

# Seaton Gardens, Ruislip

## Flood Risk Assessment

July 2021

Project Information	
Project:	Seaton Gardens, Ruislip
Report Title:	Flood Risk Assessment
Client:	Longford Development Ltd
Instruction:	The instruction to undertake this Flood Risk Assessment & Drainage Strategy was received from Tara Weaver of Towers Associates acting on behalf of the client.
File Ref:	13910- Flood Risk Assessment-01

Approval Record	
Author:	Jessica Roberts BSc (Hons)
Checker:	Aled Williams BSc (Hons) MCIWEM
Approver:	Victoria Griffin BSc (Hon) MSc MIEnvSc CEnv

Document History		
Revision	Date	Comment
01	28/07/2021	First issue

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This report will remain valid for a period of twelve months (from the date of last issue) after which the source data should be reviewed in order to reassess the findings and conclusions on the basis of latest available information.

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## Introduction

Waterco has been commissioned to undertake a Flood Risk Assessment in relation to a proposed residential development on land to the rear of 45 Seaton Gardens, Ruislip, HA4 0BB.

The purpose of this report is to outline the potential flood risk to the site, the impact of the proposed development on flood risk elsewhere, and the proposed measures which could be incorporated to mitigate the identified risk. This report has been prepared in accordance with the guidance contained in the National Planning Policy Framework (NPPF) and the National Planning Practice Guidance (NPPG): Flood Risk and Coastal Change.

## Existing Conditions

The site covers an area of approximately 170m<sup>2</sup> and is located at National Grid Reference (NGR): 510151, 186590. A location plan and an aerial image are included in Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed July 2021) shows that the site currently forms part of the rear garden of 45 Seaton Gardens and is occupied by a double garage with associated hardstanding, a yurt and a landscape area.

The site is bordered by 41 Kingswear Road to the north, residential gardens to the east, 45 Seaton Gardens to the south and Kingswear Road to the west. Access to the site is provided from Kingswear Road.

### Local Topography

Topographic levels to metres Above Ordnance Datum (m AOD) have been derived from a 1m resolution Environment Agency (EA) composite 'Light Detecting and Ranging' (LiDAR) Digital Terrain Model (DTM). A review of LiDAR data shows that the site is relatively flat with levels ranging from 40.034m AOD in the north-east to 39.91m AOD in the south-east.

A LiDAR extract is included in Appendix B.

### Ground Conditions

The British Geological Survey (BGS) online mapping (1:50,000 scale) indicates that there are no superficial deposits recorded on site. The bedrock underlying the site is recorded as the Lambeth Group, generally comprising clay, silt and sand.

The geological mapping is available at a scale of 1:50,000 and as such may not be accurate on a site-specific basis.

The EA's 'Source Protection Zones' data, obtained from MAGIC's online mapping [accessed July 2021], indicates that the site is not located within a Groundwater Source Protection Zone.

The Cranfield University 'Soilscapes' map [accessed July 2021] indicates that the site is underlain by '*Slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils*'.

## Development Proposals

The proposed development is for a detached two storey dwelling with associated landscaping and parking. A development plan is included in Appendix C.

## Flood Zone Classification and Policy Context

The EA 'Flood Map for Planning', included in Appendix D, shows that the site is located within Flood Zone 1 - an area outside of the extreme flood extent, considered to have a less than 0.1% annual probability of flooding from rivers or the sea.

In accordance with Table 2 of the NPPG: Flood Risk and Coastal Change, residential development is classified as 'more vulnerable'. Table 3 of the NPPG states that 'more vulnerable' development is considered appropriate within Flood Zone 1. The development therefore passes the flood risk Sequential Test and the Exception Test does not need to be applied.

### Local Policy

The London Borough of Hillingdon Council Local Plan Part 1 (adopted November 2012) and Part 2 (adopted January 2020) contain the following policies relating to flood risk:

#### ***'POLICY DMEI 9: Management of Flood Risk***

*A) Development proposals in Flood Zones 2 and 3a will be required to demonstrate that there are no suitable sites available in areas of lower flood risk. Where no appropriate sites are available, development should be located on the areas of lowest flood risk within the site.*

*Flood defences should provide protection for the lifetime of the development. Finished floor levels should reflect the Environment Agency's latest guidance on climate change.*

*B) Development proposals in these areas will be required to submit an appropriate level Flood Risk Assessment (FRA) to demonstrate that the development is resilient to all sources of flooding.*

*C) Development in Flood Zone 3b will be refused in principle unless identified as an appropriate development in Flood Risk Planning Policy Guidance. Development for appropriate uses in Flood Zone 3b will only be approved if accompanied by an appropriate FRA that demonstrates the development will be resistant and resilient to flooding and suitable warning and evacuation methods are in place.*

*D) Developments may be required to make contributions (through legal agreements) to previously identified flood improvement works that will benefit the development site.*

*E) Proposals that fail to make appropriate provision for flood risk mitigation, or which would increase the risk or consequences of flooding, will be refused.'*

Local guidance documents including the online West London Strategic Flood Risk Assessment (for the

boroughs of Barnet, Brent, Ealing, Harrow, Hillingdon and Hounslow) and the London Borough Hillingdon Preliminary Flood Risk Assessment (PFRA) (2011 and the 2017 addendum) have been reviewed and inform this report.

## Sources of Flooding and Probability

### Fluvial

The nearest watercourse is Yeading Brook which is located approximately 665m south-east of the site. Yeading Brook flows south-west in this location and is situated at approximately 35m AOD. There are no other watercourses in the vicinity of the site.

The site is located within Flood Zone 1 - an area outside of the extreme flood extent with less than 0.1% annual probability of flooding from rivers.

The site is situated approximately 10m above Yeading Brook and as such any potential flooding from this watercourse would not affect the site.

The EA 'Historical Flood Map' (Appendix D) shows that there are no historical records of fluvial flooding at or within the immediate vicinity of the site.

It can therefore be concluded that the risk of fluvial flooding is very low.

### Tidal

The site is situated at a minimum of approximately 39.91m AOD and is significantly above sea level. The risk of tidal flooding is therefore considered to be very low.

### Surface Water

Surface water flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The EA 'Flood Risk from Surface Water' map (Appendix D) indicates that the majority of the site is at very low risk of surface water flooding, meaning it has a less than 0.1% annual probability of flooding. The northern and southern boundaries of the site are shown to be at low risk of surface water flooding, with between a 1% and 0.1% annual probability of flooding. There is also a small area in the south-eastern extent of the site shown to be at medium risk of surface water flooding, with between a 3.3% and 1% annual probability of flooding.

Any potential surface water flooding arising at or near to the site would be directed south-west, away from the site, following the local topography.

There are no records of surface water flooding affecting the site.

The proposed dwelling and driveway will be located outside of the 0.1% annual probability surface water flood extent. It can therefore be concluded that the risk of surface water flooding is very low.

### **Sewer**

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity. Flooding is mostly applicable to combined and surface water sewers.

