



34 Sandford Road, Bromley

# Flood Risk Assessment

Christopher Salt

27 October 2023

## Document Control

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# 1 Introduction

Logika Consultants Ltd were commissioned to undertake a Flood Risk Assessment (FRA) and accompanying Drainage Strategy in relation to a minor extension located at 34 Sandford Road, Bromley, BR2 9AW.

## 1.1 Site Description

The site (hereafter referred to as the 'Site') is approximately 0.17 hectares in size and consists of an existing residential property and garden. The Site is bound to the north by a further residential property, and Sandford Road is located to the east. Streamside Close is present to the south, and a watercourse referred to as the Ravens Bourne is located to the west. Refer to Figure 1-1 below.

**Figure 1-1: Site Location**



LiDAR Data (Appendix A1) shows that the Site gradually falls from approximately 44.2m AOD in the east to 42.7m AOD in the west in the vicinity of the Ravens Bourne.

## 1.2 Development Proposals

The development proposals (Appendix A2, hereafter referred to as the 'Proposed Development') include the conversion and extension of the external annex building on Site to provide a single

bedroom dwelling. The building will remain as single storey and will have private access to a portion of the existing garden.

## 2 Planning Policy and Guidance

### 2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)<sup>1</sup>, last revised in September 2023, states that vulnerable development types should be directed away from areas at highest risk of flooding (whether existing or future risk). Where development is necessary in flood risk areas, the development should be made safe for its lifetime without increasing risk elsewhere.

The NPPF states that, when determining planning applications, Local Planning Authorities should ensure that flood risk is not increased elsewhere as a result of development. Where appropriate, applications should be supported by a site-specific FRA. Development should only be permitted in areas at risk of flooding where it can be demonstrated that:

- Within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;
- The development is appropriately flood resistant and resilient;
- Any residual risk can be safely managed; and
- Safe access and escape routes are included where appropriate, as part of an agreed emergency plan.

### 2.2 Planning Practice Guidance

The Planning Practice Guidance (PPG)<sup>2</sup> notes provide additional advice to Local Planning Authorities, to ensure that the NPPF is applied correctly when assessing development in areas at risk of flooding. Assessments of flood risk should identify sources of current and future risk and describe how these will be accounted for in a mitigation strategy.

A sequential approach should be employed, which involves applying the 'Sequential Test' and, if needed, the 'Exception Test'. This is designed to ensure that areas at little or no risk of flooding are developed in preference to higher risk areas.

For site-specific risk assessments, the characteristics of a possible flood event should be considered. The ability of residents and users to safely access and exit a building during a 'design' flood event and to evacuate before an extreme flood event (0.1% annual probability of flooding with allowance for climate change) should also be assessed.

The 'design' flood event is considered to be fluvial flooding likely to occur with a 1% annual probability (a 1 in 100 chance each year), or tidal flooding with a 0.5% annual probability (1 in 200 chance each year). In addition, the 1% annual probability pluvial event should also be considered.

Development layouts should be designed to locate the most vulnerable aspects of a development within areas of lowest flood risk, unless there are overriding reasons present. In addition, measures

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<sup>1</sup> [Ministry of Housing, Communities and Local Government, July 2021. National Planning Policy Framework.](#)

<sup>2</sup> [Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities and Local Government, August 2022, planning Practice and Guidance: Flood Risk and Coastal Change.](#)

to avoid flood risk vertically can be taken by locating the most vulnerable uses on upper levels within a building, and by raising finished floor and/or ground levels where appropriate. Such measures should also account for any residual flood risks occurring due to flood risk management infrastructure.

Management measures, such as safe access and egress routes, should be provided to deal with any residual risk remaining after avoidance, control and mitigation measures have been utilised. The provision of adequate flood warning should also be considered.

Residential development can be assumed to have a lifetime of at least 100 years, unless specific justification exists for considering a different time period. The lifetime of a non-residential development depends on the characteristics of that development, but a period of at least 75 years is considered to form a starting point for assessment.

The PPG provides guidance on flood risk vulnerability and flood zone compatibility. The following flood zones refer to the probability of river and sea flooding, without the presence of defences:

- **Zone 1: low probability**, less than 0.1% annual probability of river or sea flooding (<1 in 1000) in any year;
- **Zone 2: medium probability**, between a 1% and 0.1% annual probability of river flooding (1 in 100 to 1 in 1000) or between a 0.5% and 0.1% (1 in 200 to 1 in 1000) annual probability of sea flooding in any year;
- **Zone 3a: high probability**, 1% or greater (>1 in 100) annual probability of river flooding or a 0.5% or greater (>1 in 200) annual probability flooding from the sea in any year; and
- **Zone 3b: functional floodplain**, where water flows or is stored in times of flood, identification should take account of local circumstances but will typically flood with an annual probability of 3.3% (>1 in 30) or greater in any year or is designed to flood in an extreme 0.1% (1 in 1000 annual probability) flood.

Climate change allowances for river flow and rainfall intensity are determined in accordance with the local river management catchment. Allowances are provided to cover development lifespans to the 2050s epoch (from present day to the year 2060) and the 2070s epoch (between 2061 and 2125).

Table 2 of the PPG splits flood risk vulnerability into five classifications. The compatibility of these development uses within each Flood Zone is set out in Annex 3 of the NPPF:

- **Essential Infrastructure:** essential transport and utility infrastructure, wind turbines;
- **Highly Vulnerable:** emergency services (those required to be operational during flooding), installations requiring hazardous substances consent, basement dwellings;
- **More Vulnerable:** residential dwellings, hospitals, schools, hotels, drinking establishments;
- **Less Vulnerable:** retail, offices, storage and distribution, leisure, restaurants; and
- **Water-Compatible Development:** docks, marinas, wharves, boat clubs.

## 2.3 Flood Risk Assessment – Standing Advice

In considering the scope of an FRA, the PPG makes reference to Standing Advice<sup>3</sup> which highlights when an assessment is needed and where it is appropriate to follow the Environment Agency (EA) standing advice.

On the basis that the Proposed Development is considered to be a minor household extension but is within Flood Zones 2 and 3, there is a requirement to prepare an FRA in line with the standing advice for Minor Extensions<sup>4</sup>.

For clarity, the standing advice for vulnerable developments has also been considered when undertaking this assessment.

## 2.4 Sequential and Exception Test

On the basis that the Proposed Development is considered to be a minor development, there is no requirement to undertake a sequential or exception test.

## 2.5 Bromley Local Plan

The Bromley Local Plan<sup>5</sup> was adopted in January 2019 and sets out the Council's policies for development in the region. Policies 115 and 116 relating to Reducing Flood Risk and Sustainable Drainage Systems have been considered in preparing this report.

## 2.6 London Borough of Bromley Strategic Flood Risk Assessment

The Strategic Flood Risk Assessment for Bromley<sup>6</sup> (SFRA) was published in August 2017 and provides a holistic overview of flood risk throughout the borough. The report provides a holistic assessment of flooding from all sources and sets out management and mitigation measures with regard to flood risk. The report also provides guidance to developers for the preparation of site-specific FRA's. Whilst related policy documents such as the NPPF and PPG are reiterated within this document, there are no further specific policies mentioned which are intrinsic to the SFRA.

Consideration and reference however has been made to the SFRA where appropriate within this report.

## 2.7 London Borough of Bromley Local Flood Risk Management Strategy

The Local Flood Risk Management Strategy for Bromley<sup>7</sup> (LFRMS) was published in August 2015 and provides an overview of flood risk management for the borough. This includes an assessment of the sources of flooding, historic flooding in the borough, the roles and responsibilities of various

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<sup>3</sup> [Department for Environment, Food & Rural Affairs and Environment Agency. Flood risk assessment if you're applying for planning permission.](#)

<sup>4</sup> [Department for Environment, Food & Rural Affairs and Environment Agency. Preparing a flood risk assessment: standing advice.](#)

<sup>5</sup> [London Borough of Bromley, January 2019. The Bromley local Plan, London Borough of Bromley.](#)

<sup>6</sup> [The London Borough of Bromley, August 2017. The London Borough of Bromley Strategic Flood Risk Assessment.](#)

<sup>7</sup> [London Borough of Bromley, August 2015. London Borough of Bromley, Local Flood Risk Management Strategy.](#)



individuals/management bodies, and the actions required to mitigate and future proof against flooding.

While there is no specific policy stated within this document, consideration and reference has been made to the LFRMS where appropriate within this report.

## **2.8 Guidance for SuDS in Bromley**

The Guidance for SuDS<sup>8</sup> design for Bromley provides a holistic overview of SuDS features and their appropriate incorporation into developments. While there are no specific requirements or policies stated within this document, the SuDS guidance has been used to integrate appropriate SuDS features into the Proposed Development. The SuDS guidance has been referred to where appropriate within this report.

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<sup>8</sup> [London Borough of Bromley. Guidance for SuDS in Bromley.](#)

### 3 Sources of Potential Flooding

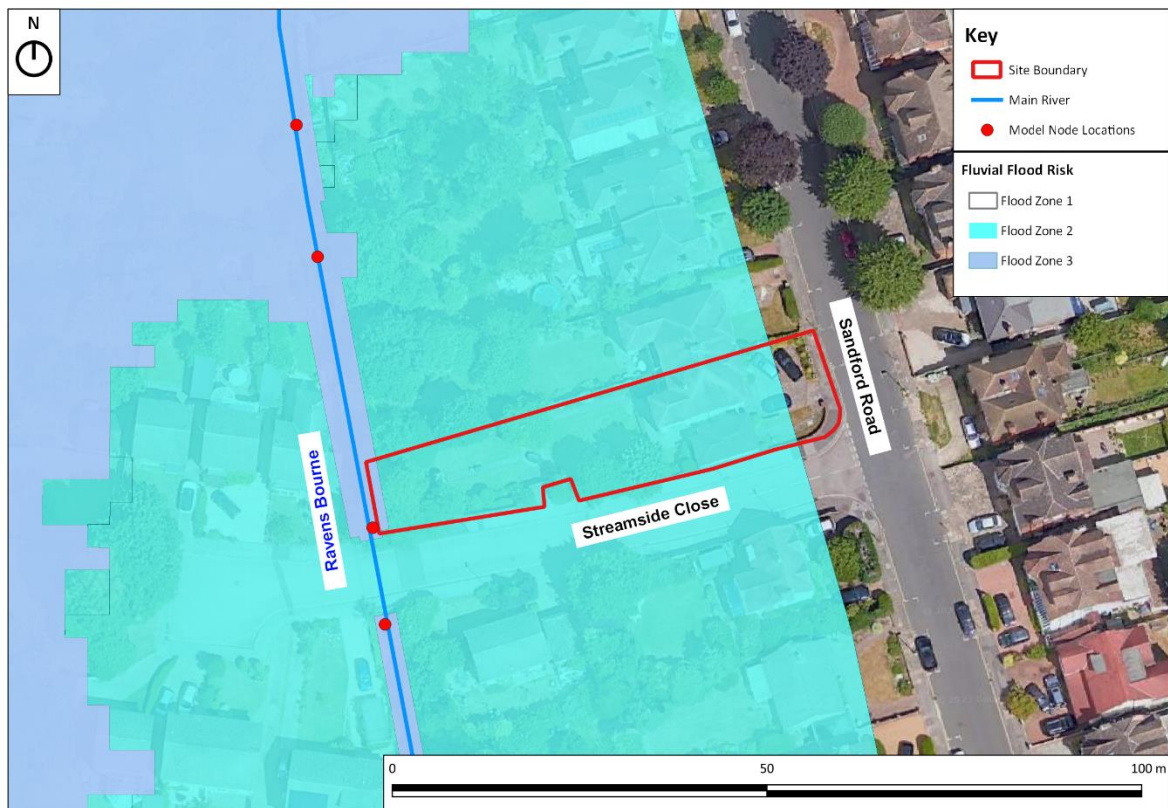
#### 3.1 Fluvial and Tidal

The Ravens Bourne is classified as a main river by the EA and is located on the western boundary of the Site. The Ravens Bourne is considered to be a fluvially influenced watercourse, beyond the reach of any tidal impacts.

The EA’s Flood Map for Planning (Figure 3-1) shows that the Site predominantly lies within Flood Zone 2, indicating a medium probability of flooding from the Ravens Bourne. There is a small area in the far west which is shown to be within Flood Zone 3 (indicating a high probability of fluvial flooding), however due to the linear nature of the flood extent, this is anticipated to reflect the river channel itself rather than the Site.

Assessment of historic flood mapping provided by the EA and within the SFRA (Appendix A3), shows that the extent of Flood Zone 2 aligns with flooding that occurred in 1965 and 1968. It is therefore anticipated that the Site is designated as being within Flood Zone 2 due to historic flooding rather than modelled data. The SFRA states that following these flood events alterations were made to the wider Ravens Bourne, and it is assumed that this has prevented future flooding in this area.

