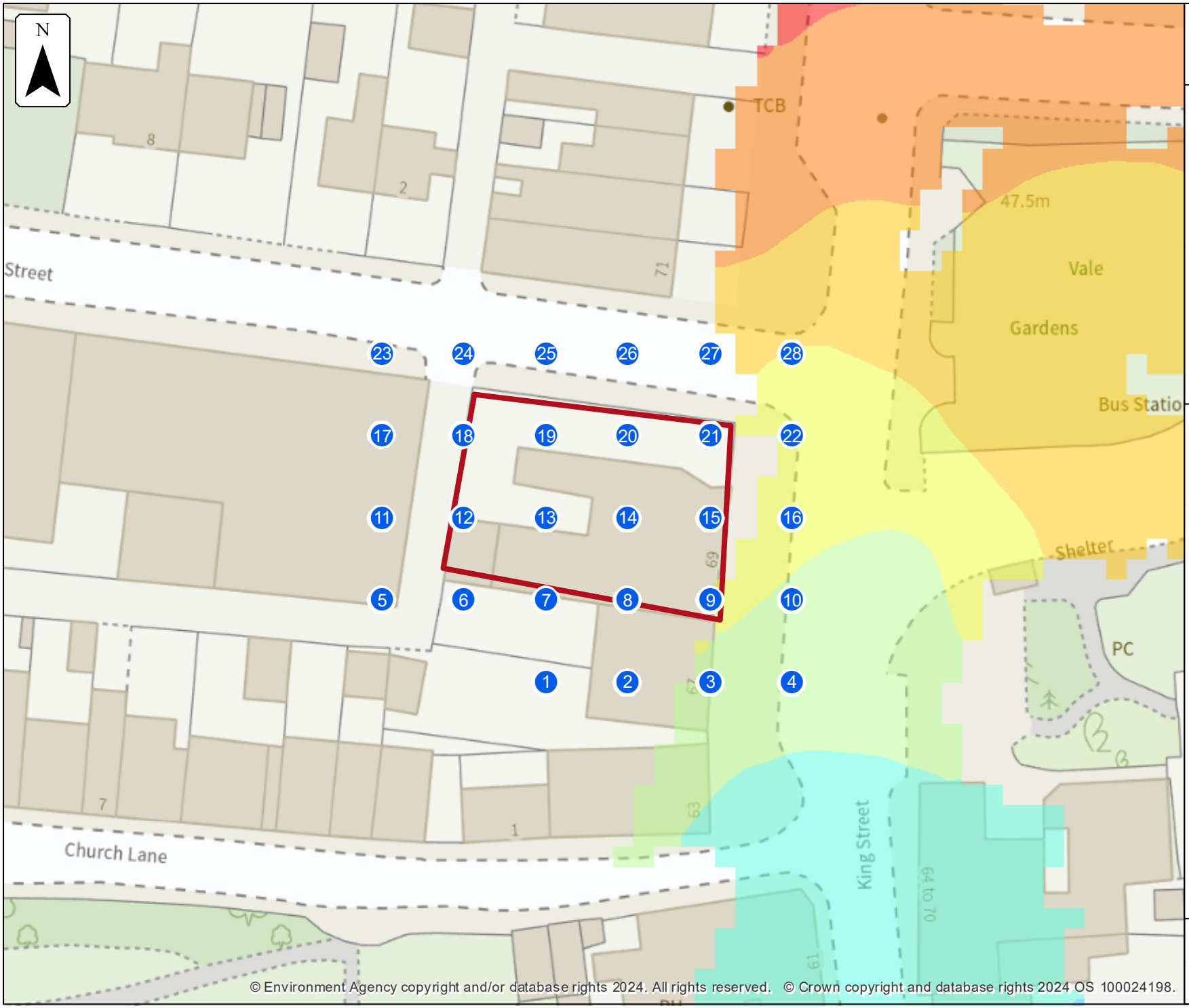
Data in this table comes from the Whalley 2017 model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defended

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height
1	373300	436222	NoData	NoData	NoData	NoData
2	373308	436222	NoData	NoData	NoData	NoData
3	373316	436222	NoData	46.95	46.95	46.98
4	373324	436222	46.79	46.81	46.84	46.95
5	373284	436230	NoData	NoData	NoData	NoData
6	373292	436230	NoData	NoData	NoData	NoData
7	373300	436230	NoData	NoData	NoData	NoData
8	373308	436230	NoData	NoData	NoData	NoData
9	373316	436230	NoData	NoData	NoData	NoData
10	373324	436230	46.89	46.93	46.95	46.98
11	373284	436238	NoData	NoData	NoData	NoData
12	373292	436238	NoData	NoData	NoData	NoData
13	373300	436238	NoData	NoData	NoData	NoData
14	373308	436238	NoData	NoData	NoData	NoData
15	373316	436238	NoData	NoData	NoData	47.23
16	373324	436238	47.01	47.05	47.08	47.11
17	373284	436246	NoData	NoData	NoData	NoData
18	373292	436246	NoData	NoData	NoData	NoData

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height
19	373300	436246	NoData	NoData	NoData	NoData
20	373308	436246	NoData	NoData	NoData	NoData
21	373316	436246	NoData	NoData	NoData	NoData
22	373324	436246	47.09	47.12	47.17	47.25
23	373284	436254	NoData	NoData	NoData	NoData
24	373292	436254	NoData	NoData	NoData	NoData
25	373300	436254	NoData	NoData	NoData	NoData
26	373308	436254	NoData	NoData	NoData	NoData
27	373316	436254	NoData	NoData	NoData	NoData
28	373324	436254	47.18	47.21	47.24	47.30
Max value in selected area:			NoData	NoData	NoData	47.25

Data in this table comes from the Whalley 2017 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.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defended climate change modelled fluvial extent and height

Location (easting/northing)
373304/436239

Scale
1:500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 46.0
- 46.0 - 46.25
- 46.25 - 46.5
- 46.5 - 46.75
- 46.75 - 47.0
- 47.0 - 47.25
- 47.25 - 47.5
- 47.5 - 47.75
- 47.75 - 48.0