The Thames Water sewer plan, provided as Appendix E, identifies a 225mm public surface water sewer and a 150mm public combined sewer in Kingswear Road which flow in a south-easterly direction.

Any potential flooding arising from the public surface water sewer and public combined sewer in Kingswear Road would be directed south, away from the site, following the local topography.

The online West London Strategic Flood Risk Assessment sewer, groundwater & artificial flood risk web map shows areas susceptible to flooding and historical flood incidents in the area. The map has been reviewed online in July 2021 and shows that there have been no historical sewer incidents recorded on site or within the immediate vicinity of the site.

It can therefore be concluded that the risk of sewer flooding is very low.

### **Groundwater**

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

The online West London Strategic Flood Risk Assessment sewer, groundwater & artificial flood risk web map has been reviewed and shows that the site is not located within an area susceptible to groundwater flooding. Furthermore, there are no records of groundwater flooding at or near to the site.

No basement levels are identified on plans and it can therefore be concluded that the risk of groundwater flooding is low.

### **Artificial Sources**

There are no canals within the vicinity of the site. The EA 'Flood Risk from Reservoirs' map (Appendix D) shows that the site is not at risk of flooding from reservoirs.

It can therefore be concluded that the risk of flooding from artificial sources is very low.

### **Summary of Potential Flooding**

It can be concluded that the risk of flooding from all sources is very low. Therefore, no site-specific mitigation measures are considered necessary. However, in accordance with Building Regulations, finished floor levels should be set 150mm above surrounding ground levels.

## Conclusions

The proposal is for a detached two storey dwelling with associated landscaping and parking.

The site is located within Flood Zone 1 on the Environment Agency (EA) 'Flood Map for Planning' – an area considered to have the lowest probability of fluvial and tidal flooding. The site is shown to be located outside of the 0.1% annual probability flood extent.

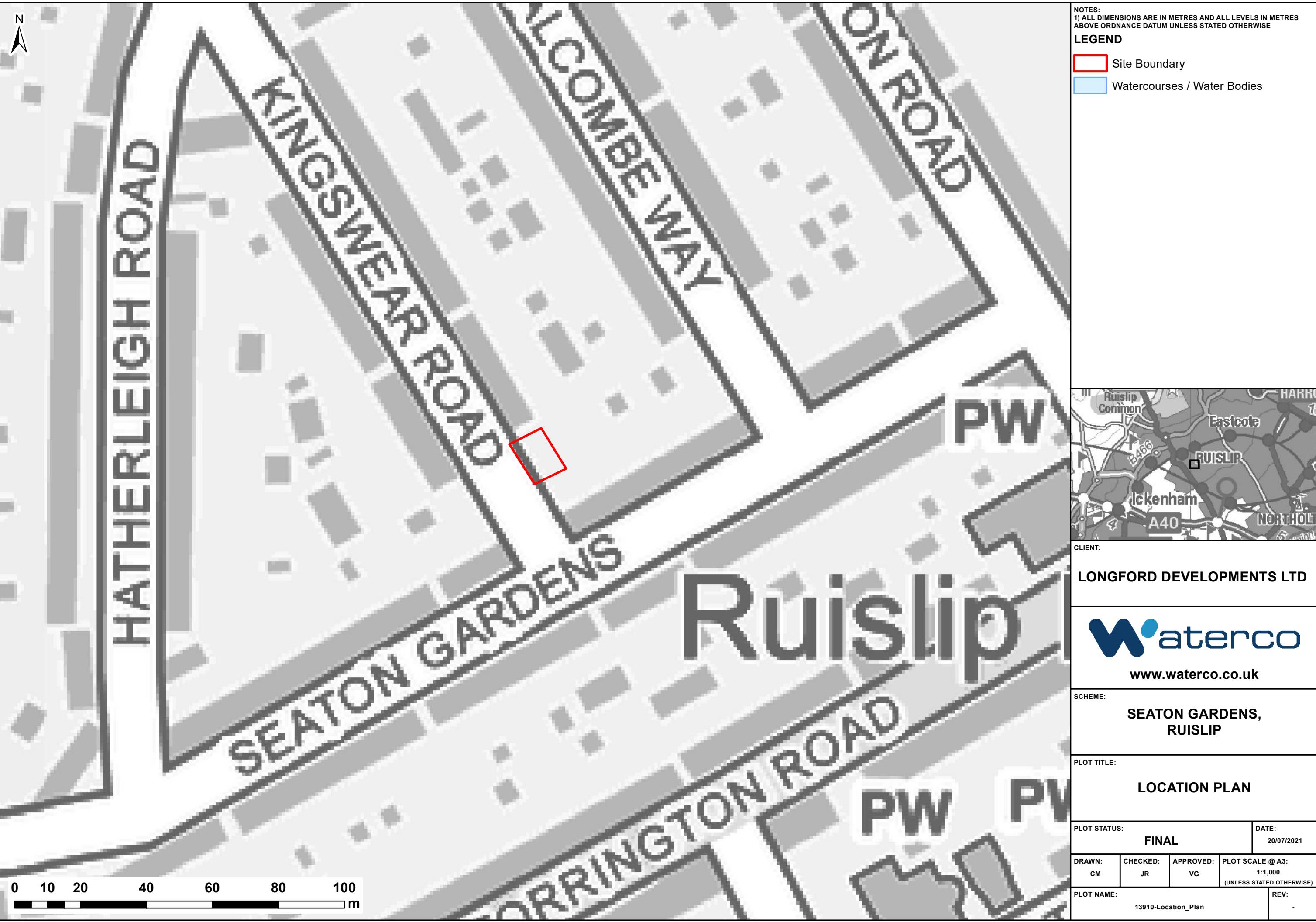
Surface water flooding is identified by EA mapping on the periphery of the site. However, the majority of the site including the location of the proposed dwelling and driveway is shown at very low risk of surface water flooding with a less than 0.1% annual probability of occurrence.

As the risk of flooding from all sources is low, no flood risk mitigation measures are considered necessary.

## Recommendations

1. Submit this Flood Risk Assessment to the Planning Authority in support of the Planning Application.
2. In accordance with Building Regulations, finished floor levels should be set 150mm above surrounding ground levels.