**Figure 3-1: Environment Agency’s Flood Map for Planning**

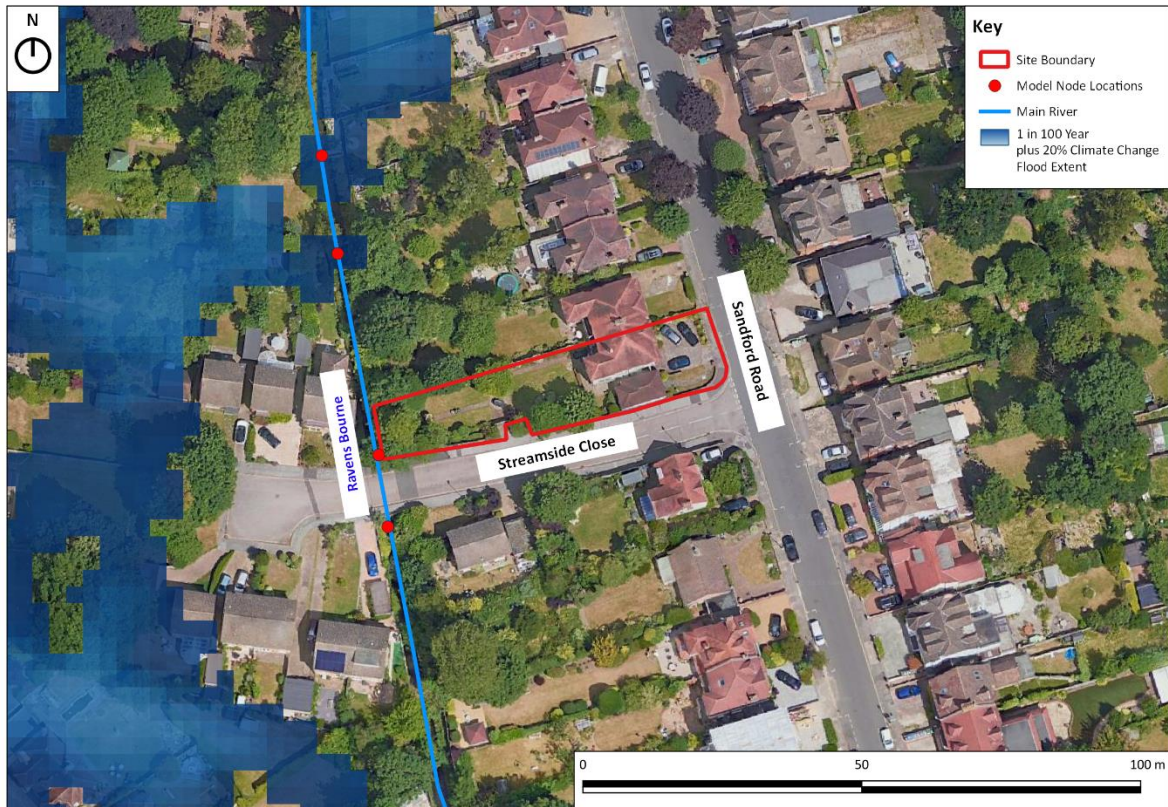


Google Maps (2023). 34 Sandford Road, Bromley. Available at: <https://maps.app.goo.g/82GJKnp75ah86ys7> (Accessed 17th October 2023)

The EA’s fluvial modelled data for the Ravens Bourne has been obtained, which provides flood levels and extents for a number of scenarios. According to the EA’s climate change guidance, the design flood event for the Site is the 1 in 100 year plus 17% climate change scenario.

The modelled data provided by the EA does not include results for 17% climate change, however does include results for the 1 in 100 year plus 20% climate change scenario. To be conservative, 20% climate change has been used to assess the impacts to the Site. Figure 3-2 below shows the flood extent in this scenario, and indicates that the Site is not impacted.

**Figure 3-2: 1 in 100 Year plus 20% Climate Change Flood Extent**



To be conservative, a comparison of the in channel flood levels in the 1 in 100 year plus 20% climate change event (at the node closest to the Site as shown in Figure 3-2) and the Site levels (based on LiDAR data) has been undertaken.

This assessment indicates that the in channel flood levels are 43.56m AOD and LiDAR indicates that existing Site levels (in the vicinity of the proposed extension) are approximately 43.90m AOD. On the basis that the finished floor level (FFL) of the proposed extension will be set at approximately 44.12m AOD (to tie in to the existing FFLs, set 220mm above ground levels), a freeboard of 0.56m will be provided above the 1 in 100 year plus 20% climate change flood levels. The freeboard provided is summarised in Table 3-1.

**Table 3-1: Flood Risk**

1 in 100 year plus 20% Climate Change Flood Level (m AOD)	Site Level		Building Finished Floor Level	
	Level (m AOD)	Freeboard (m)	Level (m AOD)	Freeboard (m)
<b>43.56</b>	43.90	0.34	44.12	0.56

On the basis that the location of the proposed extension is not be impacted by flooding in the 1 in 100 year plus 20% climate change event, it is considered appropriate to tie into existing FFLs, occupants will remain safe, there will be no increase in flood risk elsewhere, and the Proposed Development is considered appropriate.

### 3.2 Pluvial

#### 3.2.1 Overland Pluvial Flooding

The EA’s Risk of Flooding from Surface Water Map (Figure 3-3) shows that the majority of the Site is at a low risk of flooding from surface water (1 in 100 to 1 in 1000 annual probability). There are however areas of medium and high risk associated with the Ravens Bourne Channel to the west and Sandford Road to the east.

**Figure 3-3: Environment Agency’s Risk of Flooding from Surface Water Map**



Google Maps (2023). 34 Sandford Road, Bromley. Available at: <https://maps.app.goo.gl/zeacgfbCsp78LviA6> (Accessed 17th October 2023)

In the low risk scenario flood depths are expected to be below 0.3m. For the purposes of planning however, the medium risk scenario (i.e. up to the 1 in 100 year probability) is ordinarily used to determine any surface water flood mitigation that could be required.

For clarity, Figure 3-4 provides a summary of the flood depths in the medium risk scenario and indicates that there will be no flooding to the Proposed Development in this scenario. Furthermore, finished floor levels will be raised above the surrounding ground levels reducing the potential for overland flows to enter the Proposed Development.

The risk of flooding from overland flows is therefore considered to be low.

**Figure 3-4: Medium Risk Scenario (1 in 30 - 1 in 100 year Annual Probability of Flooding)**



Google Maps (2023). 34 Sandford Road, Bromley. Available at: <https://maps.app.goo.gl/gN1GqYCeIzF9EjaN7> [Accessed 17th October 2023]

### 3.2.2 Sewer Flooding

Map 004b of the SFRA (Appendix A3) indicates that the Site is in a location where 6 to 13 incidents of sewer flooding have been recorded. This however is based on postcode designations and does not necessarily provide an accurate assessment of risk at the Site itself.

According to Thames Water’s historic flooding records (Appendix A4), there have been no recorded incidents of flooding at the Site as a result of surcharging public sewers.

The risk of flooding from surcharging sewers is therefore considered to be low.

### 3.3 Groundwater

Groundwater flooding occurs when water emerges from the ground due to a high water table, normally following heavy rainfall and is generally associated with porous sub-surface geology.

British Geological Survey<sup>9</sup> mapping shows that the Site is underlain by superficial deposits of the Kempton Park Gravel Member, consisting of sands and gravels. The Site is also underlain by bedrock geology of Harwich Formation, consisting of sands and gravels.

According to Map 007 of the SFRA (Appendix A3), the Site lies within an area with potential for groundwater flooding of property situated below ground, however Map 004a indicates that there have been no recorded groundwater flood events at the Site.

Although the underlying geology at the Site is considered to be permeable and groundwater levels at the Site are likely to be in hydraulic connectivity to the Ravens Bourne, there are no below ground proposals at the Site meaning that there will be no impact to groundwater flows which could otherwise increase flood risk elsewhere.

The risk of groundwater flooding to the Site is therefore considered to be low, and the Proposed Development will not increase groundwater flooding elsewhere.

### 3.4 Artificial Sources

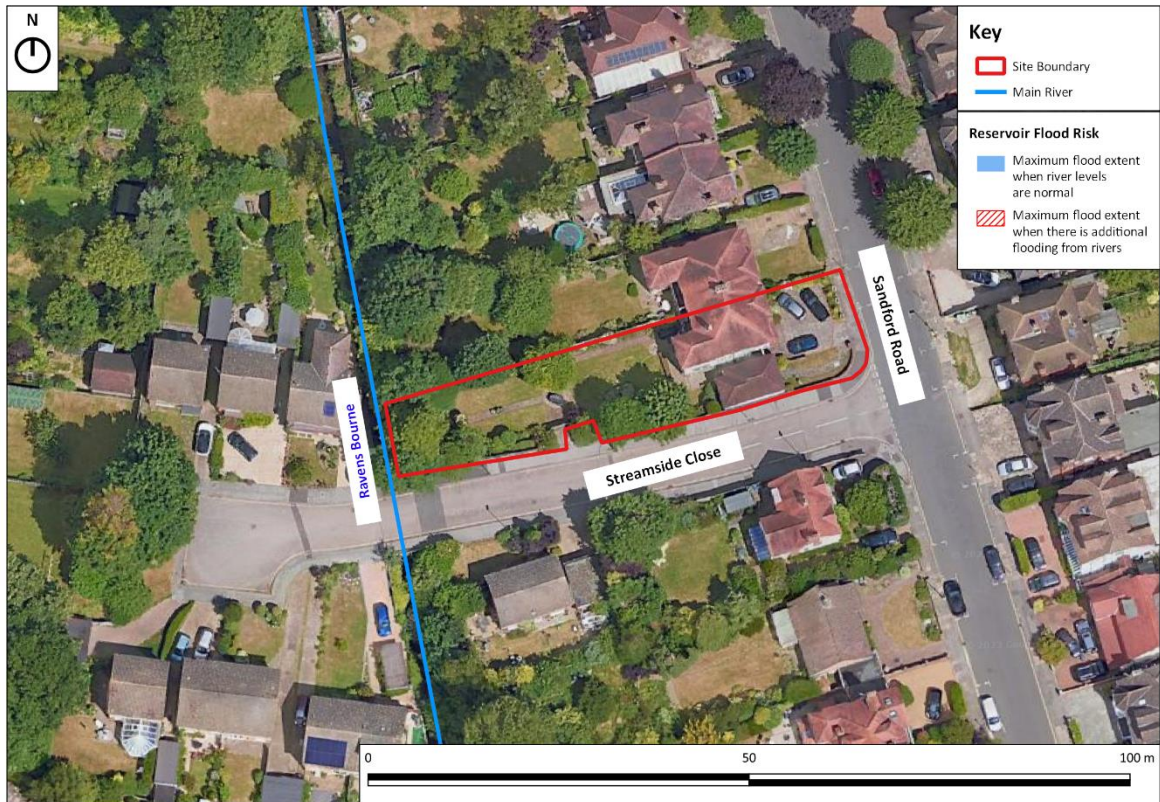
The EA's Risk of Flooding from Reservoir Map (Figure 3-5) shows that the Site will not be impacted by flooding should there be a failure of any nearby reservoirs.

In addition, there are no significant artificial waterbodies in the vicinity that are likely to impact the Site. The risk of flooding from artificial sources is therefore considered to be low.

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<sup>9</sup> [British Geological Survey](#)

Figure 3-5: Environment Agency's Risk of Flooding from Reservoirs Map



Google Maps (2023), 34 Sandford Road, Bromley. Available at: <https://maps.app.goo.gl/YaTfjAWu6D5g6FLWA> (Accessed 17th October 2023)

## 4 Surface Water Drainage Strategy

### 4.1 Existing Drainage Regime

Thames Water asset records (Appendix A4) indicate that there is a surface water sewer beneath Sandford Road to the east and a surface water sewer beneath Streamside Close to the south which subsequently discharges to the Ravens Bourne.

The current method of draining rainfall from the Site itself is not yet confirmed, however it is anticipated that surface water either drains to the surrounding public sewers or via a private soakaway. Further Site investigation will be undertaken post planning to confirm the current drainage regime and to inform the detailed design.

### 4.2 Proposed Surface Water Drainage Regime

As set out previously, the proposed extension is considered to be a minor development and the proposed increase in impermeable area is only 37m<sup>2</sup>. This increase is considered to be extremely minor and will not have a significant impact with regards to runoff rates. In line with the nature of development, a qualitative approach has therefore been adopted in order to manage runoff from the extension.

With regards to the ultimate discharge location of surface water runoff from the Site, there are currently two potential options as set out below.

- Discharge to Ground – The underlying geology of sands and gravels have the potential to be permeable and may facilitate the use of soakaways. Should there not be any existing connections to the surrounding public sewers, and if testing indicates that infiltration is feasible, in line with the drainage hierarchy a soakaway will be provided to the rear of the property. This will be suitably offset from the building by a minimum of 5m.
- Discharge to Existing Public Sewers - As set out previously, surface water runoff from the existing Site may already discharge to the surrounding public surface water sewers. Should the Site investigation confirm this is the case then it is proposed that the existing connections will be utilised where feasible. Should this not be feasible, then a new connection to the south will be provided.