This map shows the
1.0% AEP +15% height data

0 5 10 15 20
metres

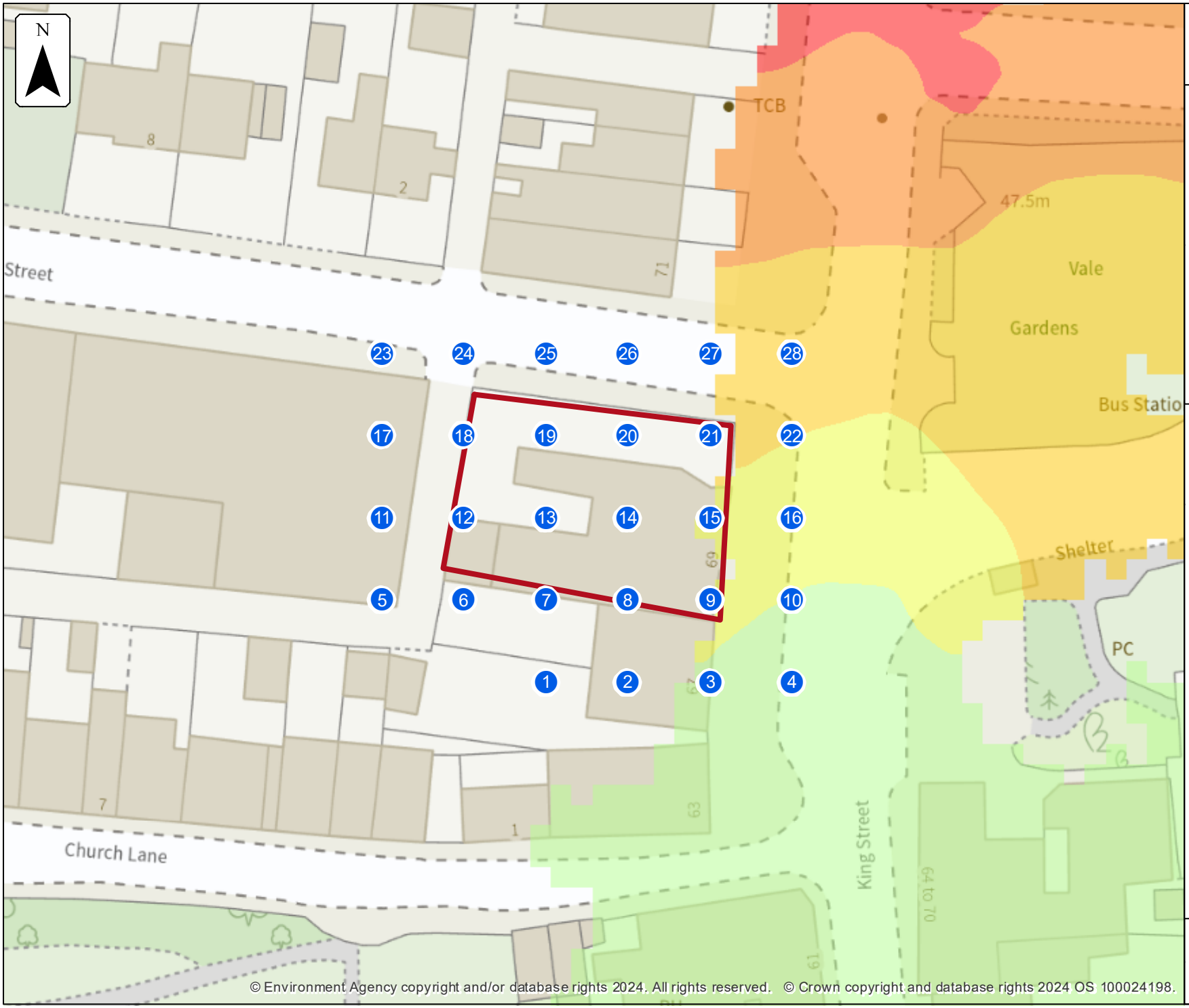
Sample point data

Defended climate change

Label	Easting	Northing	1% AEP (+15%)	1% AEP (+15%)
			Depth	Height
1	373300	436222	NoData	NoData
2	373308	436222	NoData	NoData
3	373316	436222	0	46.95
4	373324	436222	0.05	46.83
5	373284	436230	NoData	NoData
6	373292	436230	NoData	NoData
7	373300	436230	NoData	NoData
8	373308	436230	NoData	NoData
9	373316	436230	NoData	NoData
10	373324	436230	0.05	46.95
11	373284	436238	NoData	NoData
12	373292	436238	NoData	NoData
13	373300	436238	NoData	NoData
14	373308	436238	NoData	NoData
15	373316	436238	NoData	NoData
16	373324	436238	0.05	47.07

Label	Easting	Northing	1% AEP (+15%)	1% AEP (+15%)
			Depth	Height
17	373284	436246	NoData	NoData
18	373292	436246	NoData	NoData
19	373300	436246	NoData	NoData
20	373308	436246	NoData	NoData
21	373316	436246	NoData	NoData
22	373324	436246	0.04	47.16
23	373284	436254	NoData	NoData
24	373292	436254	NoData	NoData
25	373300	436254	NoData	NoData
26	373308	436254	NoData	NoData
27	373316	436254	NoData	NoData
28	373324	436254	0.07	47.24
Max value in selected area:			NoData	NoData

Data in this table comes from the Whalley 2017 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.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.



Environment Agency

Defences removed modelled fluvial extent and height

Location (easting/northing)
373304/436239

Scale
1:500

Created
27 Aug 2024

Model name
Whalley 2017

Selected area

Main river

Modelled 2D grid
Water level in mAOD

- 0 - 46.0
- 46.0 - 46.25
- 46.25 - 46.5
- 46.5 - 46.75
- 46.75 - 47.0
- 47.0 - 47.25
- 47.25 - 47.5
- 47.5 - 47.75
- 47.75 - 48.0

This map shows the 0.1% AEP height data

0 5 10 15 20
metres

Sample point data

Defences removed

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth
1	373300	436222	NoData	NoData	NoData	NoData
2	373308	436222	NoData	NoData	NoData	NoData
3	373316	436222	NoData	0	0	0.02
4	373324	436222	0.01	0.03	0.06	0.17
5	373284	436230	NoData	NoData	NoData	NoData
6	373292	436230	NoData	NoData	NoData	NoData
7	373300	436230	NoData	NoData	NoData	NoData
8	373308	436230	NoData	NoData	NoData	NoData
9	373316	436230	NoData	NoData	NoData	NoData
10	373324	436230	0.02	0.03	0.06	0.09
11	373284	436238	NoData	NoData	NoData	NoData
12	373292	436238	NoData	NoData	NoData	NoData
13	373300	436238	NoData	NoData	NoData	NoData
14	373308	436238	NoData	NoData	NoData	NoData
15	373316	436238	NoData	NoData	NoData	0
16	373324	436238	0.00	0.03	0.05	0.08

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Depth	Depth	Depth	Depth
17	373284	436246	NoData	NoData	NoData	NoData
18	373292	436246	NoData	NoData	NoData	NoData
19	373300	436246	NoData	NoData	NoData	NoData
20	373308	436246	NoData	NoData	NoData	NoData
21	373316	436246	NoData	NoData	NoData	NoData
22	373324	436246	0.01	0.01	0.05	0.13
23	373284	436254	NoData	NoData	NoData	NoData
24	373292	436254	NoData	NoData	NoData	NoData
25	373300	436254	NoData	NoData	NoData	NoData
26	373308	436254	NoData	NoData	NoData	NoData
27	373316	436254	NoData	NoData	NoData	NoData
28	373324	436254	0.02	0.05	0.08	0.14
Max value in selected area:			NoData	NoData	NoData	0.00