## Appendix A Location Plan and Aerial Image

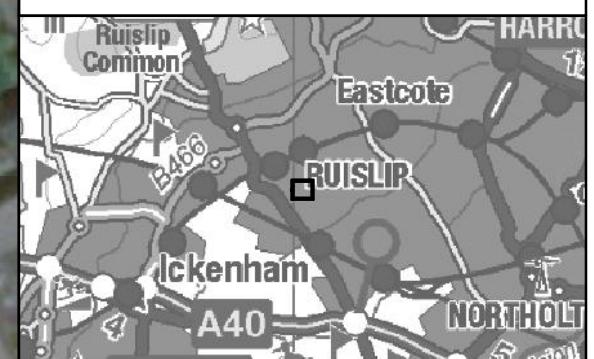




NOTES:  
1) ALL DIMENSIONS ARE IN METRES AND ALL LEVELS IN METRES  
ABOVE ORDNANCE DATUM UNLESS STATED OTHERWISE

LEGEND

 Site Boundary



CLIENT:

**LONGFORD DEVELOPMENTS LTD**

**waterco**

[www.waterco.co.uk](http://www.waterco.co.uk)

SCHEME:

**SEATON GARDENS,  
RUISLIP**

PLOT TITLE:

**AERIAL PLAN**

PLOT STATUS:

**FINAL** DATE:  
20/07/2021

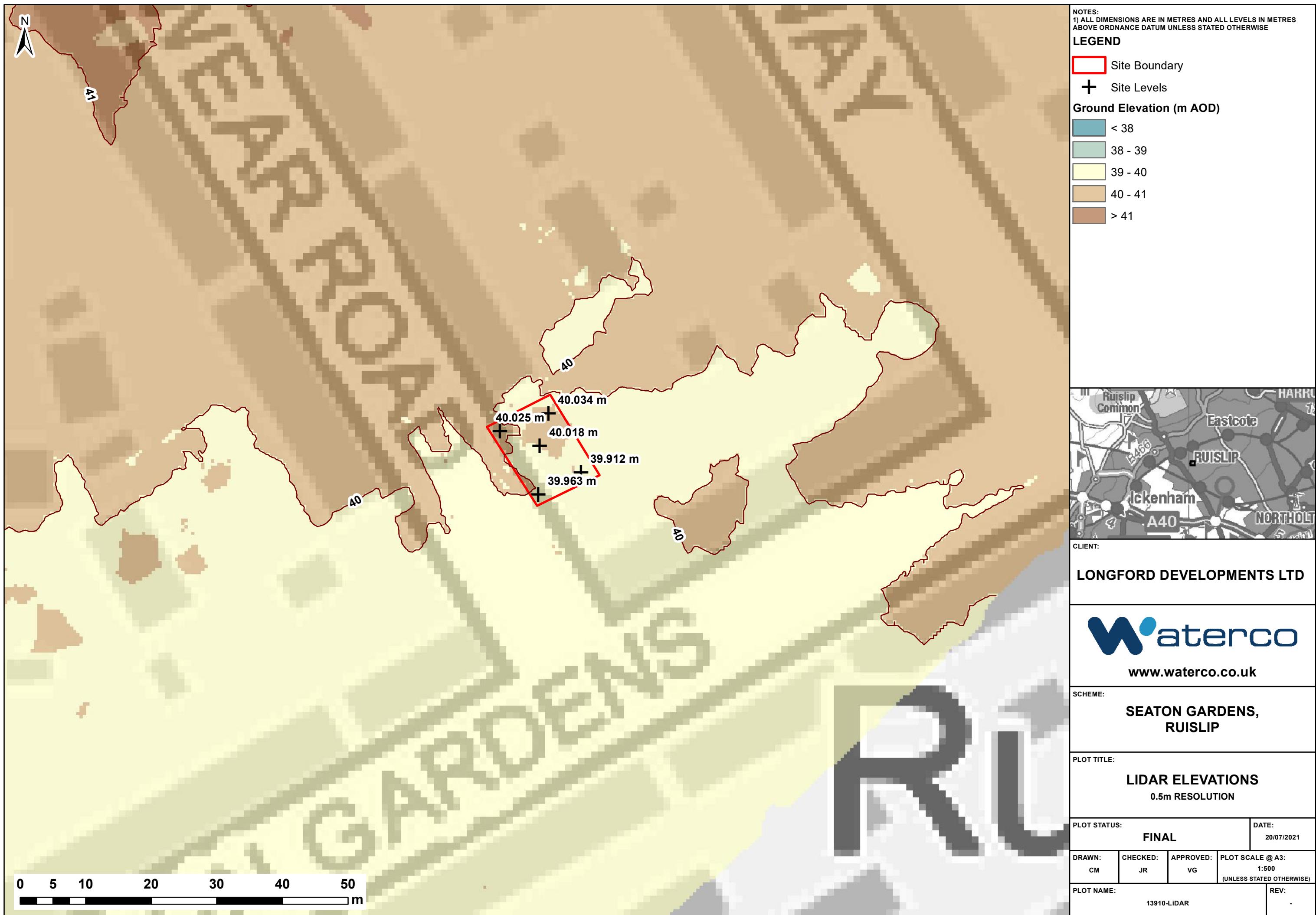
DRAWN: **CM** CHECKED: **JR** APPROVED: **VG** PLOT SCALE @ A3:  
1:1,000  
(UNLESS STATED OTHERWISE)