The most sustainable way to drain surface water runoff is through the use of SuDS, which need to be considered in relation to Site-specific constraints. SuDS can reduce water usage, improve water quality, alongside providing biodiversity and amenity benefits. To provide these benefits at the Site, it is proposed that the following SuDS will be incorporated wherever feasible:

- Rainwater Harvesting in the form of rainwater butts to be utilised for irrigation of the external planting.
- A Rain Garden to be provided within the rear garden of the property which will accommodate an overflow from the proposed rainwater butt(s).
- Where new external landscaping is proposed, these will be formed using permeable surfacing.



### 4.3 Maintenance Regime

The PPG and CIRIA SuDS Manual sets out the requirement to consider the operation, management, and maintenance of all SuDS for the lifetime of the development. Table 4-1 outlines what maintenance is anticipated for the proposed SuDS features.

**Table 4-1: Indicative SuDS Maintenance Schedule**

SuDS and Task	Frequency
<b>Permeable Surfacing</b>	
Brushing	Annually or as required.
Stabilise contributing adjacent areas.	
Removal of weeds	
Remediation to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace any lost jointing material	As required.
Inspection of main structure, pipework and filtration devices and remove any sediments.	Quarterly or as required.
Jetting of main structure to remove any sediment build-up	
Monitoring inspection chambers	Annually or as required.
Inspection for weed growth and silt accumulation	
<b>Rain Gardens</b>	
Inspection of infiltration surfaces for silting and ponding, assess water levels in underdrain (Where appropriate) to determine if maintenance is necessary	
Inspect inlets and outlets for blockages	Quarterly or bi-annually
Assess plants for disease, infection, poor growth, invasive species etc. and replace as necessary	
Removal of sediment, litter, weeds and surface debris build up from around the inlets or from forebays	

Check operation of underdrains by inspection of flows after rain

- Replace any plants, to maintain planting density
- Infill any holes or scour in the filter medium, improve erosion protection if required
- Repair minor accumulation of silt by raking away surface mulch, scarifying surface medium and replacing mulch As required
- Remove and replace filter medium and vegetation above

**Rainwater Harvesting**

Inspection of the tank/butt for debris and sediment build-up. Including inlet/outlet/overflow areas.  
 Pumps and filters if necessary Annually or following poor performance

Cleaning of the above features of the rainwater harvesting system

Cleaning of any filters/replacement if required Quarterly

Repair of overflow or damage to the tanks As required

Repair of pumps if installed

The SuDS incorporated will be privately managed and maintained for the lifetime of the development. The proposed SuDS will provide appropriate treatment of runoff prior to discharge, in line with the requirements of CIRIA guidance.

## 5 Conclusion

The EA's Flood Map for Planning shows that the Site predominantly lies within Flood Zone 2, indicating a medium probability of fluvial flooding from the Ravens Bourne. There is a small area in the west which is shown to be within Flood Zone 3 indicating a high probability of flooding, however it is assumed that this relates to the river channel itself rather than the Site.

Assessment of historic flood mapping indicates that the extent of Flood Zone 2 aligns with flooding that occurred in 1965 and 1968. It is therefore anticipated that the Site is designated as being within Flood Zone 2 due to historic flooding rather than modelled data. The SFRA states that following these flood events alterations were made to the wider Ravens Bourne, and it is assumed that this has prevented future flooding in this area.

On the basis that the location of the proposed extension will not be impacted by flooding in the 1 in 100 year plus 20% climate change event, it is considered appropriate to tie into existing FFLs, occupants will remain safe, there will be no increase in flood risk elsewhere, and the Proposed Development is considered appropriate.

The EA's Risk of Flooding from Surface Water Mapping shows that the majority of the Site is at a low risk of flooding from surface water (1 in 100 to 1 in 1000 year event). The medium risk scenario (up to the 1 in 100 year event) is generally considered for the purposes of planning, to confirm whether any mitigation is likely to be required. In the medium risk scenario, the Site should not experience any flooding. The proposed FFLs will be raised nominally above external ground levels, and the risk of flooding from overland flows is therefore considered to be low.

The risk of flooding from tidal, sewers, groundwater, and artificial sources has also been assessed and considered to be low.

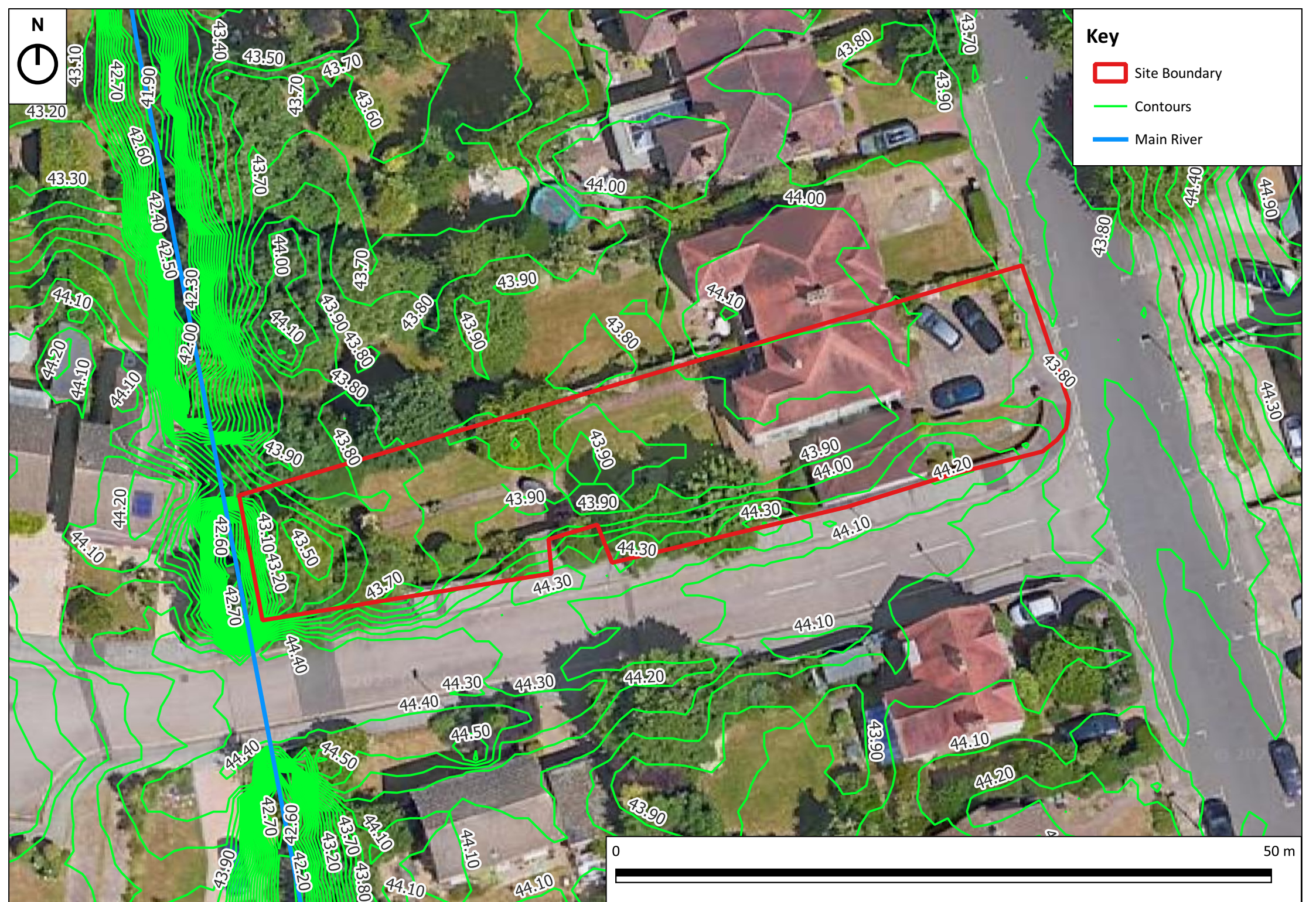
With regards to surface water drainage, it is proposed that runoff will either discharge to ground via infiltration or to the existing public sewers. SuDS will be incorporated in the form of rainwater harvesting, a rain garden and permeable surfacing where appropriate. This will appropriately manage runoff and provide benefits in terms of source control, water quantity, quality, amenity, and biodiversity.

Post construction, the owner of the property will be responsible for the maintenance of the SuDS included within the scheme, ensuring they remain fit for purpose and function appropriately.