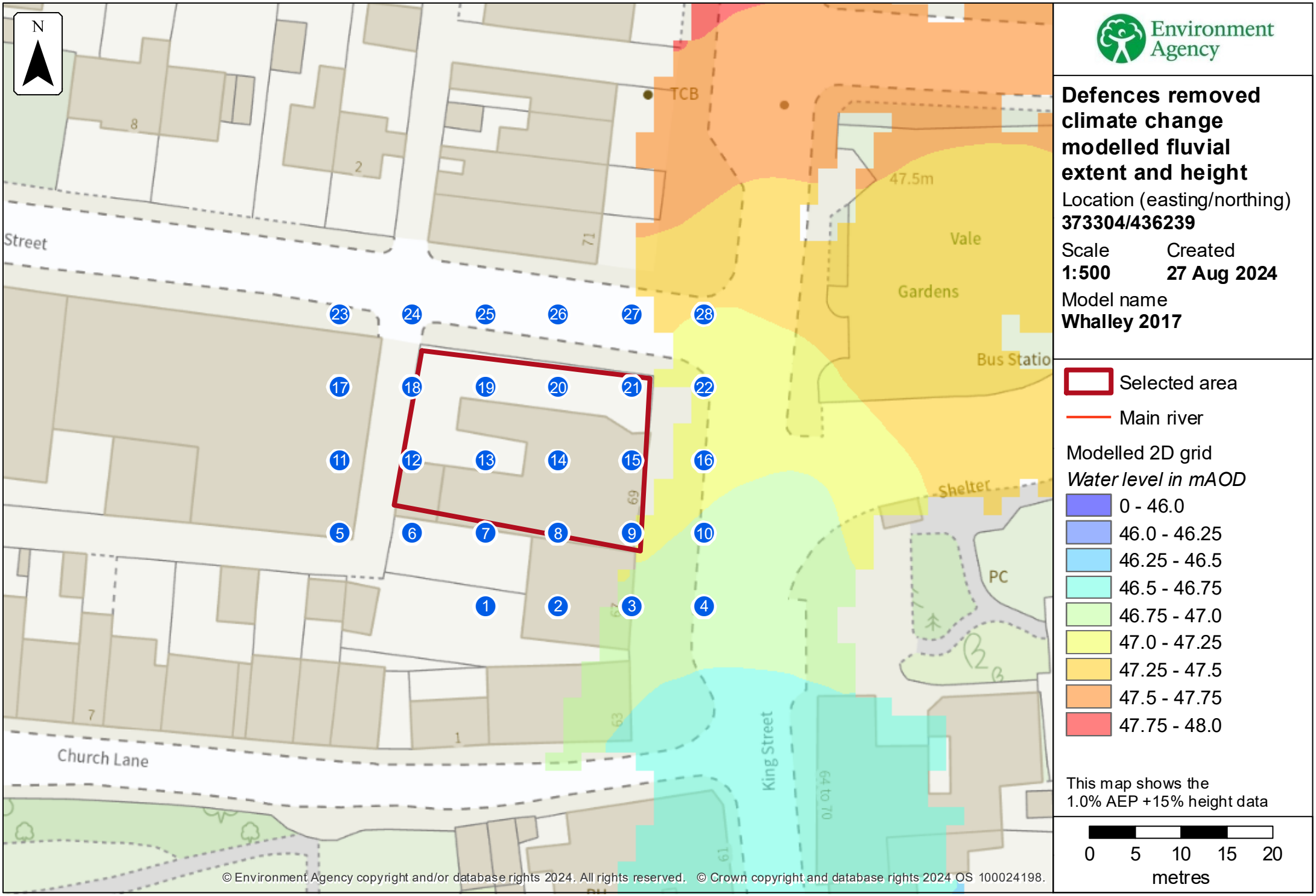
Data in this table comes from the Whalley 2017 model.
Height values are shown in mAOD, and depth values are shown in metres.
Any blank cells show where a particular scenario has not been modelled for this location.
Cells which contain text 'NoData' for a scenario show that return period has been modelled but there is no flood risk for that return period for that location.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.

Defences removed

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height
1	373300	436222	NoData	NoData	NoData	NoData
2	373308	436222	NoData	NoData	NoData	NoData
3	373316	436222	NoData	46.95	46.95	46.98
4	373324	436222	46.79	46.81	46.84	46.95
5	373284	436230	NoData	NoData	NoData	NoData
6	373292	436230	NoData	NoData	NoData	NoData
7	373300	436230	NoData	NoData	NoData	NoData
8	373308	436230	NoData	NoData	NoData	NoData
9	373316	436230	NoData	NoData	NoData	NoData
10	373324	436230	46.89	46.93	46.95	46.98
11	373284	436238	NoData	NoData	NoData	NoData
12	373292	436238	NoData	NoData	NoData	NoData
13	373300	436238	NoData	NoData	NoData	NoData
14	373308	436238	NoData	NoData	NoData	NoData
15	373316	436238	NoData	NoData	NoData	47.23
16	373324	436238	47.01	47.05	47.08	47.11
17	373284	436246	NoData	NoData	NoData	NoData
18	373292	436246	NoData	NoData	NoData	NoData

Label	Easting	Northing	1.33% AEP	1% AEP	0.5% AEP	0.1% AEP
			Height	Height	Height	Height
19	373300	436246	NoData	NoData	NoData	NoData
20	373308	436246	NoData	NoData	NoData	NoData
21	373316	436246	NoData	NoData	NoData	NoData
22	373324	436246	47.09	47.12	47.17	47.25
23	373284	436254	NoData	NoData	NoData	NoData
24	373292	436254	NoData	NoData	NoData	NoData
25	373300	436254	NoData	NoData	NoData	NoData
26	373308	436254	NoData	NoData	NoData	NoData
27	373316	436254	NoData	NoData	NoData	NoData
28	373324	436254	47.18	47.21	47.24	47.30
Max value in selected area:			NoData	NoData	NoData	47.25

Data in this table comes from the Whalley 2017 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.
If no height or depth data is available for a scenario, no table will be shown.
'Max value in selected area' is the deepest depth or highest height at any location within your drawn boundary.


N
Environment Agency
Defences removed climate change modelled fluvial extent and height
Location (easting/northing)
373304/436239
Scale
1:500
Created
27 Aug 2024
Model name
Whalley 2017
Selected area
Main river
Modelled 2D grid
Water level in mAOD
0 - 46.0
46.0 - 46.25
46.25 - 46.5
46.5 - 46.75
46.75 - 47.0
47.0 - 47.25
47.25 - 47.5
47.5 - 47.75
47.75 - 48.0
This map shows the 1.0% AEP +15% height data
0 5 10 15 20
metres
TCB
47.5m
Vale
Gardens
Bus Statio
Shelter
PC
King Street
Church Lane
Street
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28
© Environment Agency copyright and/or database rights 2024. All rights reserved. © Crown copyright and database rights 2024 OS 100024198.

Sample point data

Defences removed climate change

Label	Easting	Northing	1% AEP (+15%)	1% AEP (+15%)
			Depth	Height
1	373300	436222	NoData	NoData
2	373308	436222	NoData	NoData
3	373316	436222	0	46.95
4	373324	436222	0.05	46.83
5	373284	436230	NoData	NoData
6	373292	436230	NoData	NoData
7	373300	436230	NoData	NoData
8	373308	436230	NoData	NoData
9	373316	436230	NoData	NoData
10	373324	436230	0.05	46.95
11	373284	436238	NoData	NoData
12	373292	436238	NoData	NoData
13	373300	436238	NoData	NoData
14	373308	436238	NoData	NoData
15	373316	436238	NoData	NoData
16	373324	436238	0.05	47.07

Label	Easting	Northing	1% AEP (+15%)	1% AEP (+15%)
			Depth	Height
17	373284	436246	NoData	NoData
18	373292	436246	NoData	NoData
19	373300	436246	NoData	NoData
20	373308	436246	NoData	NoData
21	373316	436246	NoData	NoData
22	373324	436246	0.04	47.16
23	373284	436254	NoData	NoData
24	373292	436254	NoData	NoData
25	373300	436254	NoData	NoData
26	373308	436254	NoData	NoData
27	373316	436254	NoData	NoData
28	373324	436254	0.07	47.24
Max value in selected area:			NoData	NoData

Data in this table comes from the Whalley 2017 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.
If no height or depth data is available for a scenario, no table will be shown.
'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 Ribble Valley.