PLOT NAME: **13910-Aerial\_Plan** REV: **-**

0 10 20 40 60 80 100  
m

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

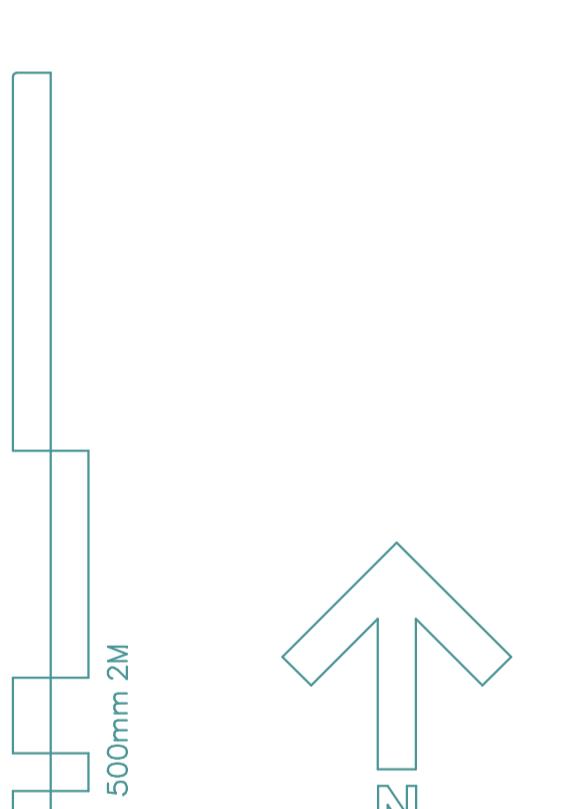
## Appendix B LiDAR Data



## Appendix C Existing and Proposed Development Plans

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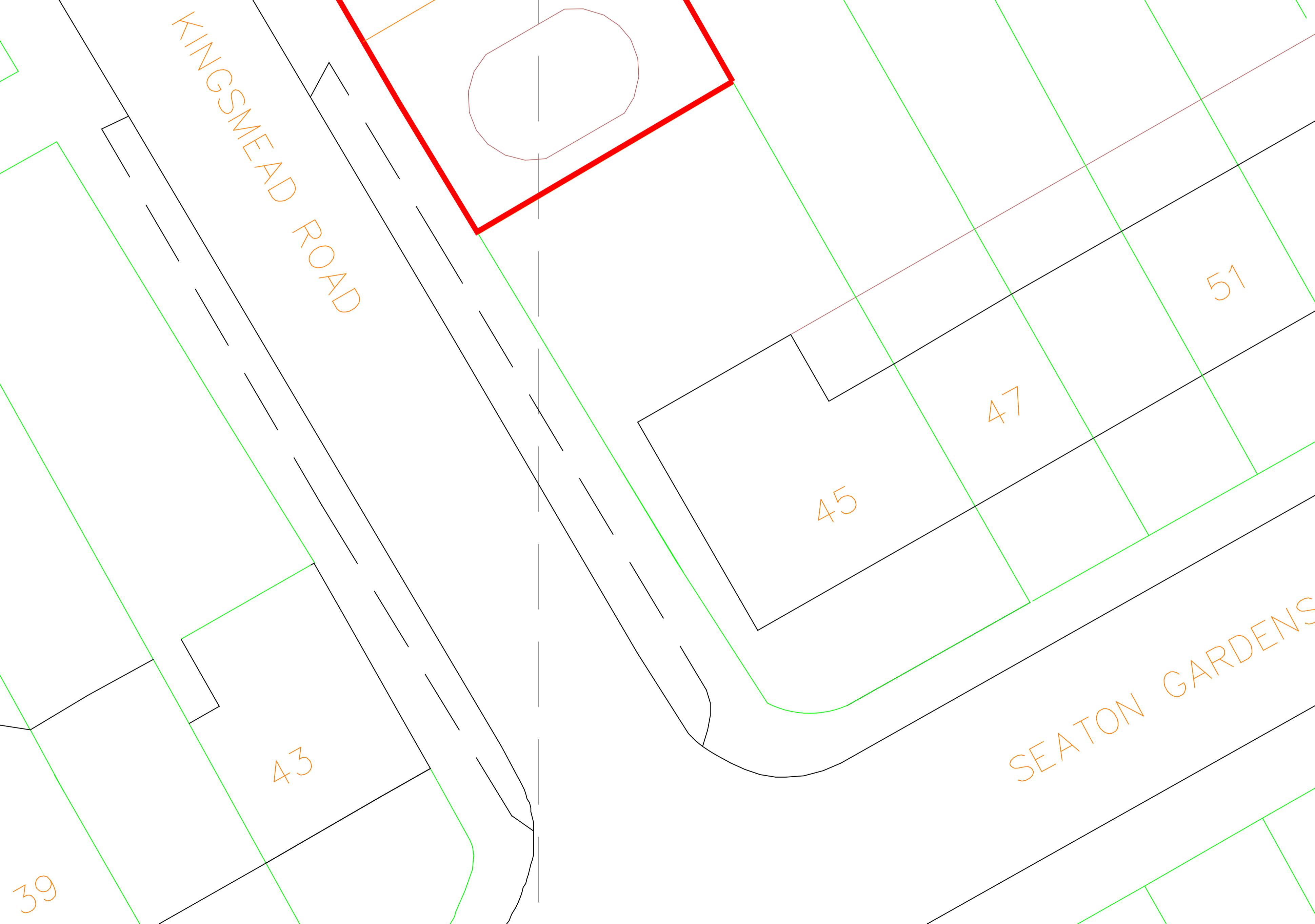
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REV.	DATE	DESCRIPTION
JOB Land to the rear of 45 Seaton Gardens Ruislip HA5 0BB		
TITLE Existing Block plan		

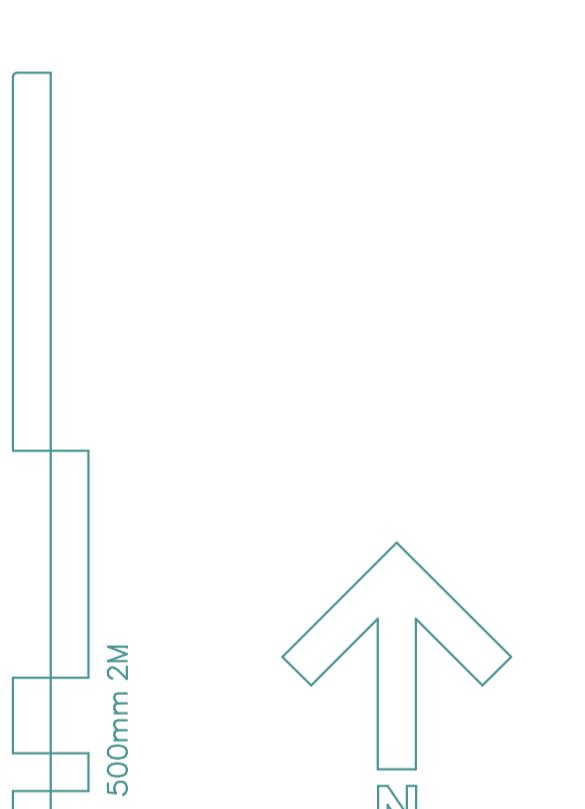
DRG. No.	3248-01	REV.
SCALE	1:100	© Copyright 2021
DRN. BY	JDS	DATE Jan 21
CHECKED	PDN	DATE Jan 21

TOWERS ASSOCIATES  
Harefield Oil Terminal, Harvil Rd,  
Harefield, MIDDX, UB9 6JL  
FAX 01895 814664  
TEL 01895 812822