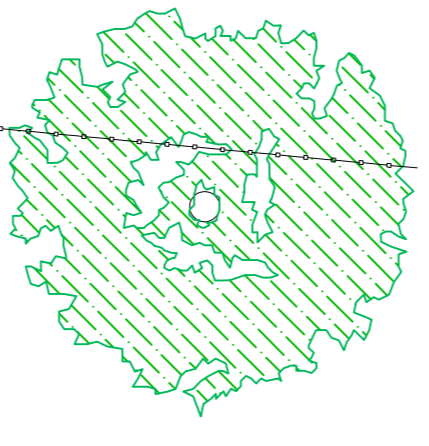
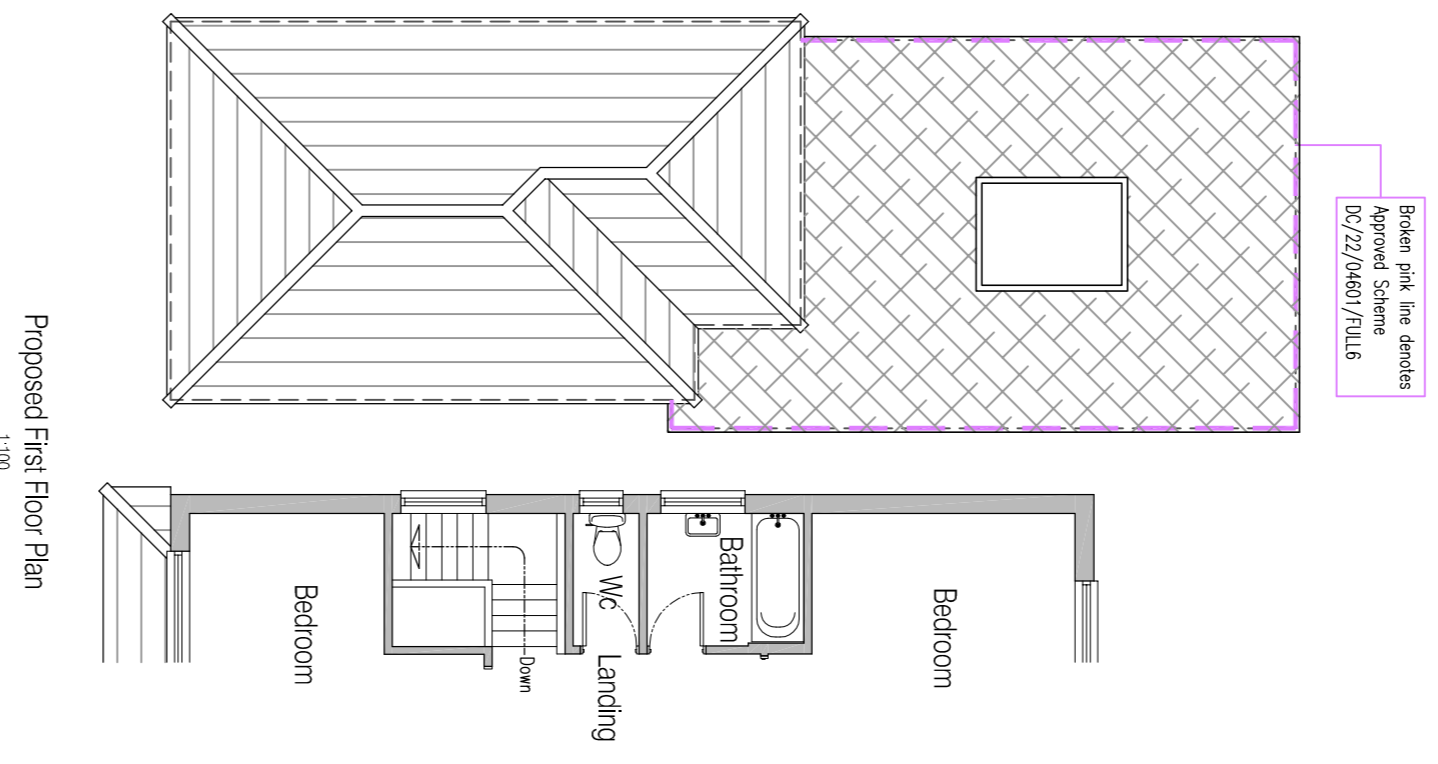
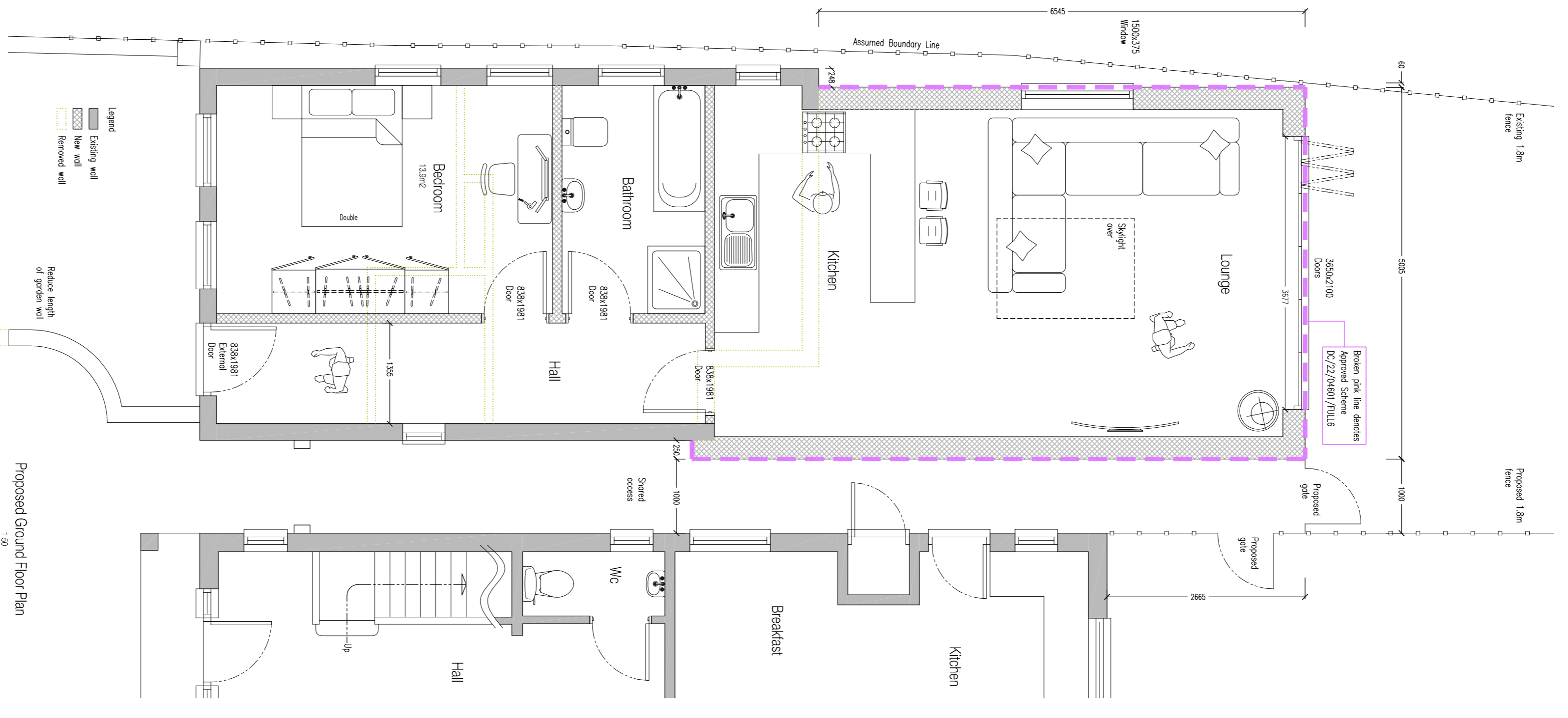
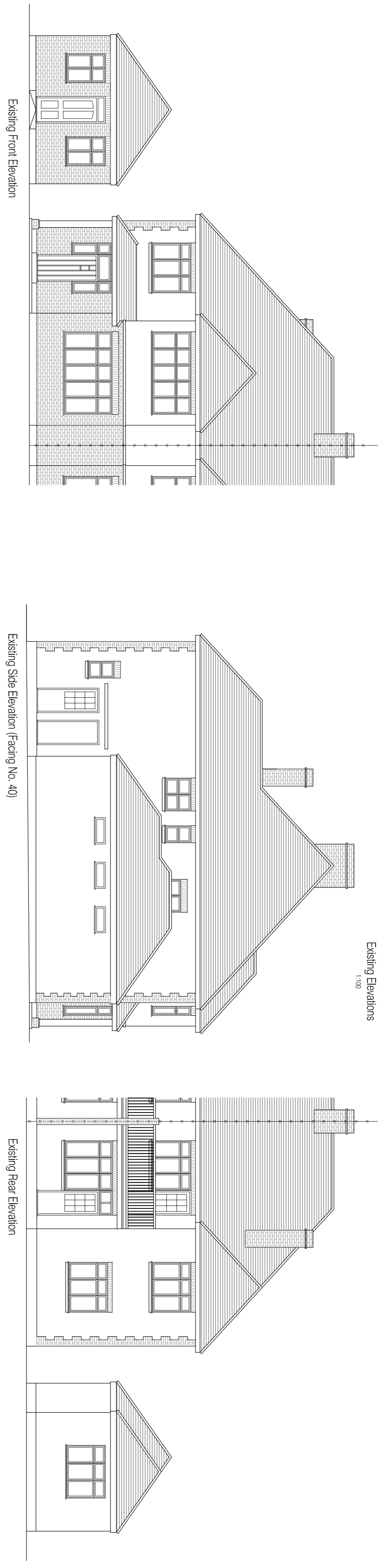
It is considered that the Proposed Development is in line with the principles of the NPPF, PPG, and local policy, and is therefore appropriate in terms of flood risk and drainage.

## 6 Appendices

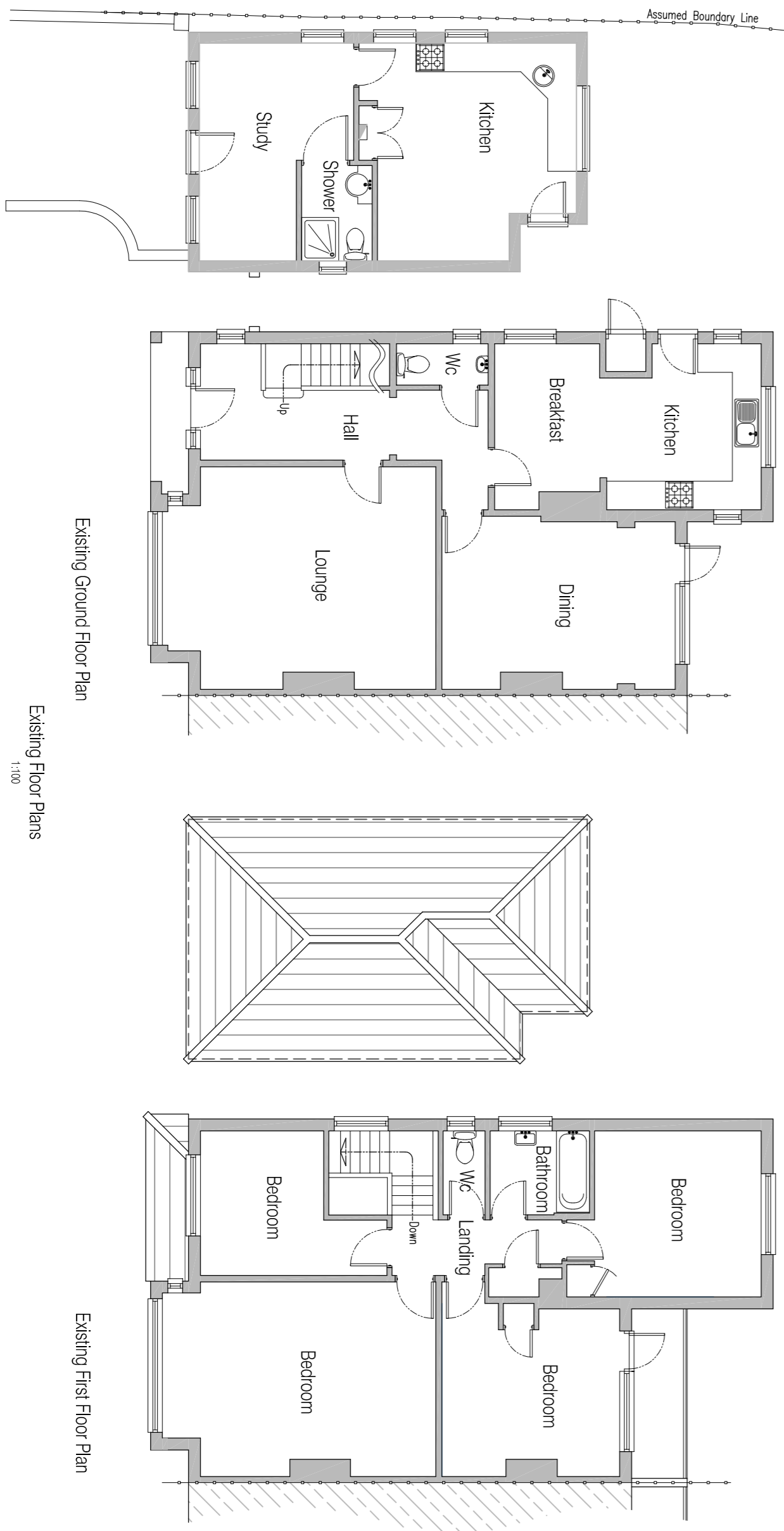
## A1 LiDAR Data



## A2 Development Proposals



Existing	Gross Internal Floor Areas	34.5sqm
Existing	Gross External Floor Areas	44.0sqm



P2	M/C	Issued for Comments	01/08/23
P1	M/C	Issued for Comments	26/07/23
Rev:	Description:	Date:	
Date:	26/07/23	Scale @A1:	See Drawing
Project: Garden Conversion of Garden Building Mr Sait 34 Sandford Road, Bromley, Kent, BR2 9AW			
Title: Existing and Proposed Plans, Existing Elevations			
- Planning Drawing 1 of 3 -			
Drawing No:	5778-221-PL011	Reviser:	P2