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

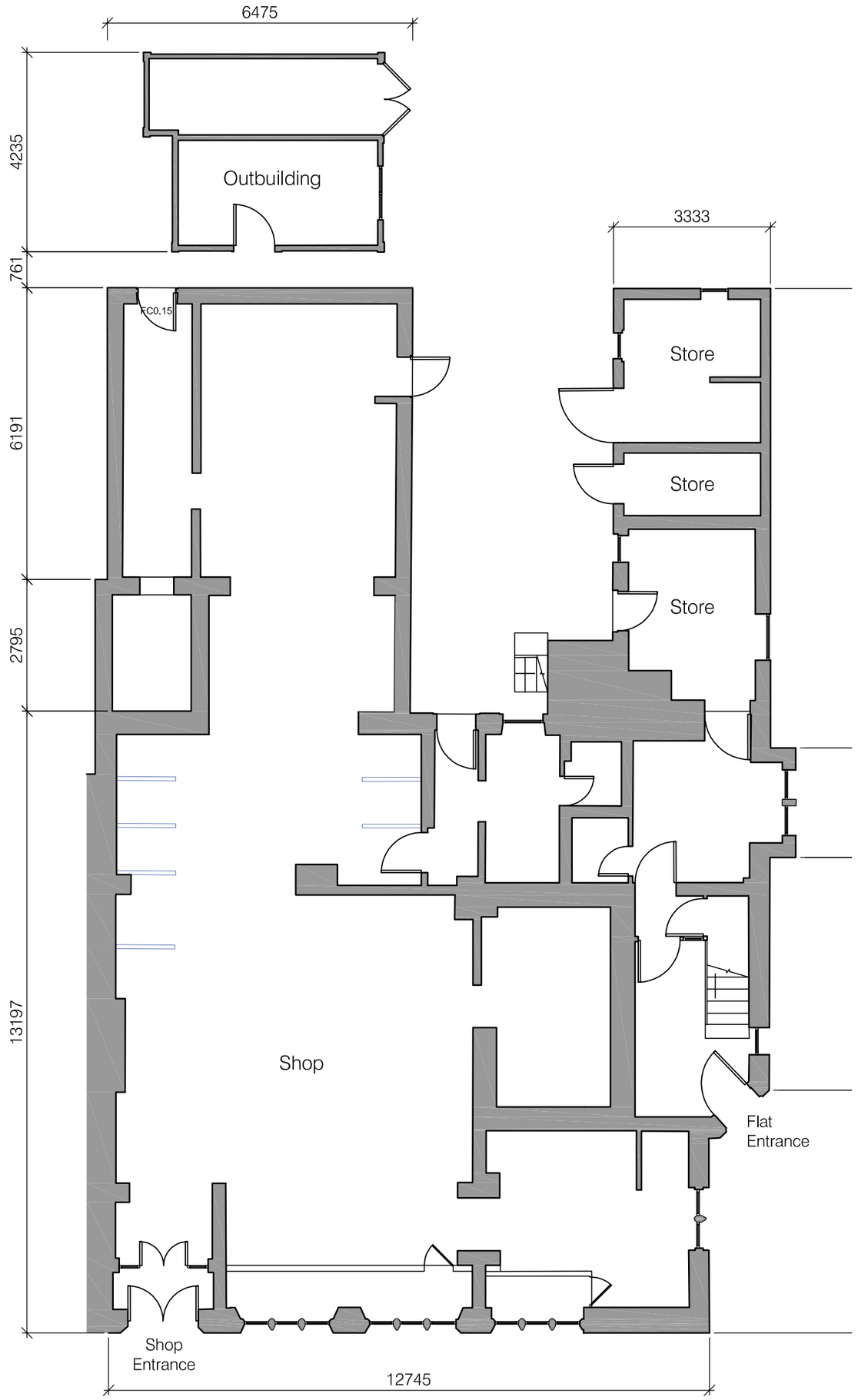
Help and advice

Contact the Cumbria and Lancashire Environment Agency team at inforequests.cmblnc@environment-agency.gov.uk for:

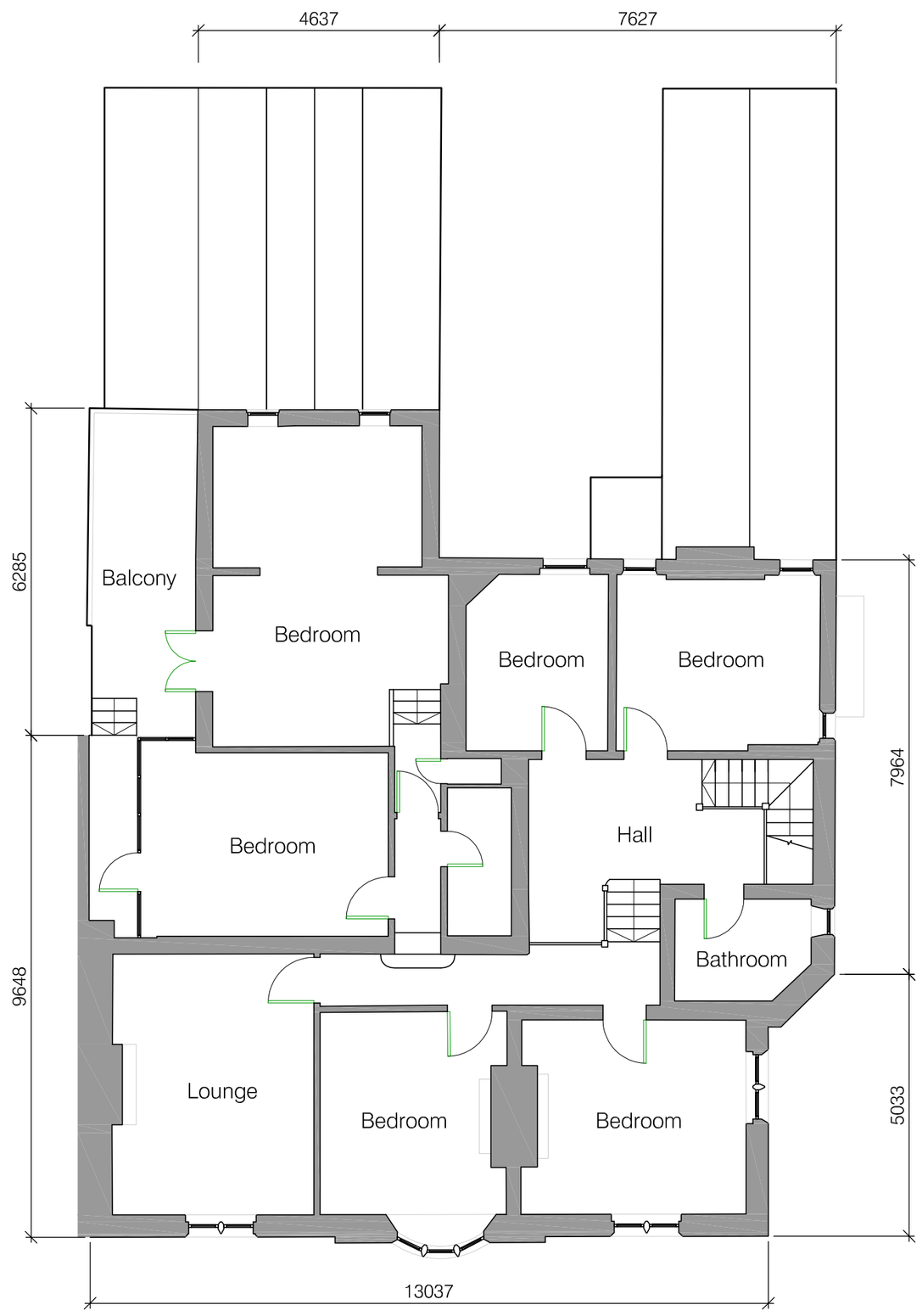
- more information about getting a product 5, 6, 7 or 8
- general help and advice about the site you're requesting data for