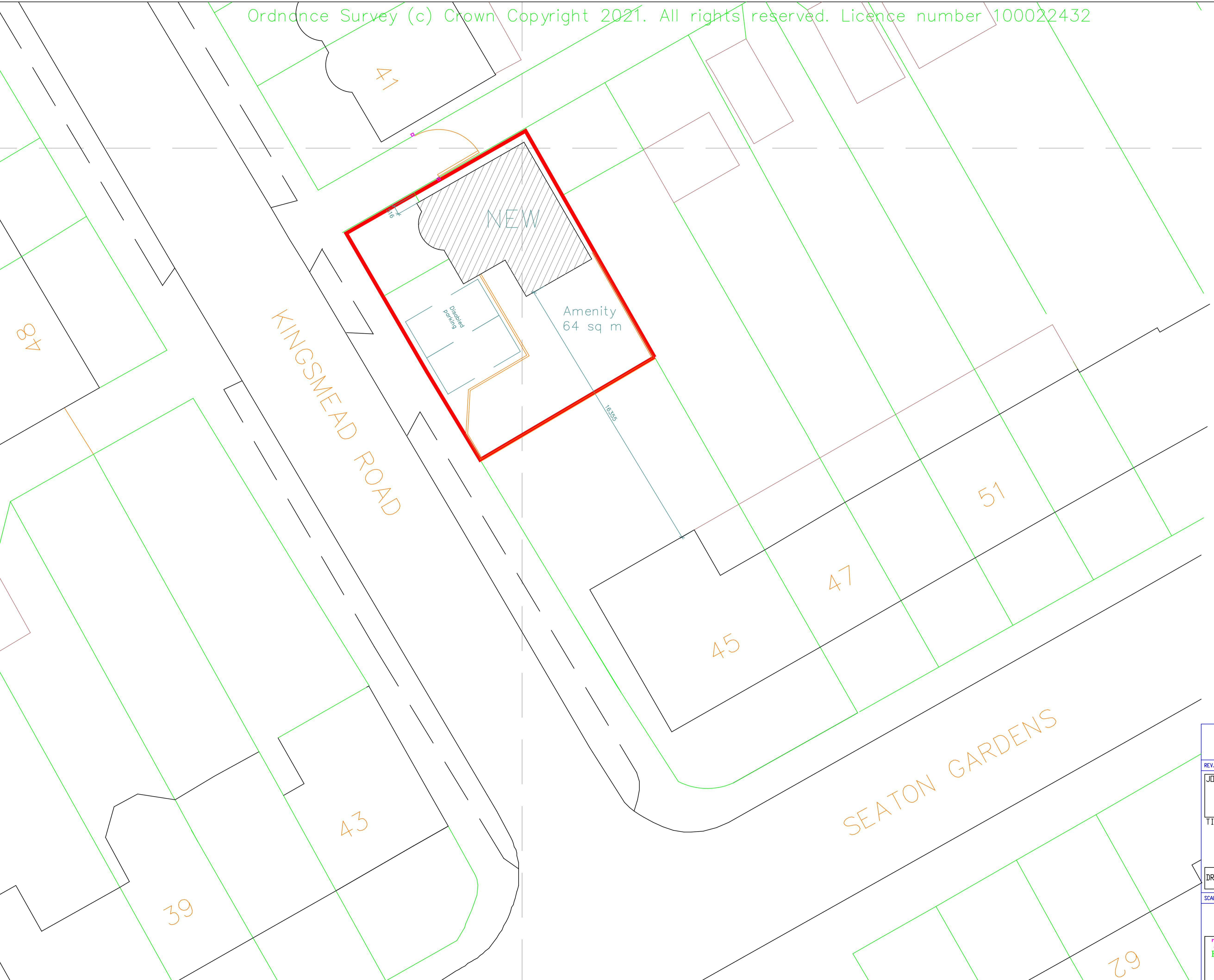


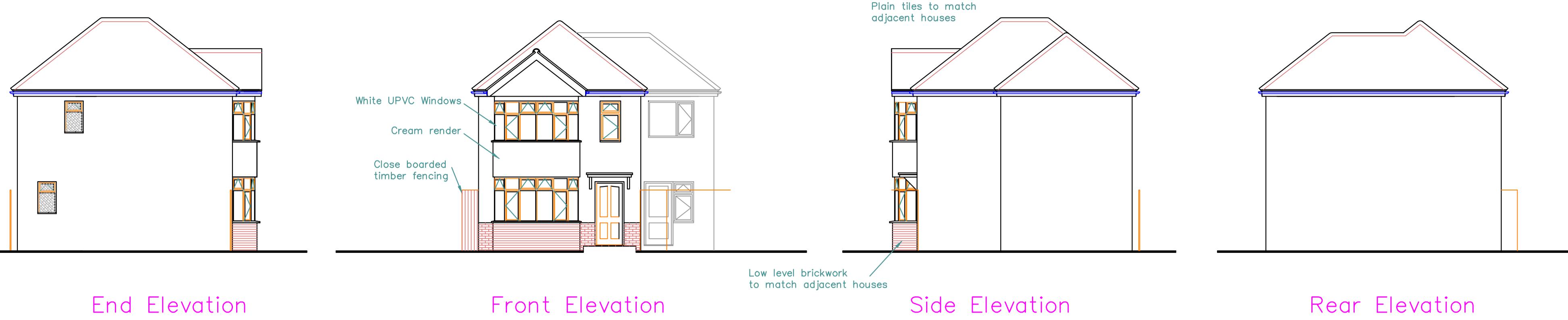
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REV.	DATE	DESCRIPTION
JOB Land to the rear of 45 Seaton Gardens Ruislip HA5 0BB		
TITLE Proposed Block plan		
DRG. No. 3248-02 REV.		
SCALE 1:100 © Copyright 2021 DRN. BY JDS		
DATE Jan 21 CHECKED PDN		
DATE Jan 21		
TOWERS ASSOCIATES Harefield Oil Terminal, Harvil Rd, Harefield, MIDDX, UB9 6JL FAX. 01895 814664 TEL. 01895 812822		