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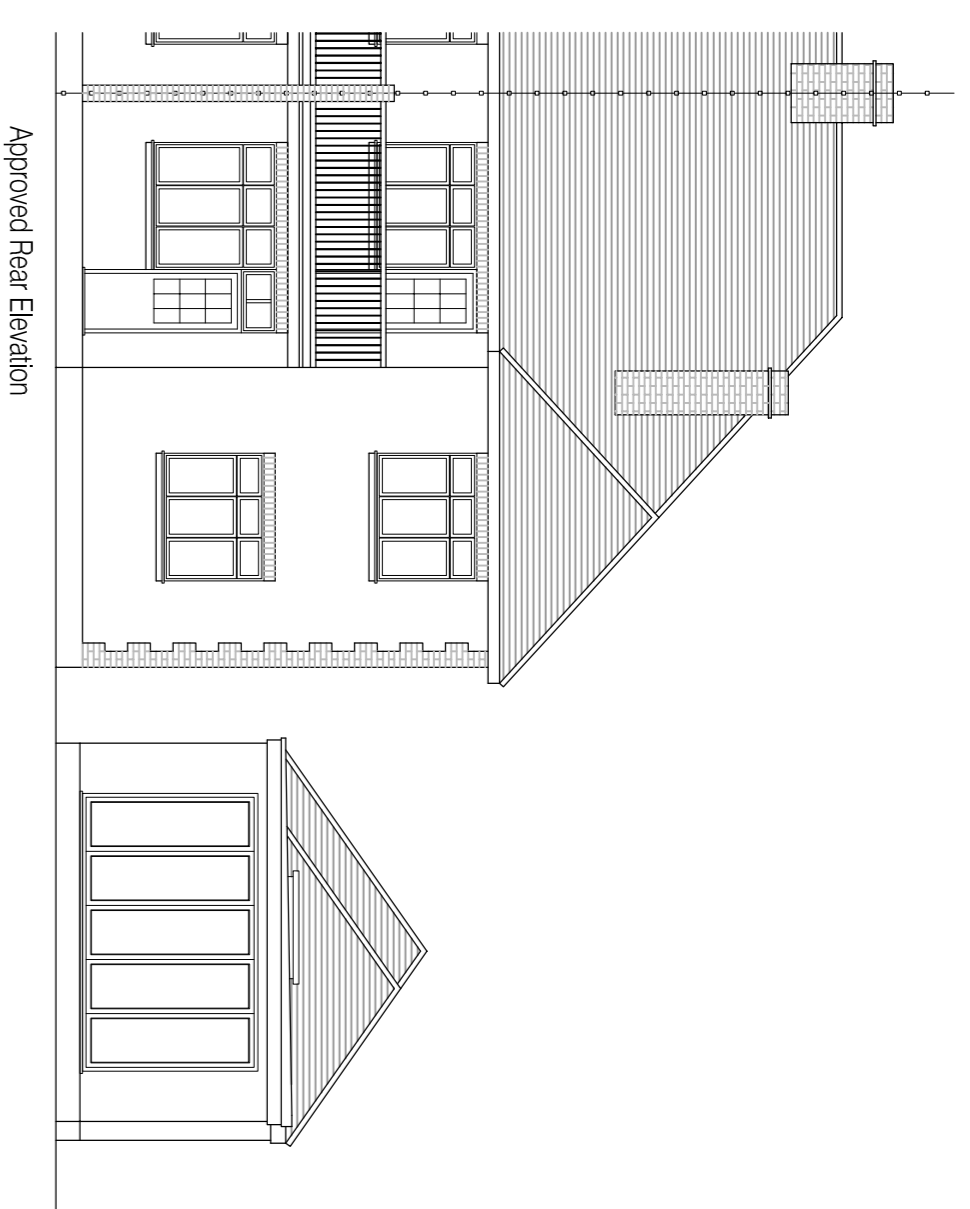
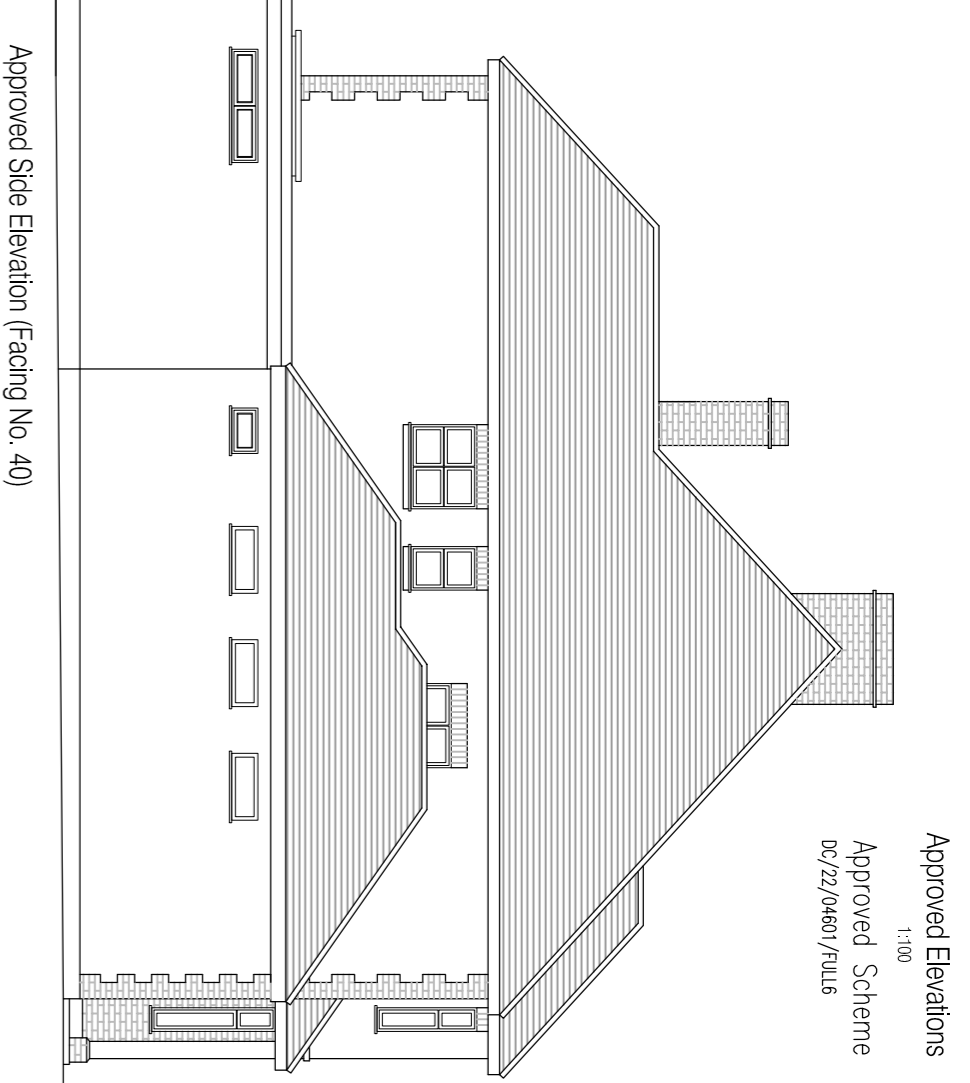
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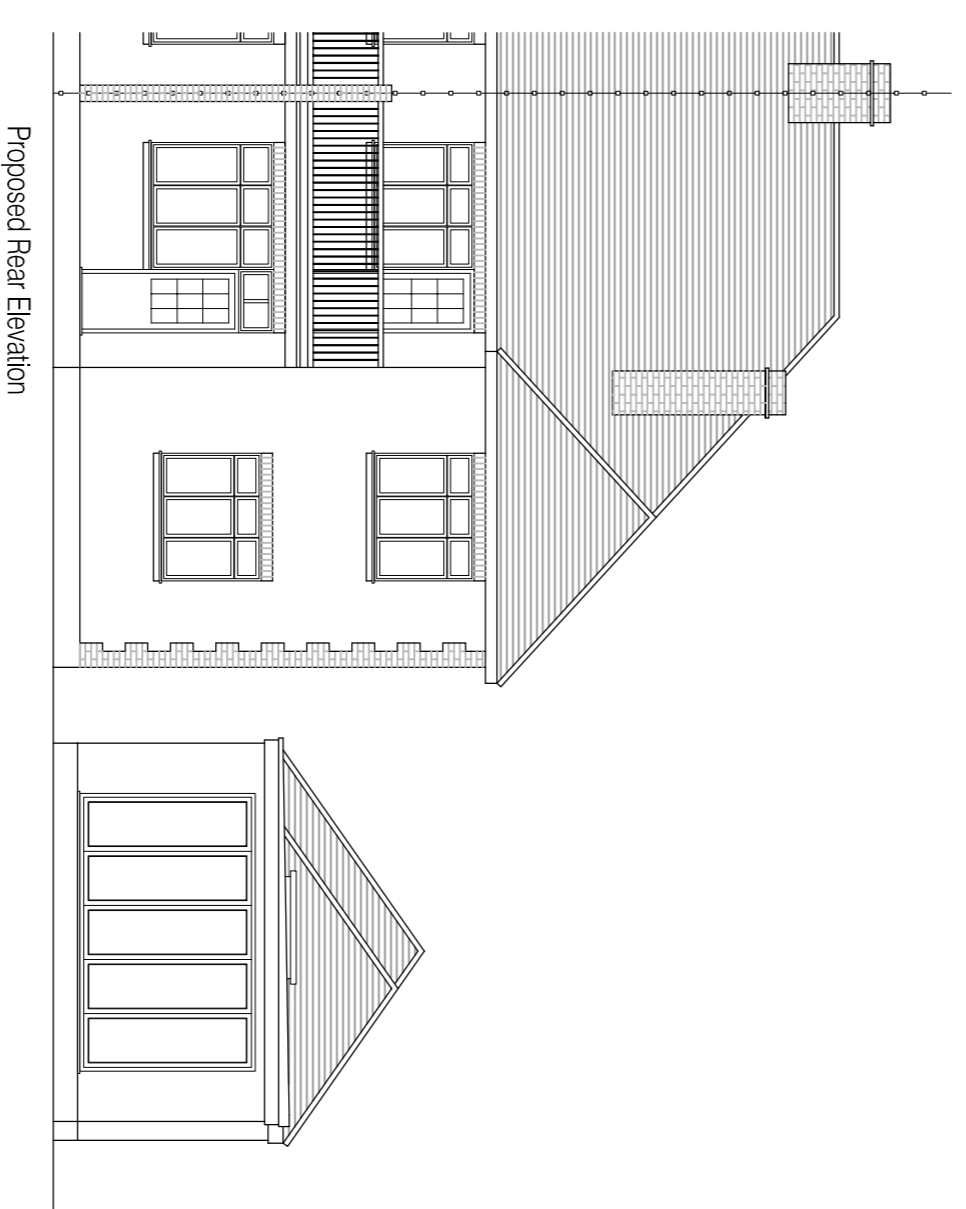
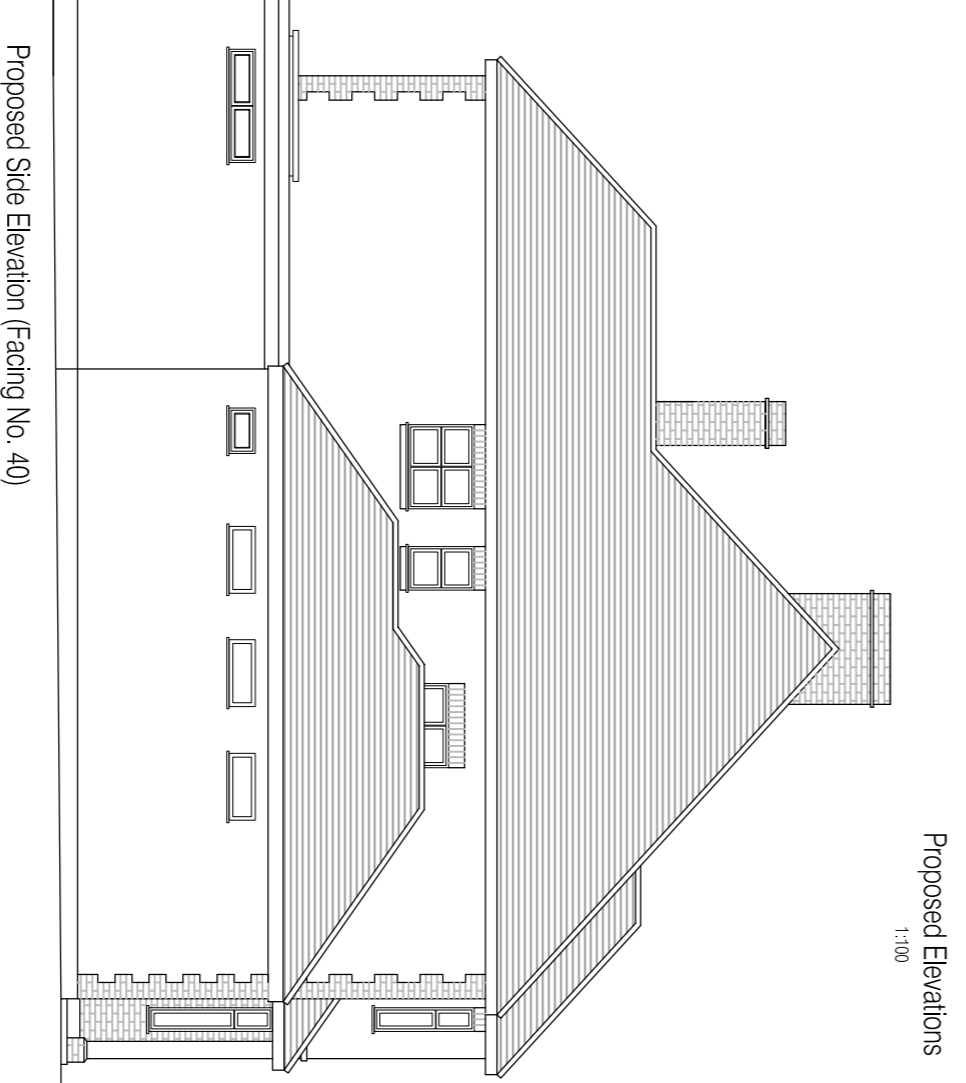
No part of the extension is to encroach the boundary line  
New Windows to match existing  
Smooth rendered walls to match existing