Appendix 3

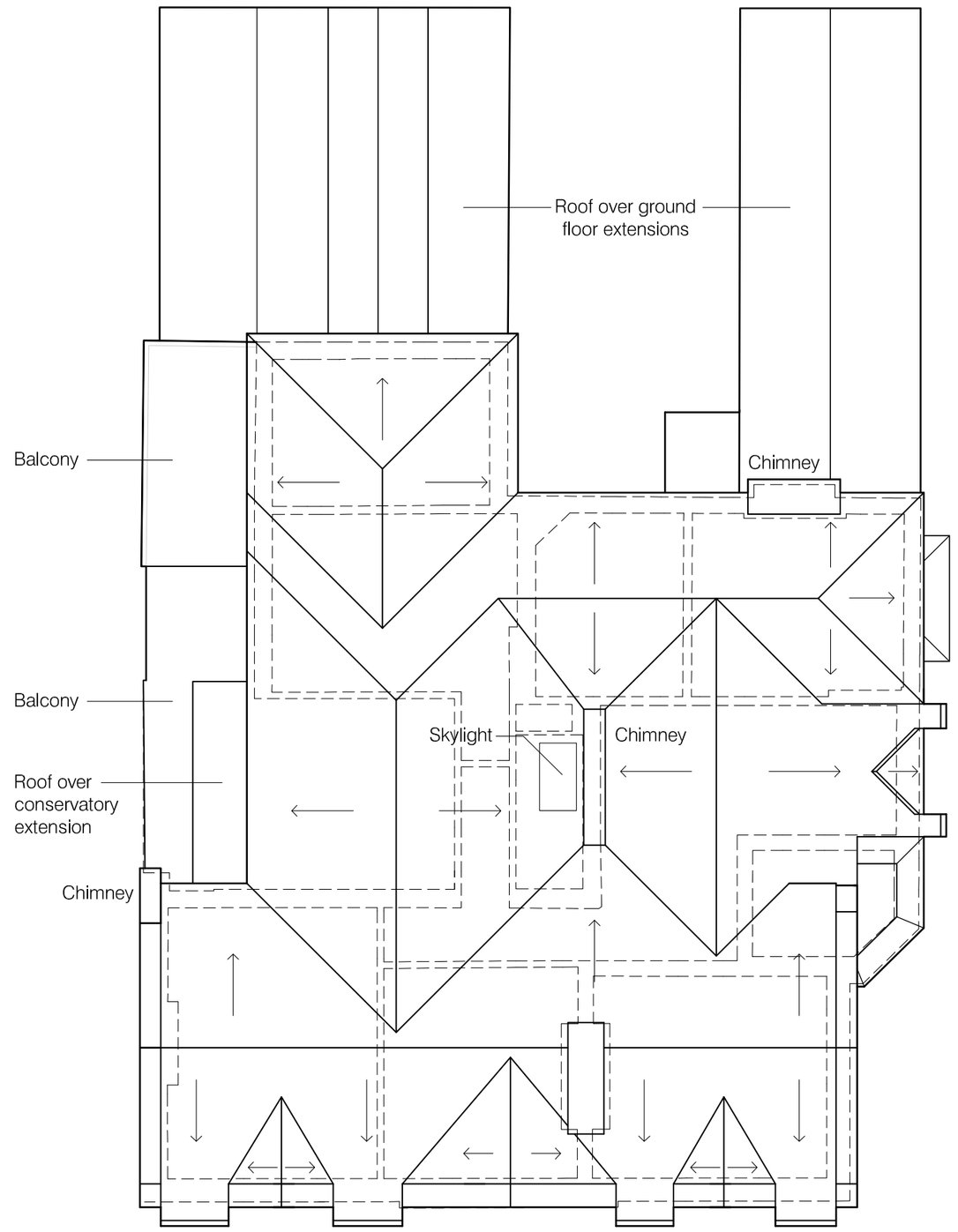
Revision	Date	Revision note	Drawn by	Purpose of issue
-	11.02.24	First issue	LM	Planning