## End Elevation

## Front Elevation

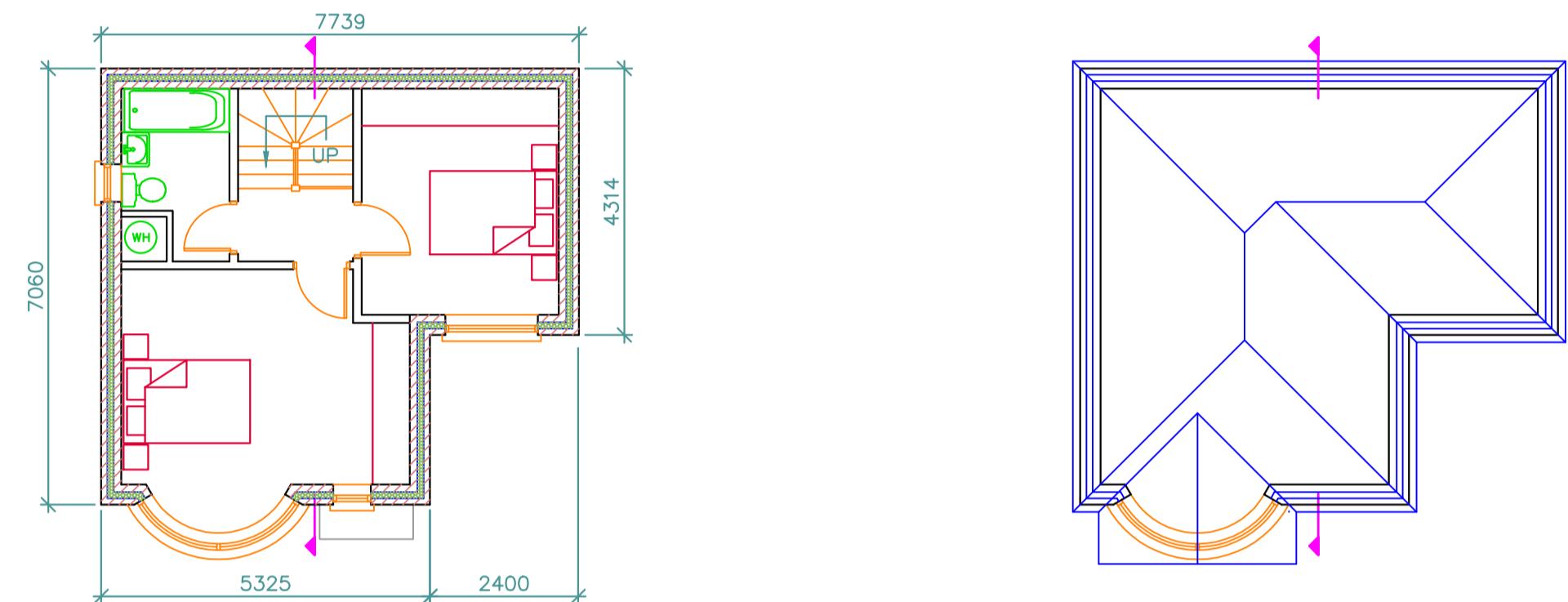
## Side Elevation

## Rear Elevation

## Section

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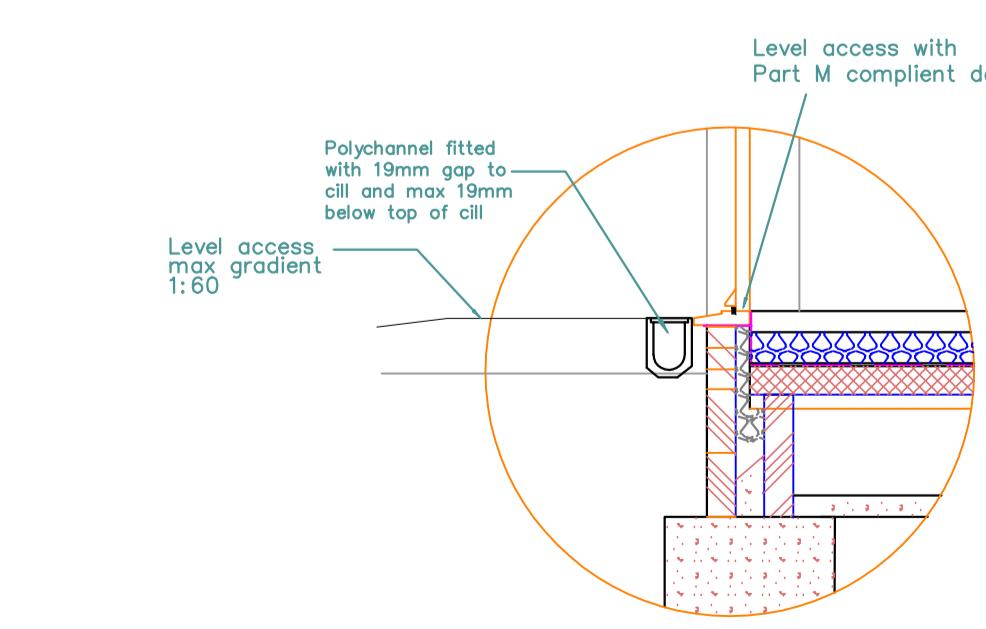
The diagram illustrates a bin store with the following dimensions and features:

- Overall height:** 1600 mm (indicated on the right).
- Overall width:** 1800 mm (indicated at the top).
- Storage:** The store contains two compartments: one labeled "Bln" (General Waste) and one labeled "Recycle".
- Access:** Orange arrows at the bottom indicate the entrance to the store.
- External features:** The store has a black base and vertical red and white striped panels on the sides.

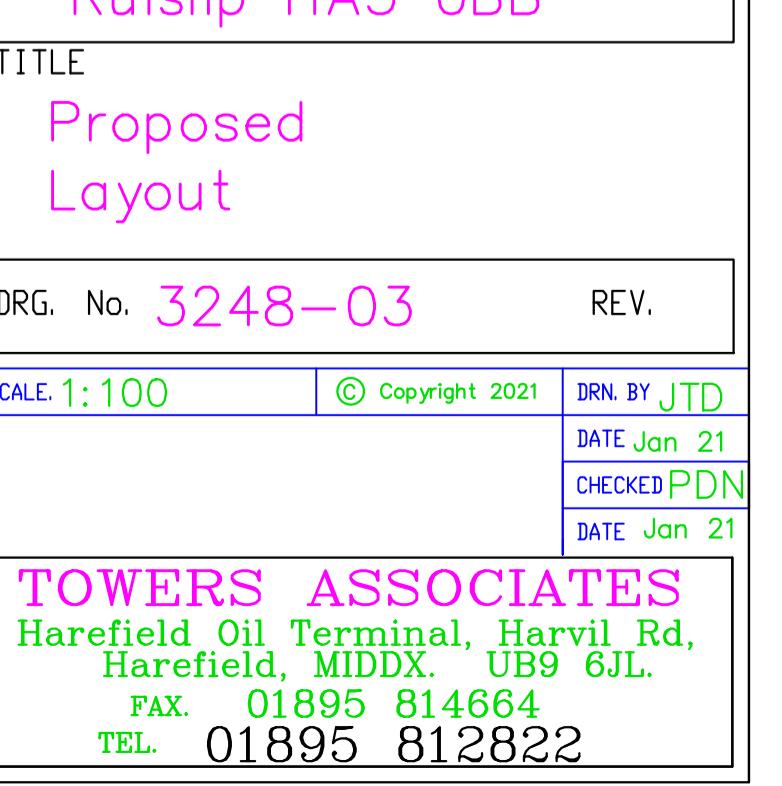
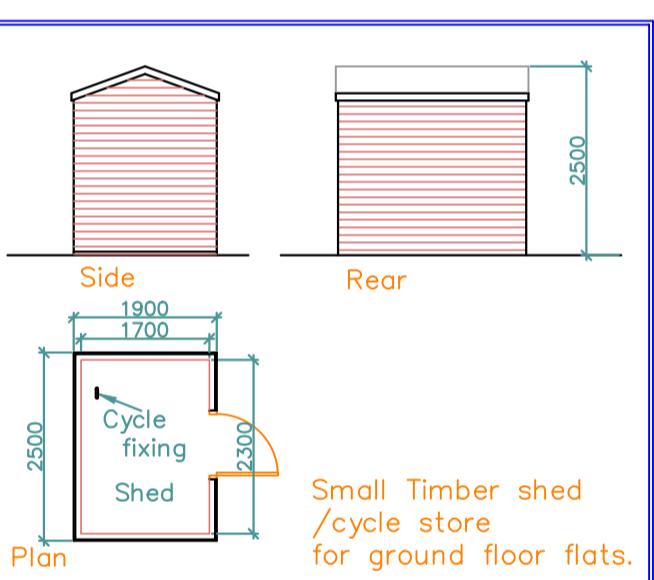