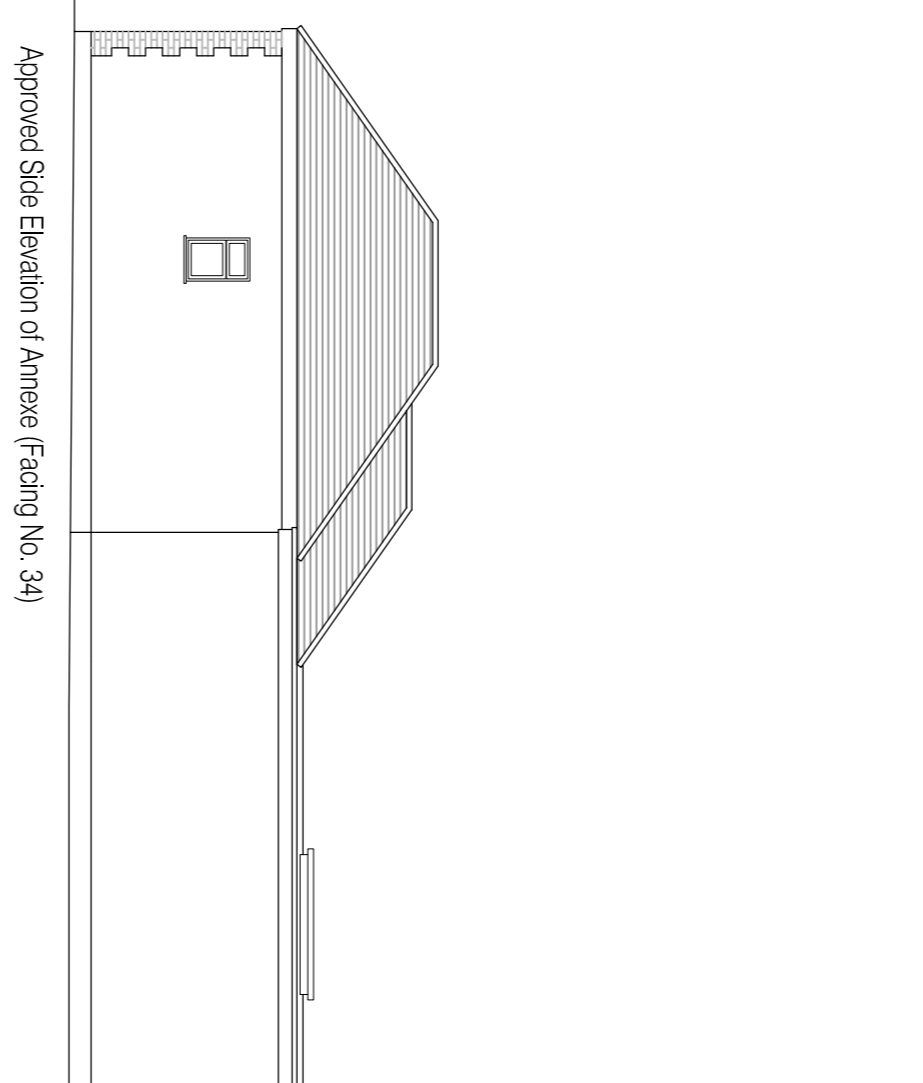
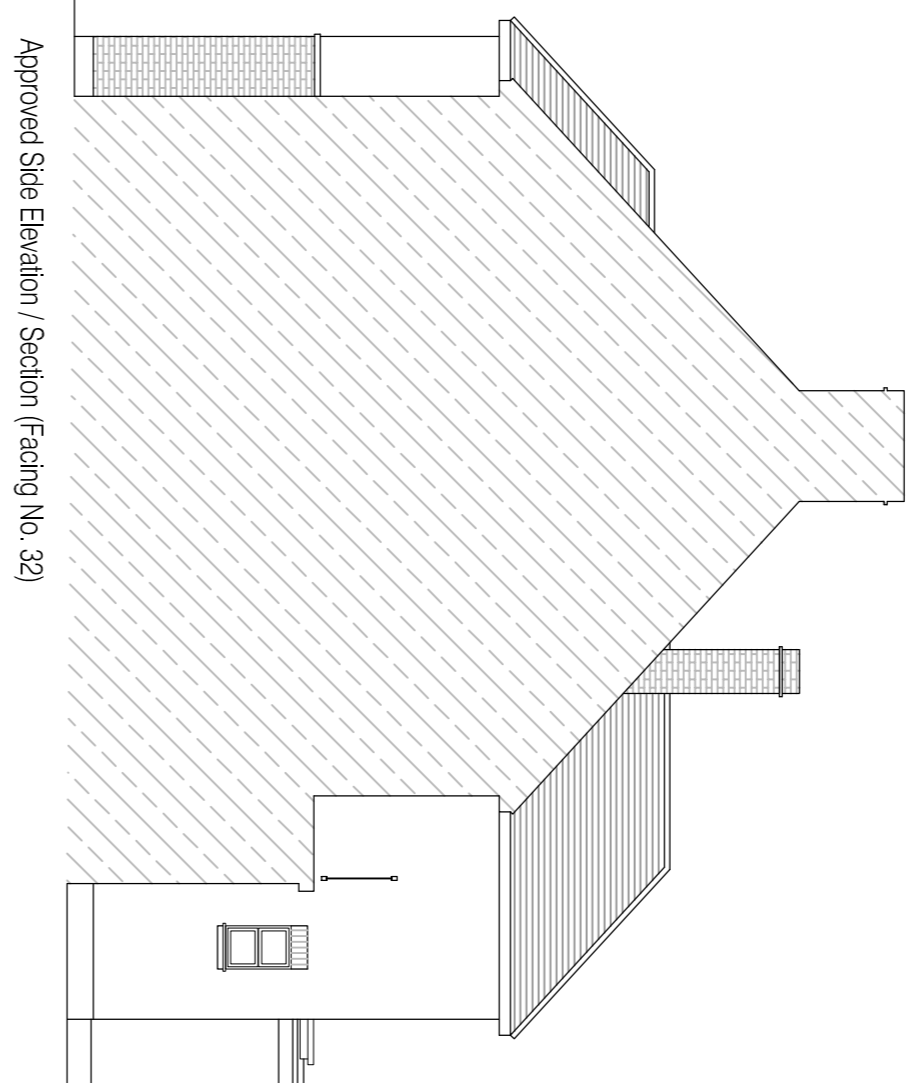
Approved Elevations  
1:100  
Approved Scheme  
03/23/2023/7400



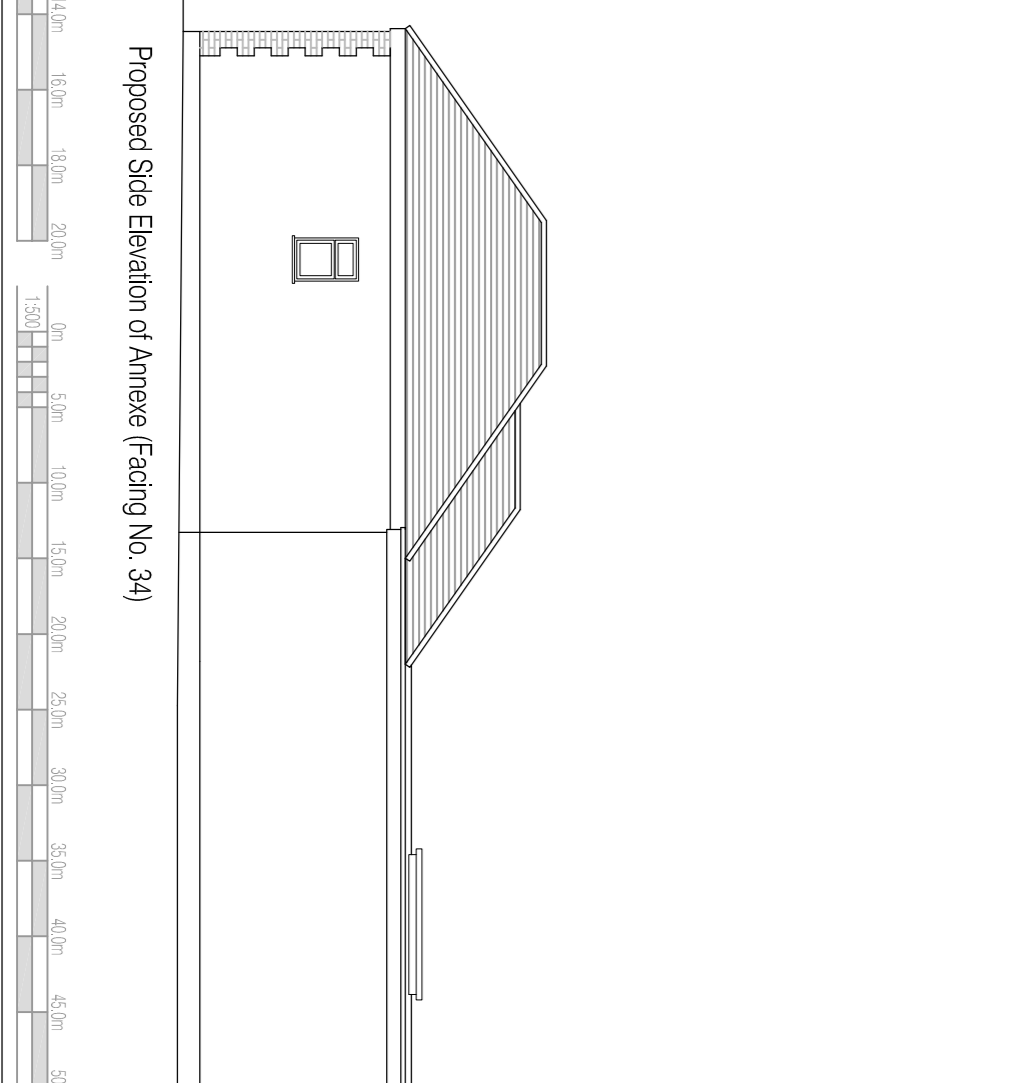
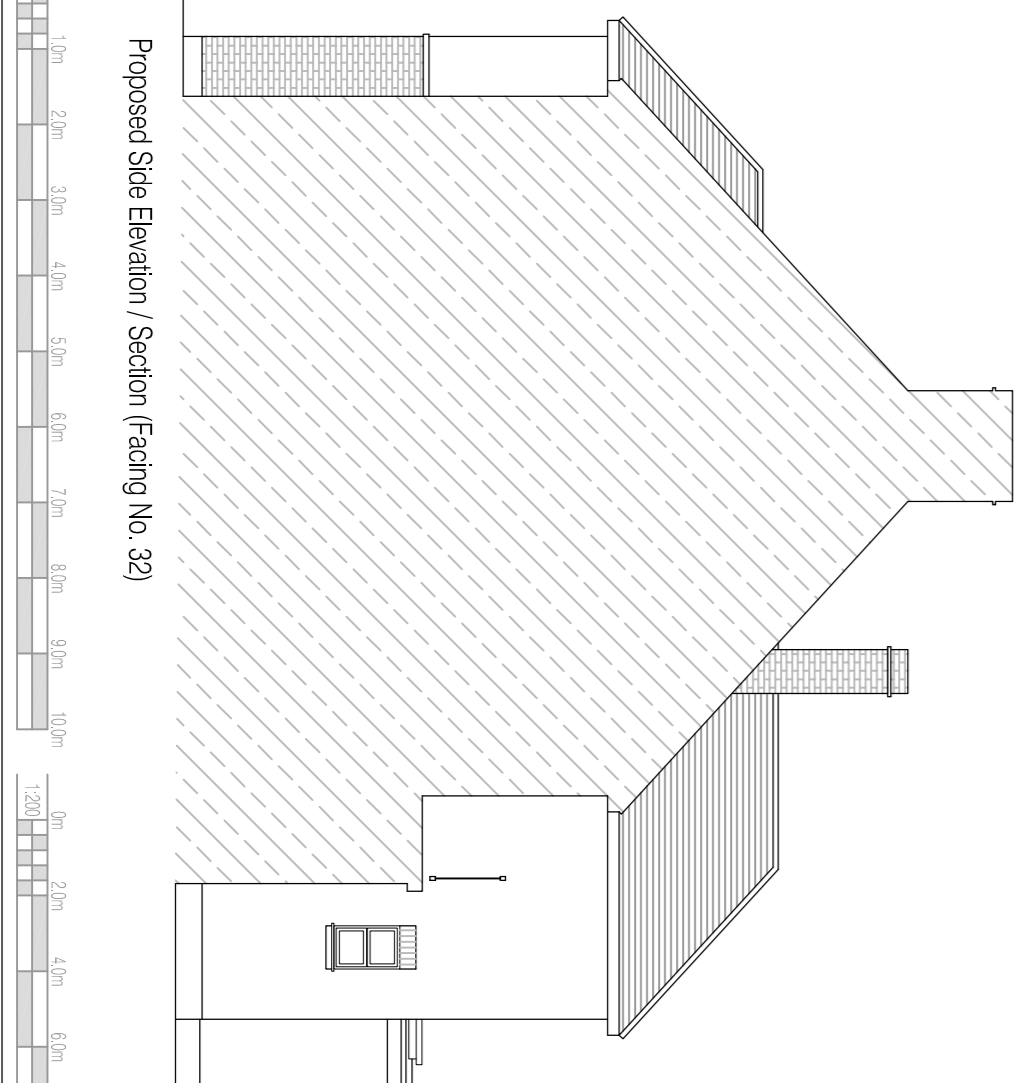
No part of the extension is to encroach the boundary line  
New Windows to match existing  
Smooth rendered walls to match existing



Proposed Elevations  
1:100



No part of the extension is to encroach the boundary line  
New Windows to match existing  
Smooth rendered walls to match existing



No part of the extension is to encroach the boundary line  
New Windows to match existing  
Smooth rendered walls to match existing

P1	M/C	Issued for Comments	26/07/23
Rev:	Description:	Date:	
Date:	26/07/23	Scale @A1:	See Drawing