GROUND FLOOR



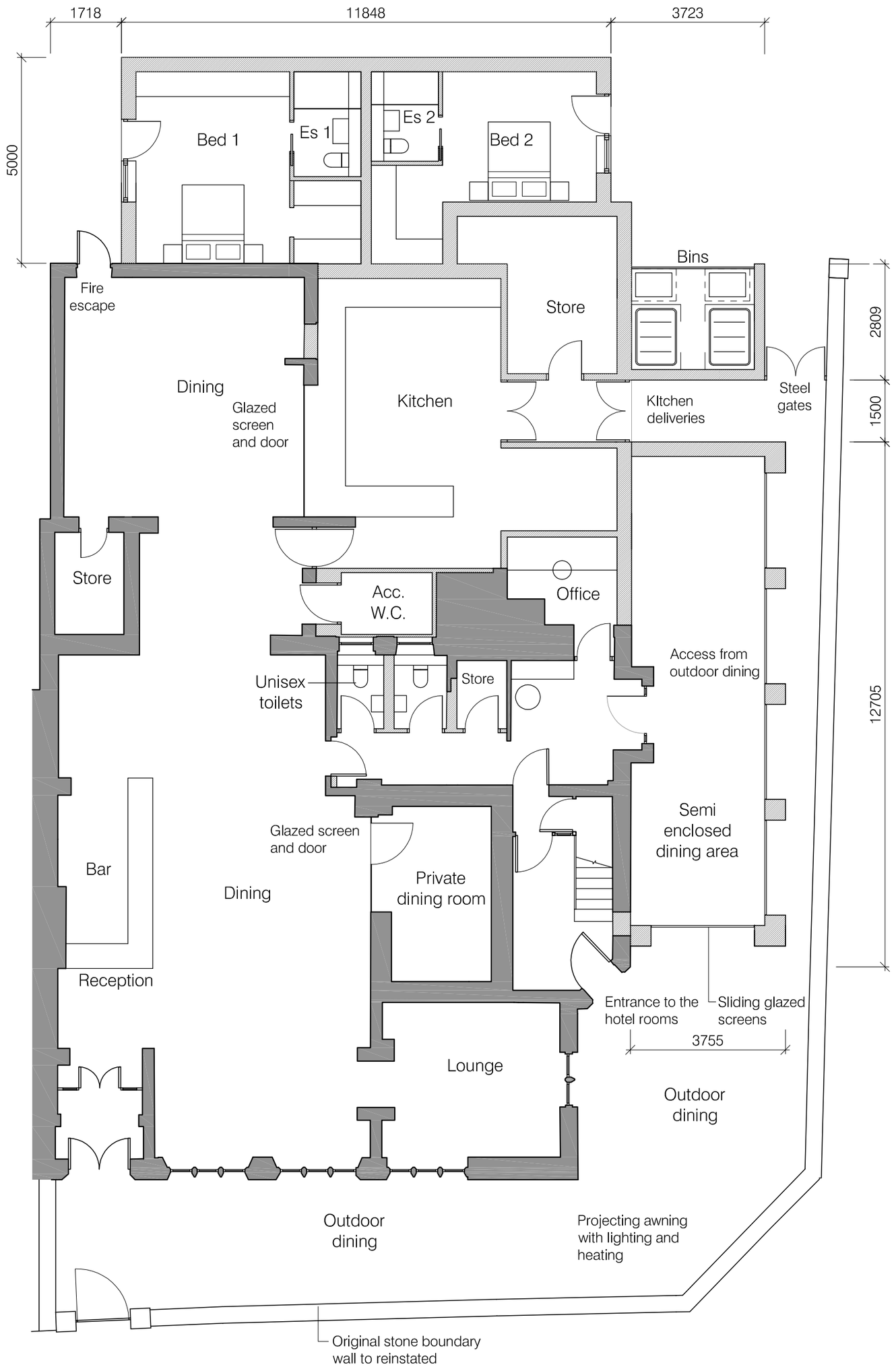
FIRST FLOOR



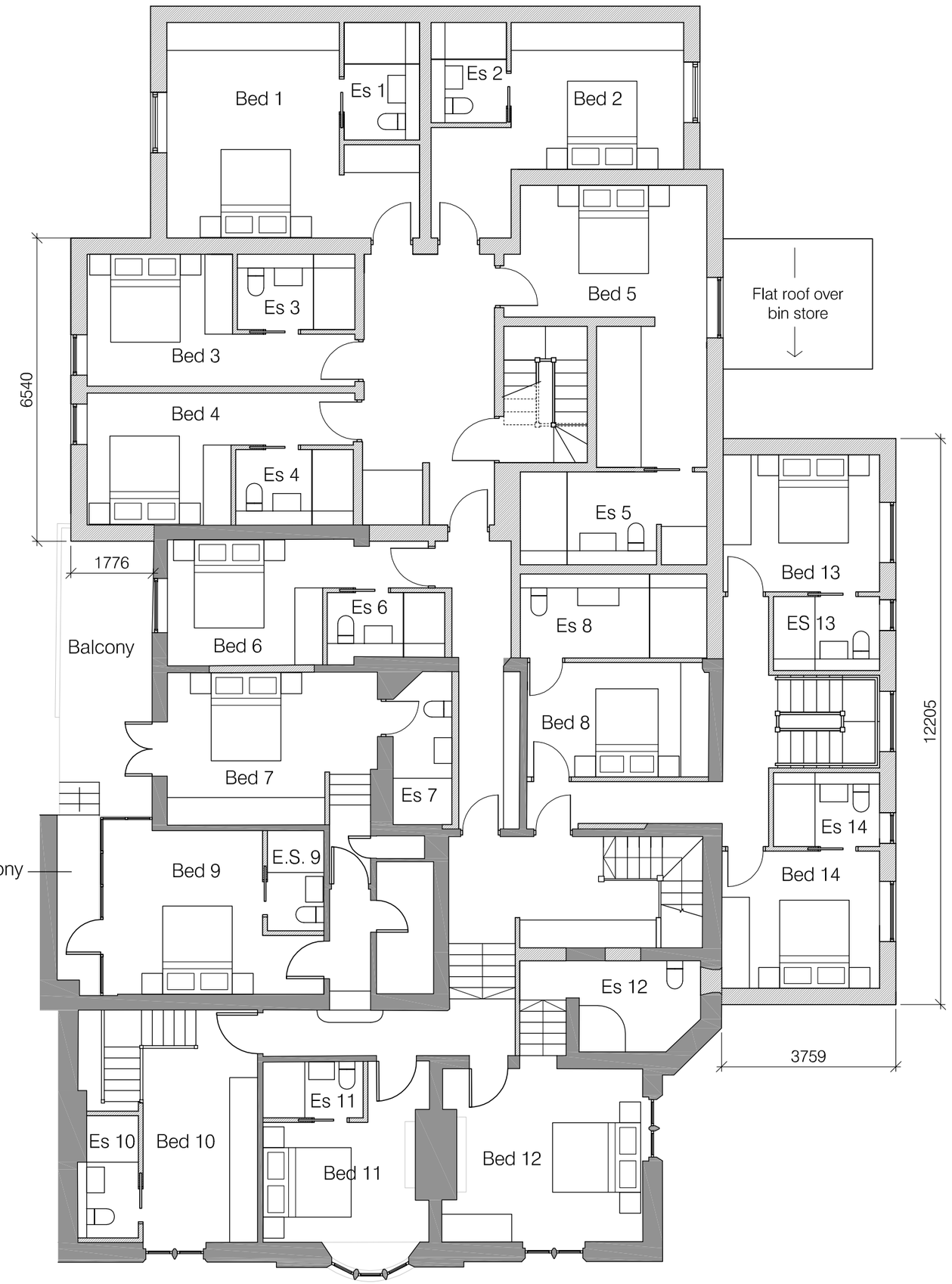
ROOF PLAN

Project: Conversion and extension to 69 King Street, Whalley	Drawing title: Existing Ground and First Floor Plans	Scale: 1:100 @ A2	LMC Architecture Limited Architectural design services 4 Dovedale Drive, Ightenhill, Burnley, Lancashire, BB12 8XD Web : www.lmcarchitecture.co.uk
Client: Ronnan Corporation	Drawing number: 2339–PL02	Date: 11.02.24	

Revision	Date	Revision note	Drawn by	Purpose of issue
A	22.05.24	Terrace changed to bedrooms on rear extension. Side extension re-designed.	LM	Planning