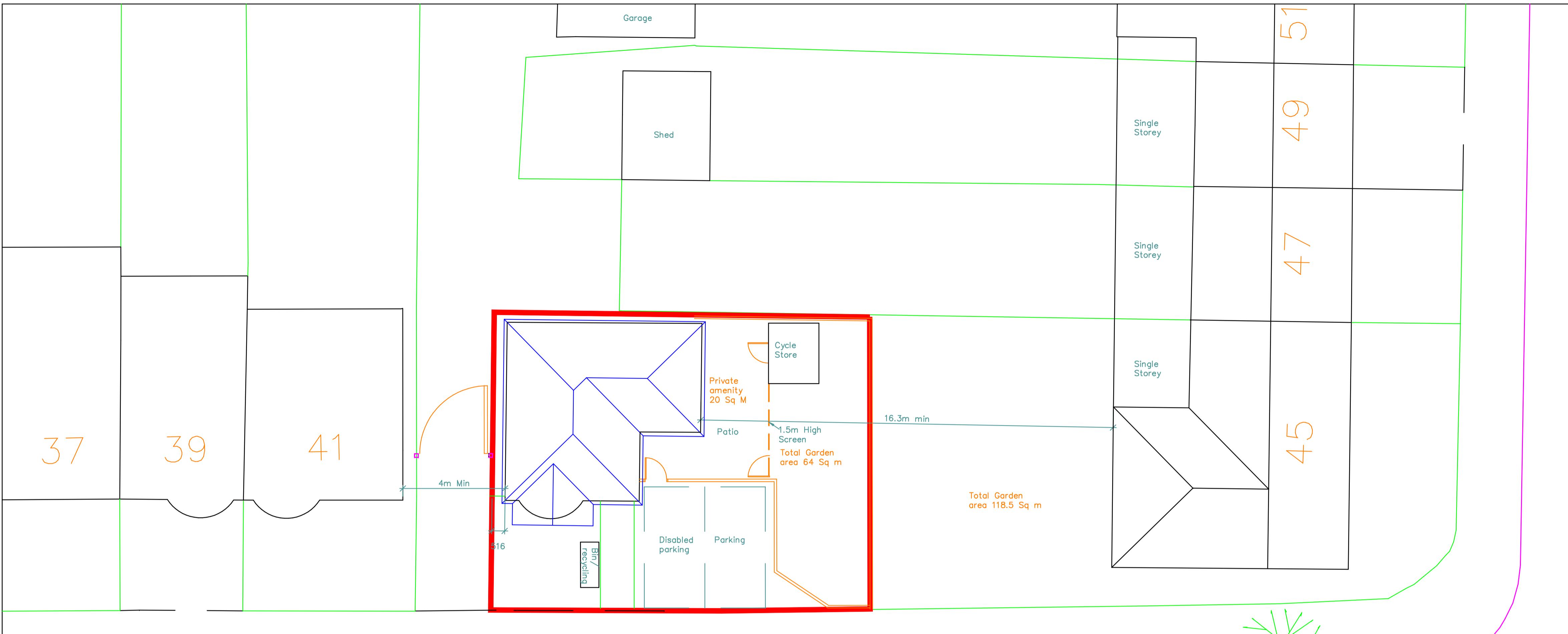
# KINGSMEAD ROAD

## First Floor Plan

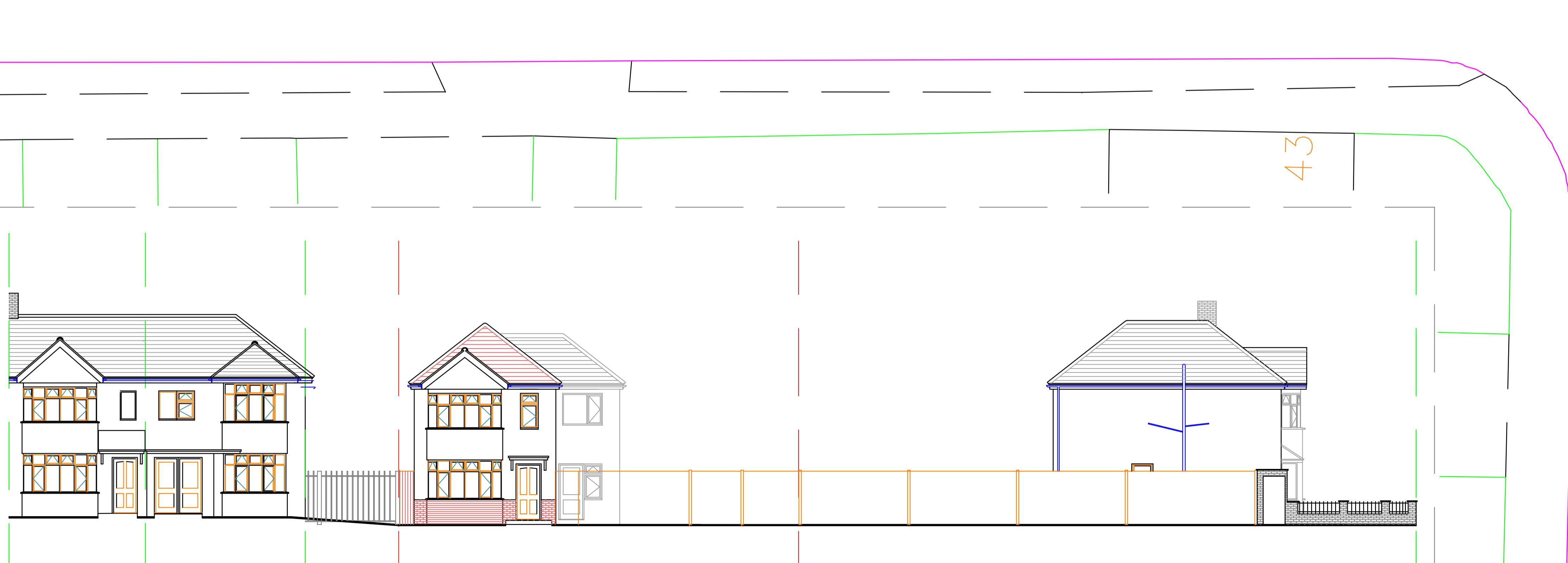


FRONT ENTRANCE SECTION  
SCALE : NTS





KINGSWEAR ROAD

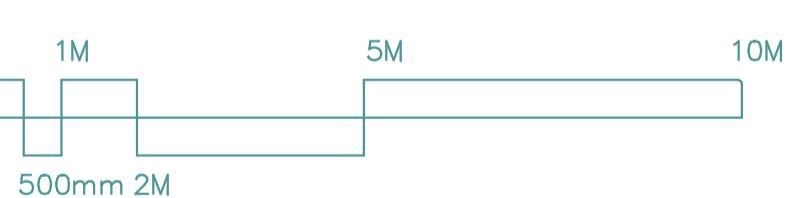


Side Elevation 45 Seaton Gardens

STREET SCENE KINGSWEAR ROAD

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REV.	DATE	DESCRIPTION
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JOB Land to the rear of  
45 Seaton Gardens  
Ruislip HA5 0BB

TITLE  
Proposed Site Layout  
Street Scene

DRG. No. 3248-SS-02 REV.