**Project:**  
Proposed Conversion of  
Garden Building  
Mt Salt  
34 Sandford Road, Bromley,  
Kent, BR2 9AW

**Title:**  
Approved and Proposed  
Elevations

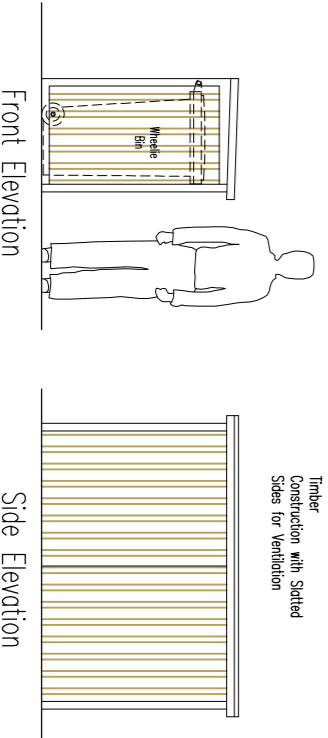
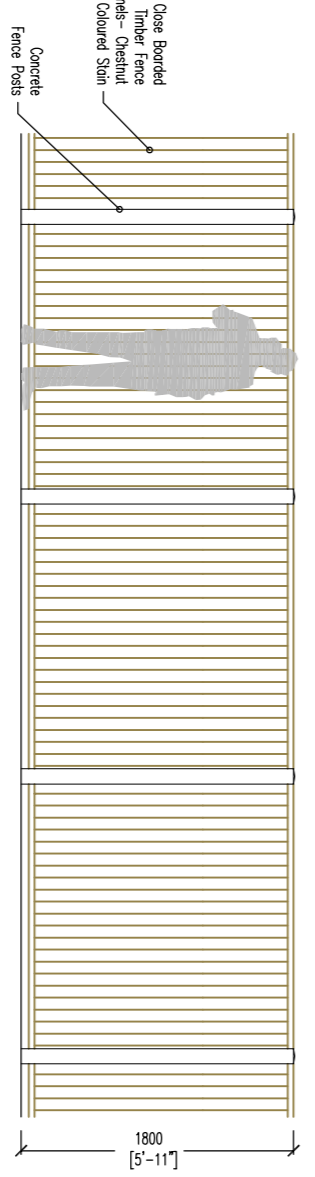
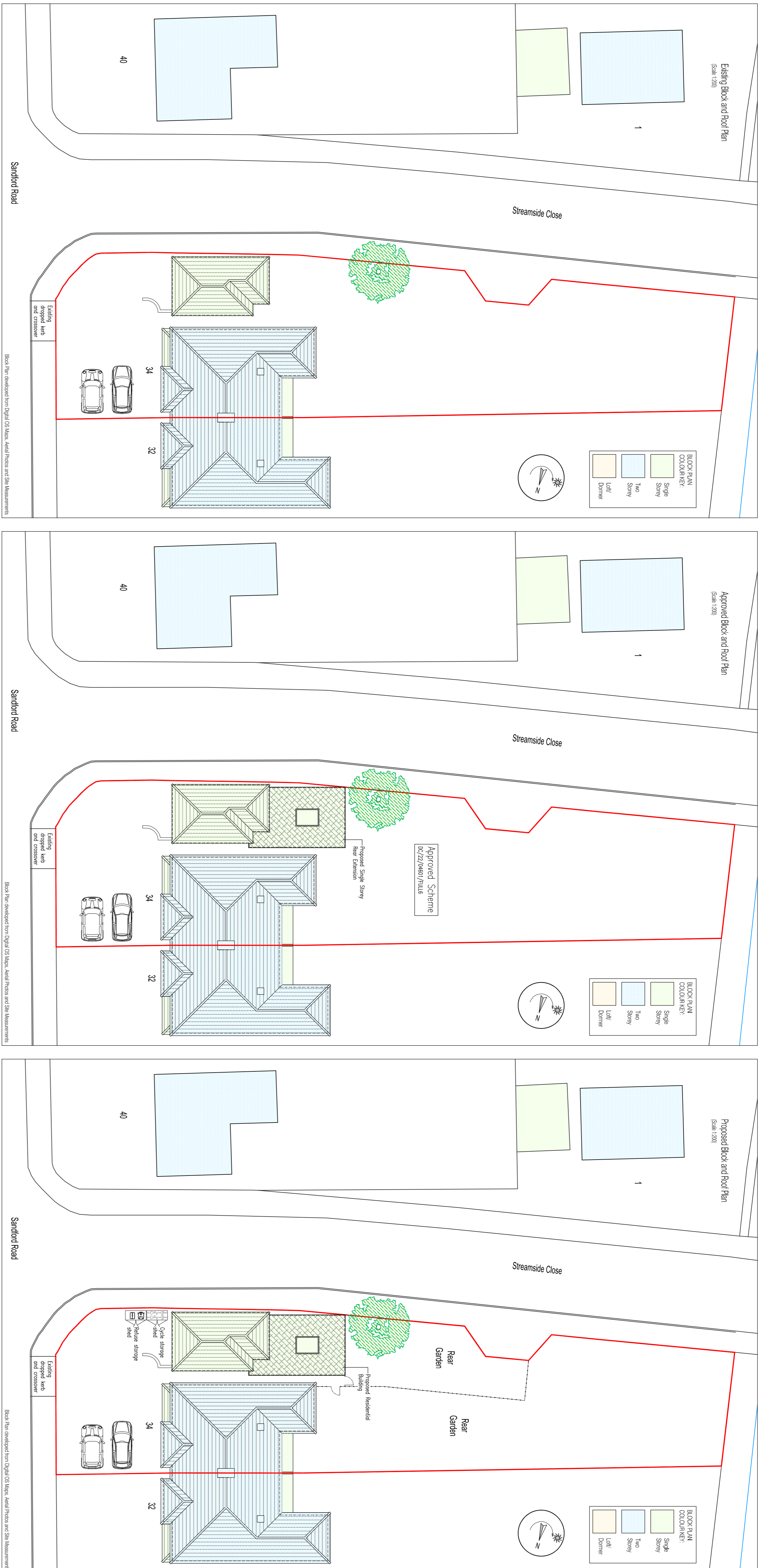
- Planning Drawing 2 of 3-

<b>Drawing No:</b>	<b>Revision:</b>
5778-221-PL012	P1

**crofton design**  
services limited

2-3 Rice Parade, Fairway,  
Petts Wood, Kent, BR5 1EQ  
01689 836855  
design@croftondesign.co.uk  
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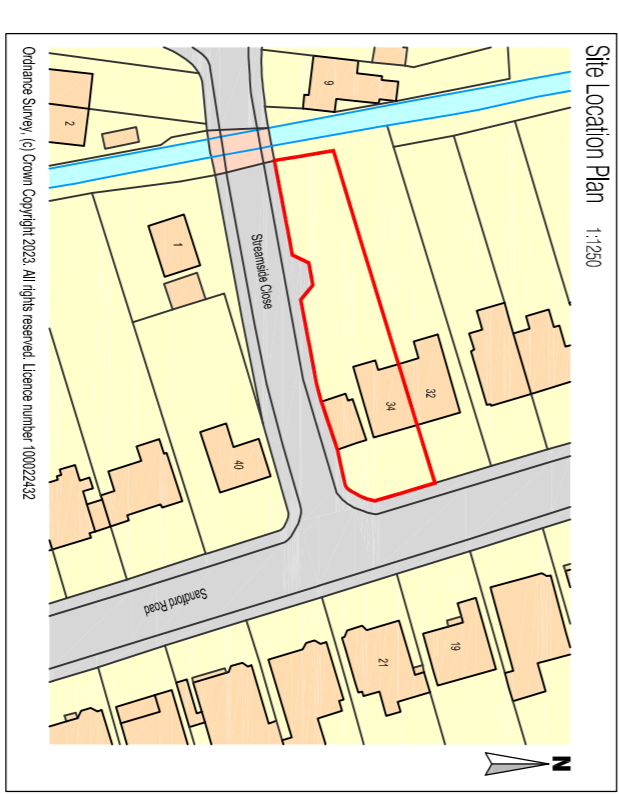
[www.croftondesign.co.uk](http://www.croftondesign.co.uk)



Example of Bird Box  
To be located on site



Example of Insect Box  
To be located on site



P2	MC	Issued for Comments	01/08/23
P1	MC	Issued for Comments	26/07/23
Rev:	Description:	Date:	
		Scale @A1:	See Drawing
Date:	26/07/23		

**Project:**  
Proposed Conversion of  
Garden Building  
Mr Salt  
34 Sandford Road, Bromley,  
Kent, BR2 9AW

**Title:**  
Existing, Approved and  
Proposed Block/Roof Plans

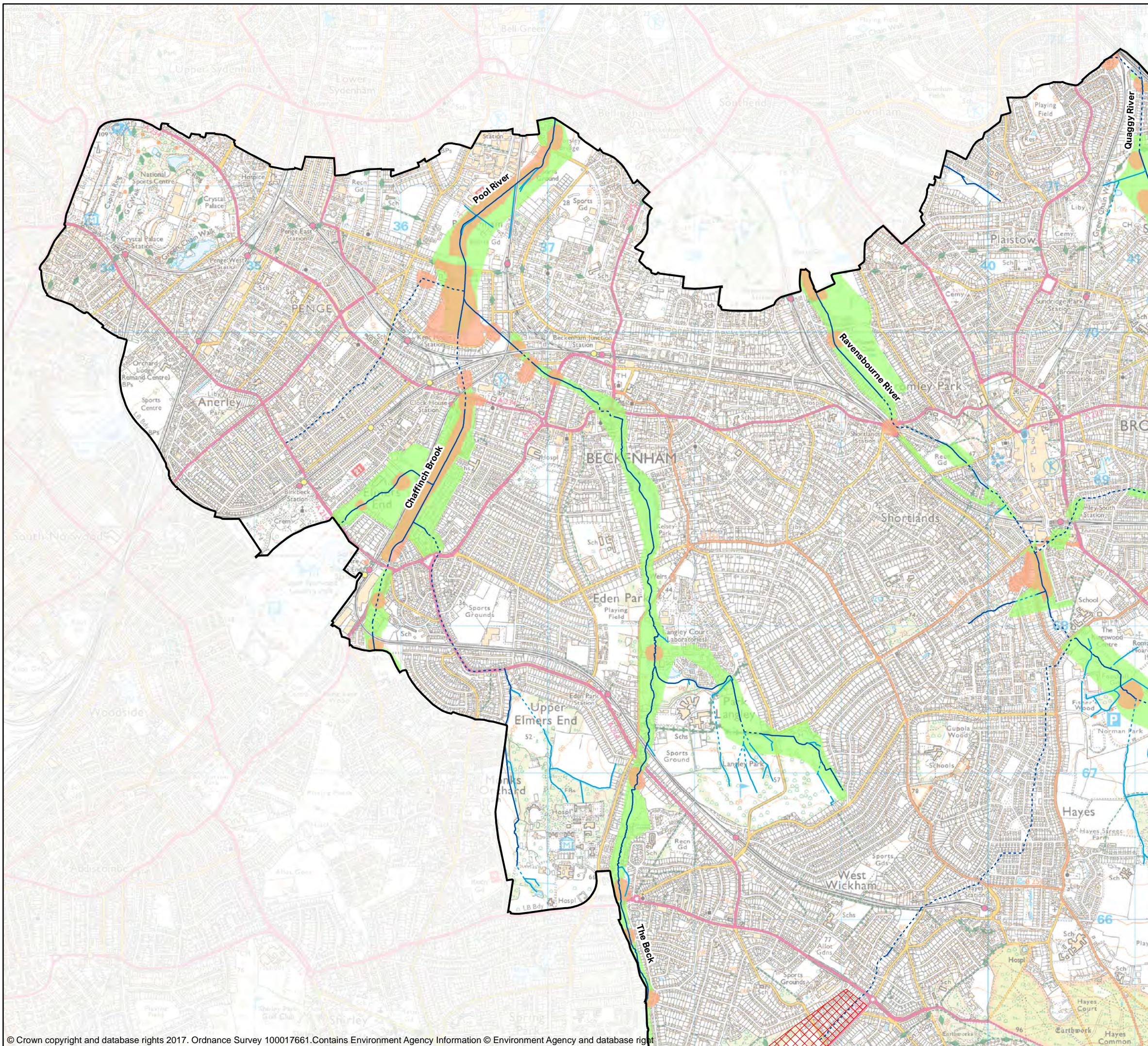
- Planning Drawing 3 of 3-

<b>Drawing No:</b>	5778-221-PL013	<b>Revision:</b>	P2
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Petts Wood, Kent, BR5 1EQ  
design@croftondesign.co.uk  
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## **A3 Strategic Flood Risk Assessment Mapping**

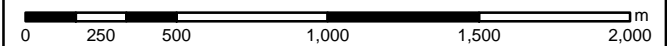
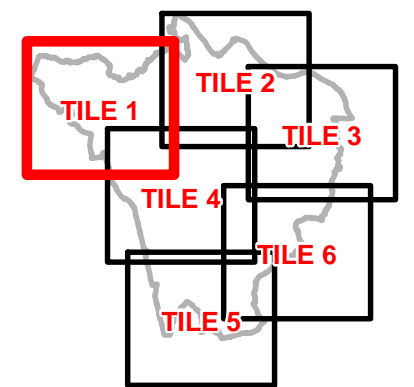


**Legend**

- Borough Boundary
- Main River Culvert
- Ordinary Watercourse Culvert
- Main River
- Ordinary Watercourses

**Flooding History**

- Recorded GW flooding (LBB)
- September 1968 Flood Extent
- August 1977 Flood Extent
- November 1965 Flood Extent