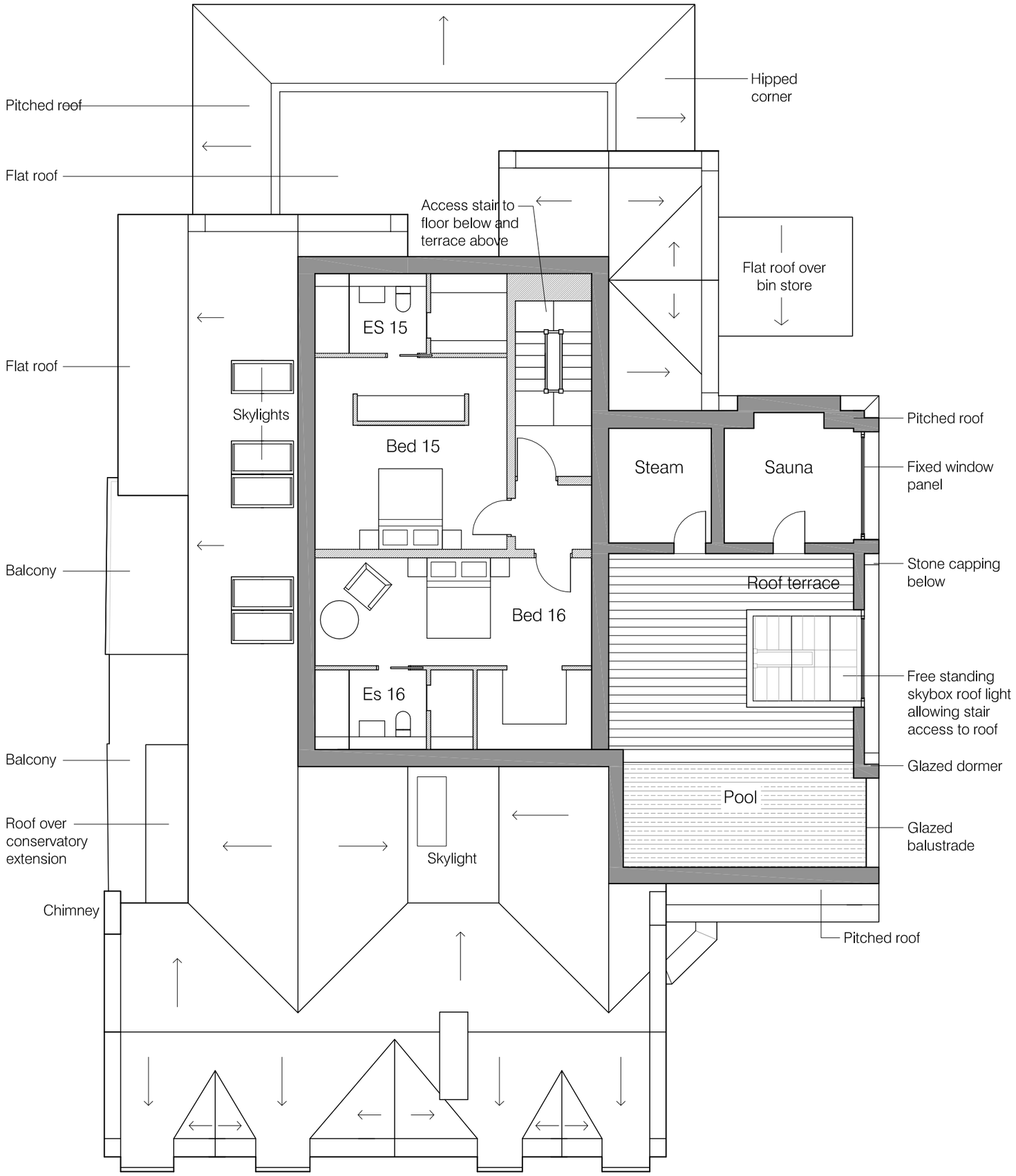
GROUND FLOOR PLAN - PROPOSED



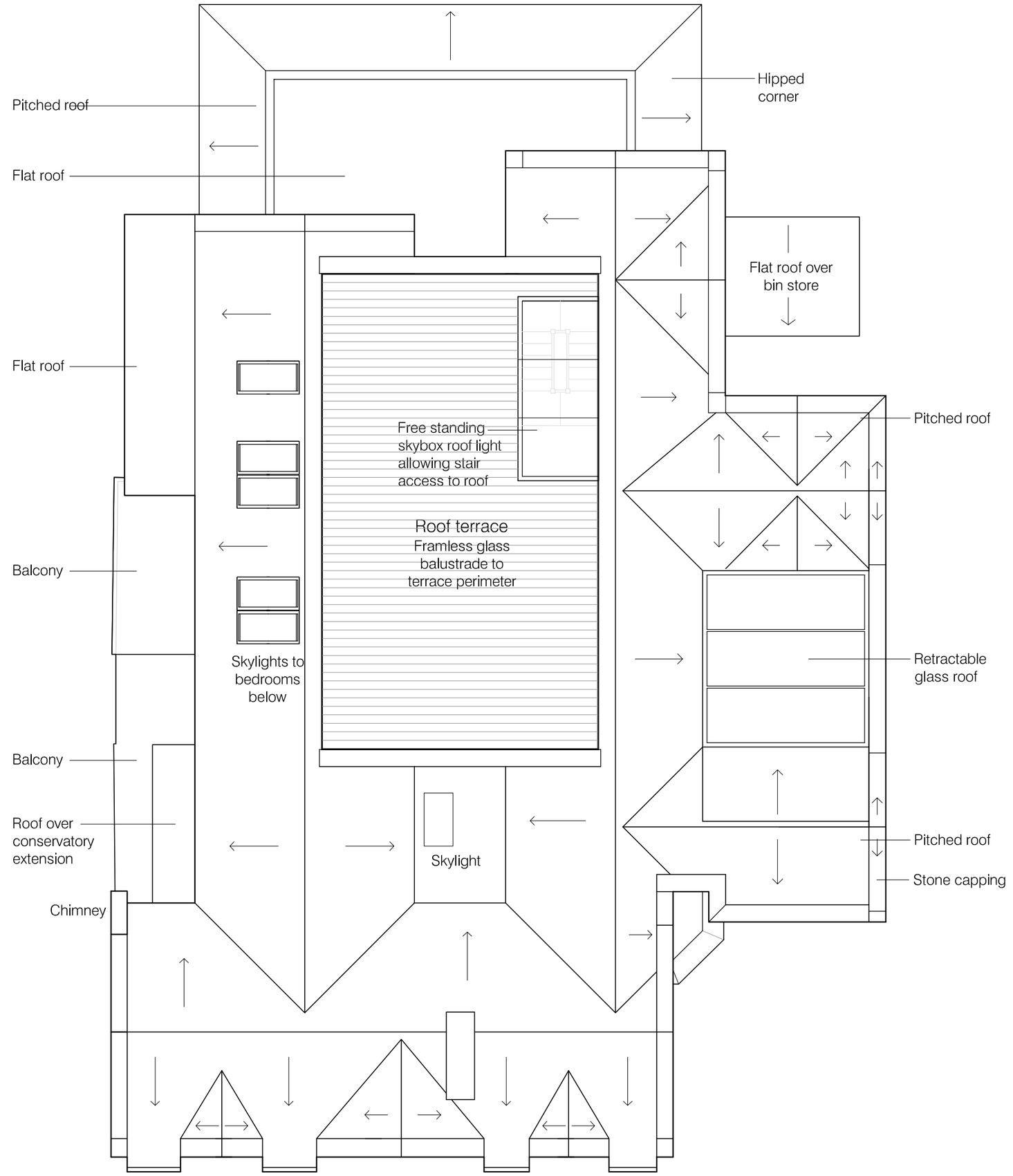
FIRST FLOOR PLAN - PROPOSED

Project: Conversion and extension to 69 King Street, Whalley	Drawing title: Proposed Ground and First Floor Plans	Scale: 1:100 @ A2	LMC Architecture Limited Architectural design services 4 Dovedale Drive, Ightenhill, Burnley, Lancashire, BB12 8XD Web : www.lmcarchitecture.co.uk
Client: Ronnan Corporation	Drawing number: 2339–PL11 A	Date: 11.02.24	

Revision	Date	Revision note	Drawn by	Purpose of issue
-	22.05.24	First issue	LM	Planning