Strategic Flood Risk Assessment



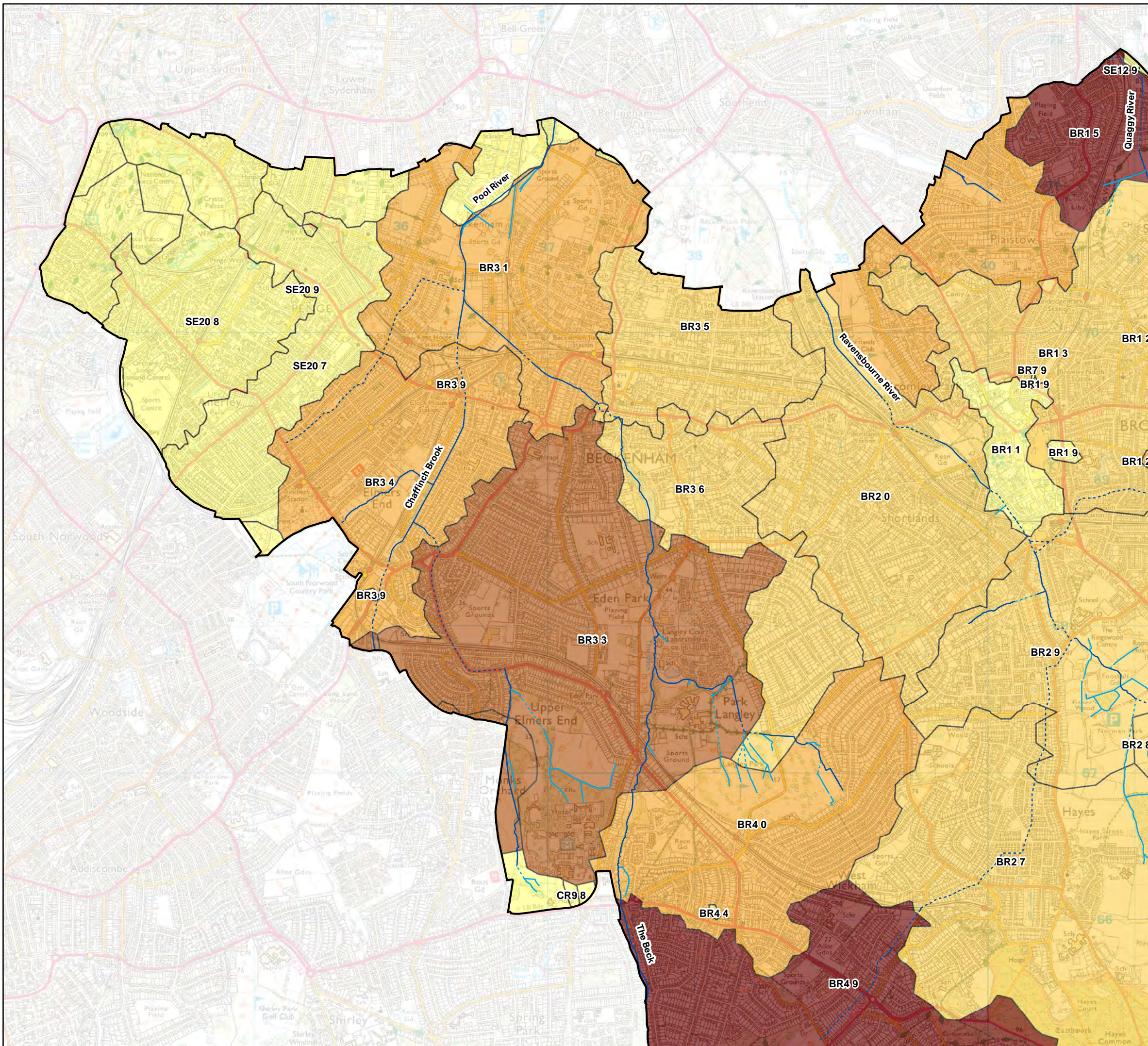
Sunley House, 4 Bedford Park  
Croydon, Surrey, CR0 2AP  
Tel: +44 (0) 208 639 3500  
www.aecom.com

**Flood History**

GIS: SB	Checked: BN	Approved: GP	Date: 28/02/2017
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Map no: 004a	Tile 1	Scale: 1:400,000
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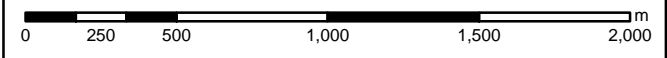
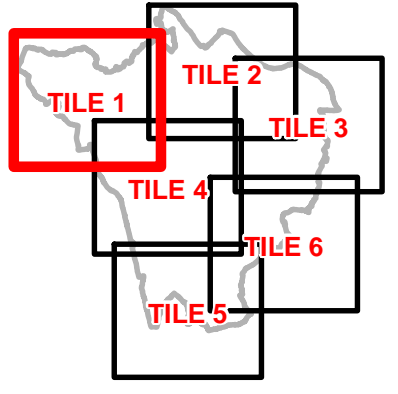
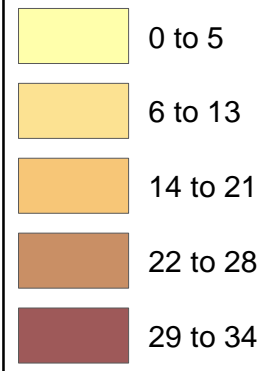
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**Legend**

- Borough Boundary
- Ordinary Watercourses
- Main River
- Main River Culvert
- Ordinary Watercourse Culvert

**Sewer flooding incidents**



Strategic Flood Risk Assessment



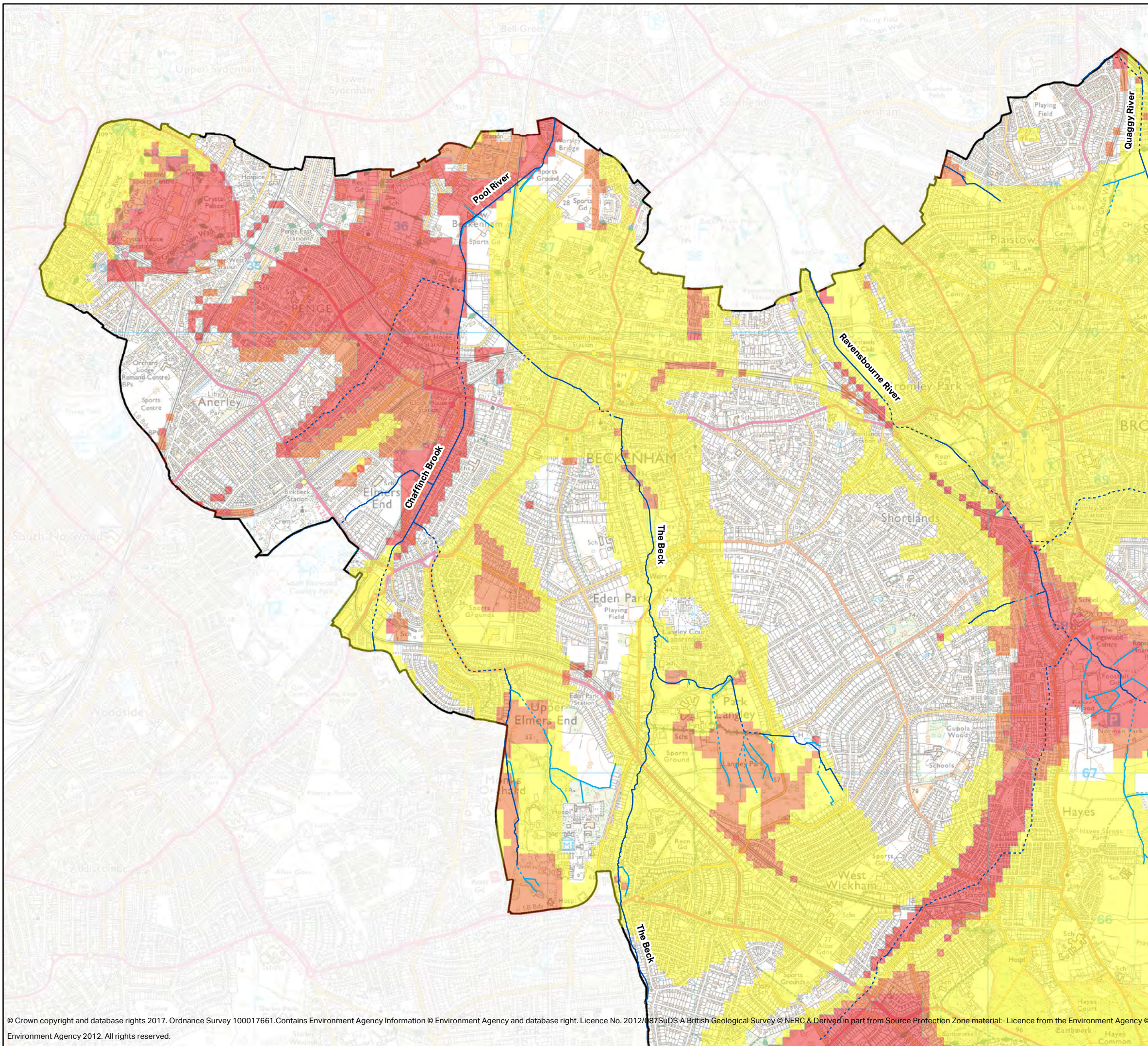
Sunley House, 4 Bedford Park  
Croydon, Surrey, CR0 2AP  
Tel: +44 (0) 208 639 3500  
[www.aecom.com](http://www.aecom.com)

**Sewer Flood Incidents**

GIS: SB	Checked: BN	Approved: GP	Date: 28/02/2017
------------	----------------	-----------------	---------------------

Map no: 004b	Tile 1	Scale: 1:25,000
-----------------	--------	--------------------

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**LEGEND**

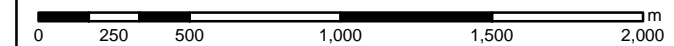
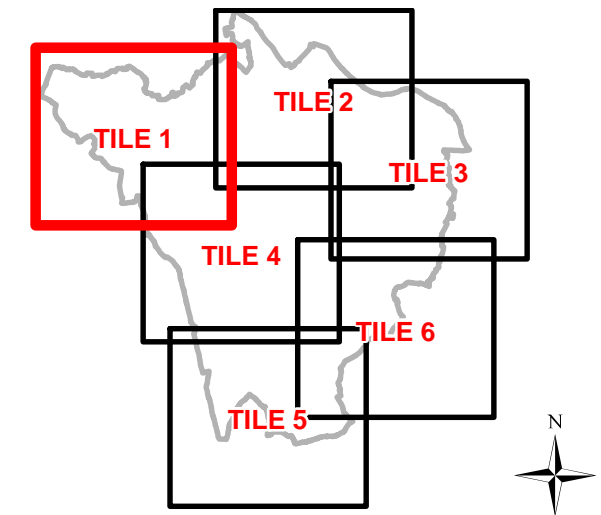
- Borough Boundary
- Main River Culvert
- Ordinary Watercourse Culvert
- Main River
- Ordinary Watercourses

**Risk of Groundwater Flooding**

- Limited potential for groundwater flooding to occur
- Potential for groundwater flooding of property situated below ground level
- Potential for groundwater flooding to occur at surface

**NOTE:**

This map provides only a high level indication of groundwater flooding susceptibility, based on generic broad scale assumptions. This data should not be used in isolation to indicate risk of groundwater flooding, but should be considered in conjunction with other relevant information and site-specific investigation.



Strategic Flood Risk Assessment



Sunley House, 4 Bedford Park  
Croydon, Surrey, CR0 2AP  
Tel: +44 (0) 208 639 3500  
www.aecom.com

**Areas at Risk of Flooding from Groundwater**

GIS: SB	Checked: JB	Approved: GP	Date: 06/04/2017
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Map no: 007	Tile 1	Scale: 1:25,000
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## **A4 Thames Water Asset Records and Flooding History**





NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
4453	n/a	n/a
4311	n/a	n/a
4352	43.7	n/a
4310	43.81	42.34
4304	44.06	n/a
4350	n/a	n/a
431A	n/a	n/a
4251	n/a	n/a
4203	n/a	n/a
3454	n/a	n/a
4455	n/a	n/a
4402	n/a	n/a
321A	n/a	n/a
331D	n/a	n/a
331C	n/a	n/a
3305	43.88	42.45
3304	44.28	42.33
3301	44.26	42.8
331B	n/a	n/a
331F	n/a	n/a
331E	n/a	n/a
331G	n/a	n/a

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

# Sewer Flooding

History Enquiry



Property Searches

Logika Consultants

**Search address supplied** 34  
Sandford Road  
Bromley  
BR2 9AW

**Your reference** 14993A 34 Bromley Road

**Our reference** SFH/SFH Standard/2023\_4898341

**Received date** 16 October 2023

**Search date** 16 October 2023



Thames Water Utilities Ltd  
Property Searches, PO Box 3189, Slough SL1 4WW



[searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)  
[www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



0800 009 4540

**Search address supplied:** 34, Sandford Road, Bromley, BR2 9AW

**This search is recommended to check for any sewer flooding in a specific address or area**

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched;
- (ii) any negligent or incorrect interpretation of the records searched;
- (iii) and any negligent or incorrect recording of that interpretation in the search report
- (iv) compensation payments



Thames Water Utilities Ltd  
Property Searches, PO Box 3189, Slough SL1 4WW



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[www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



0800 009 4540

### History of Sewer Flooding

#### **Is the requested address or area at risk of flooding due to overloaded public sewers?**

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is “overloaded” when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- “At Risk” properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company’s reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website [www.thameswater.co.uk](http://www.thameswater.co.uk)



Thames Water Utilities Ltd  
Property Searches, PO Box 3189, Slough SL1 4WW



[searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)  
[www.thameswater-propertysearches.co.uk](http://www.thameswater-propertysearches.co.uk)



0800 009 4540