ROOF TERRACE PLAN - PROPOSED



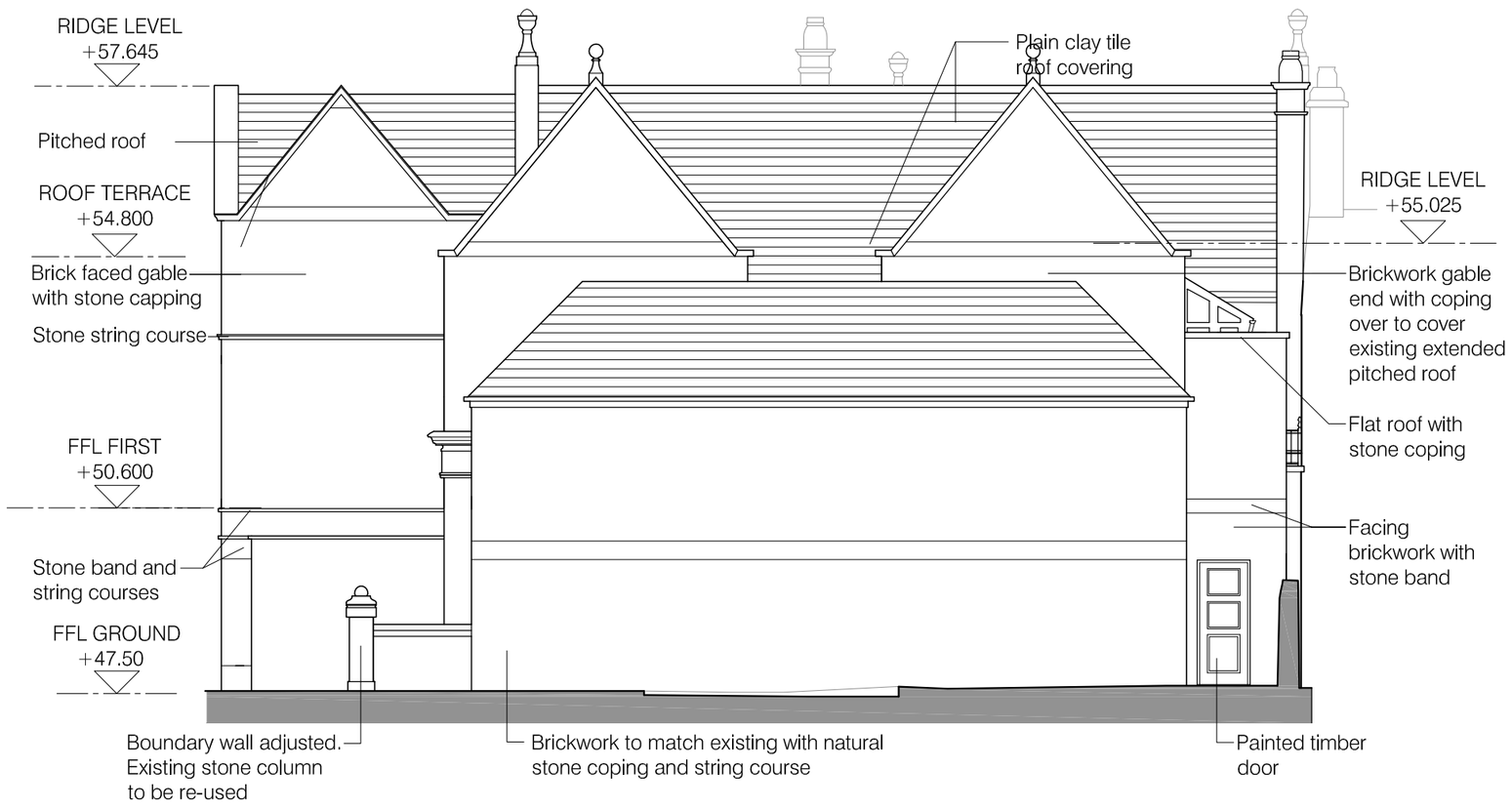
ROOF PLAN - PROPOSED

Project: Conversion and extension to 69 King Street, Whalley	Drawing title: Proposed Terrace and Roof level plans	Scale: 1:100 @ A2	LMC Architecture Limited Architectural design services 4 Dovedale Drive, Ightenhill, Burnley, Lancashire, BB12 8XD Web : www.lmcarchitecture.co.uk
Client: Ronnan Corporation	Drawing number: 2339–PL12	Date: 11.02.24	

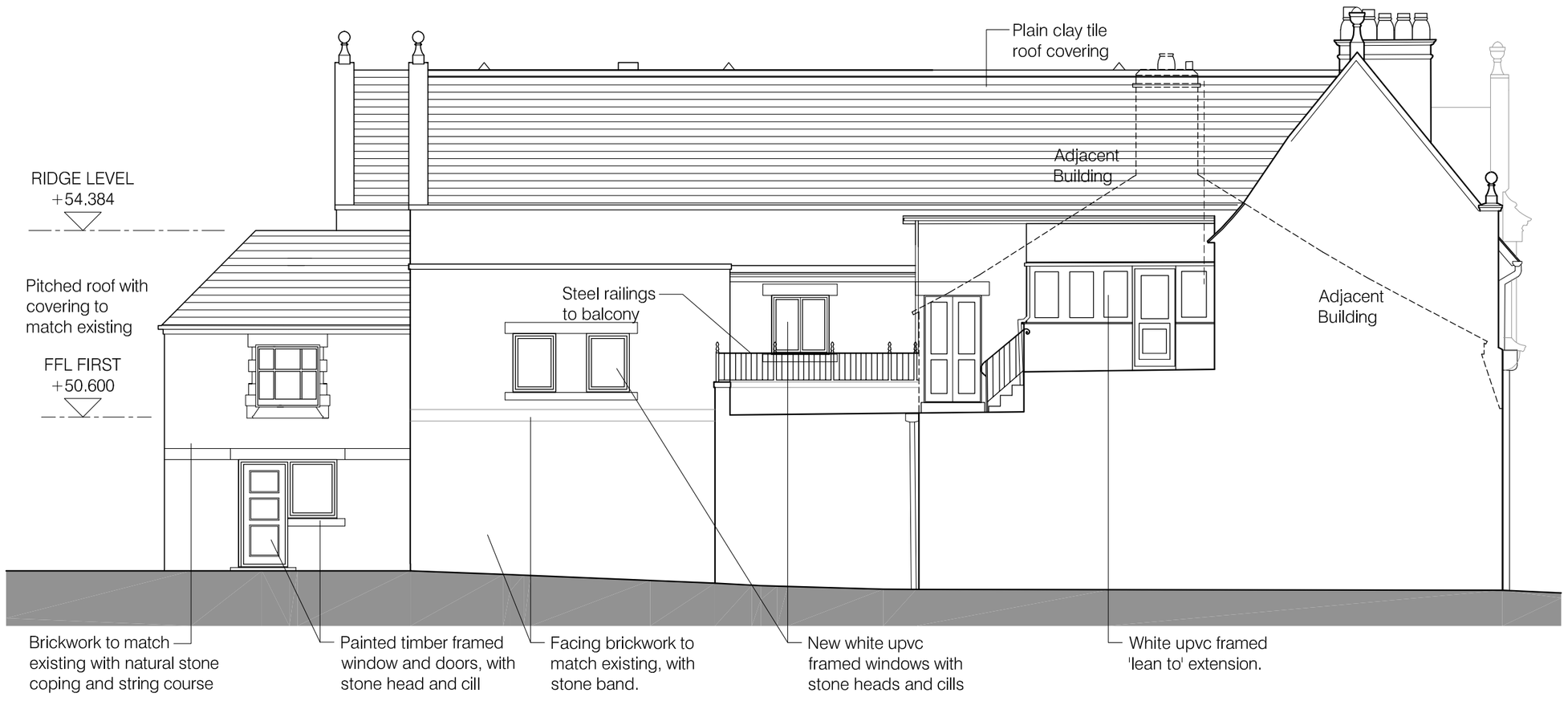
Revision	Date	Revision note	Drawn by	Purpose of issue
C	29.05.24	Updated to include recent comments.	LM	Planning

FRONT ELEVATION

SIDE ELEVATION A



REAR ELEVATION



SIDE ELEVATION B

Project: Conversion and extension to 69 King Street, Whalley	Drawing title: Proposed elevations	Scale: 1:100 @ A2	LMC Architecture Limited Architectural design services 4 Dovedale Drive, Ightenhill, Burnley, Lancashire, BB12 8XD Web : www.lmcarchitecture.co.uk
Client: Ronnan Corporation	Drawing number: 2339–PL10 C	Date: 11.02.24	