SCALE 1:100 © Copyright 2021 DRN. BY JV

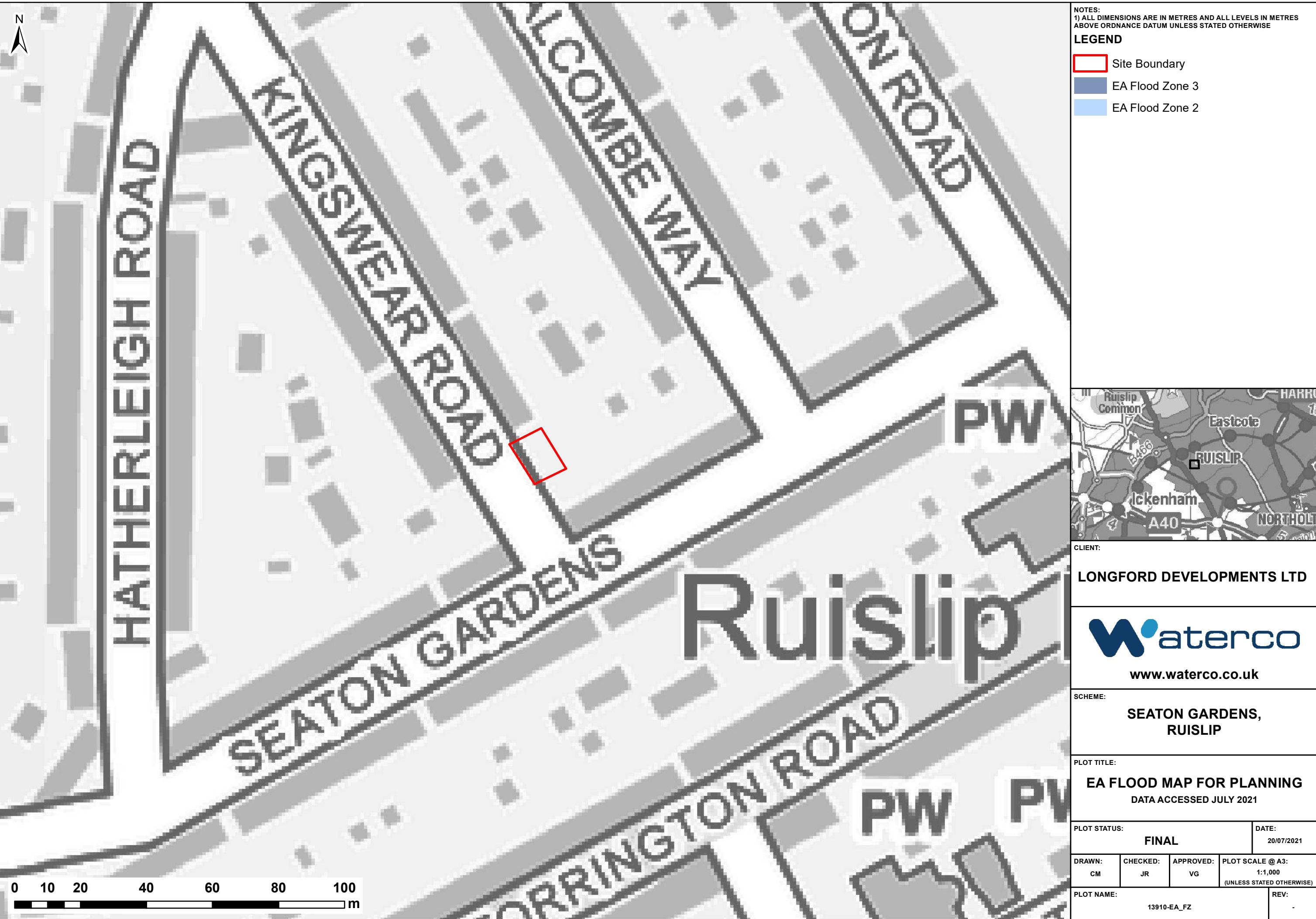
DATE Mar 21

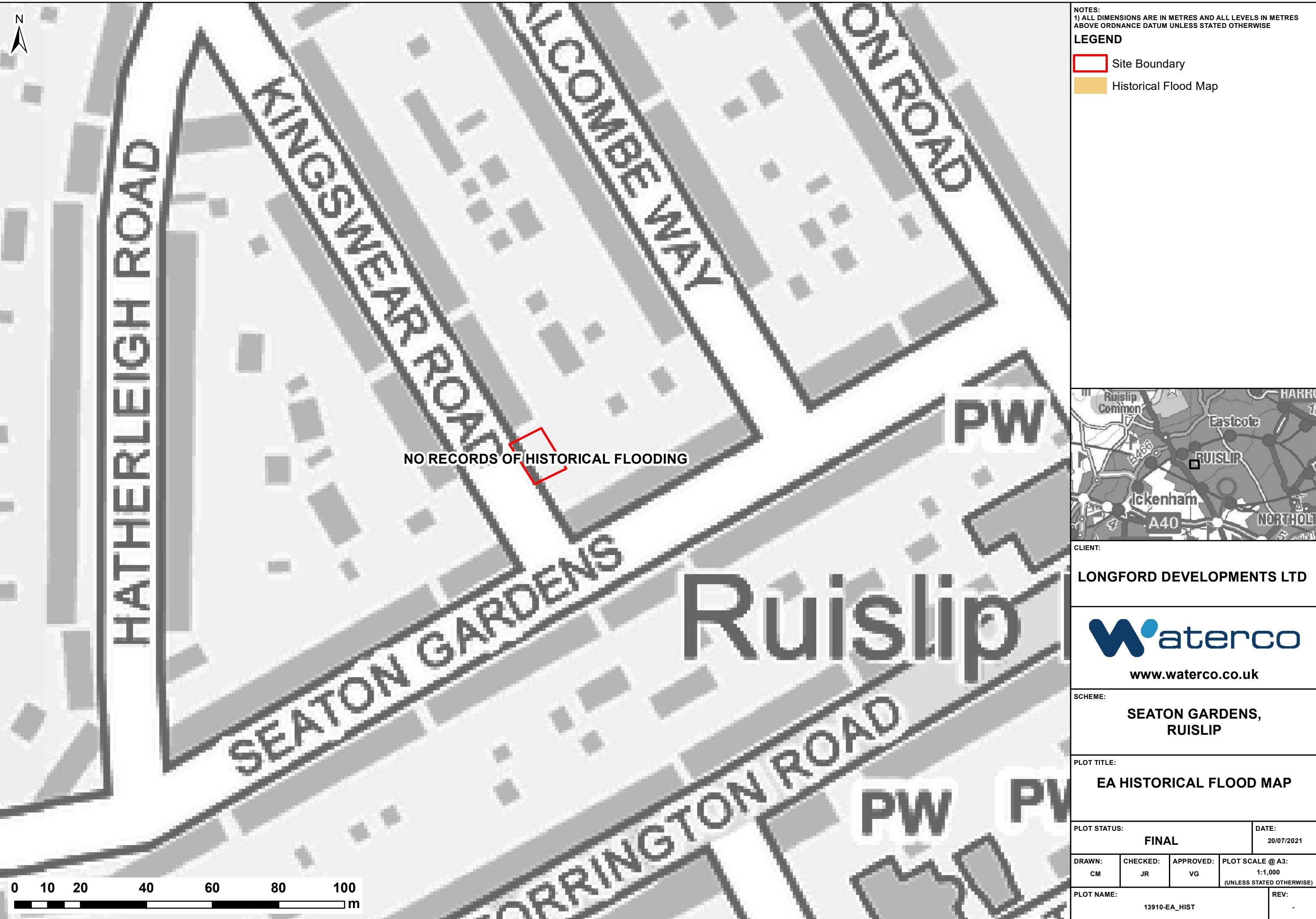
CHECKED P.D.N

DATE Mar 21

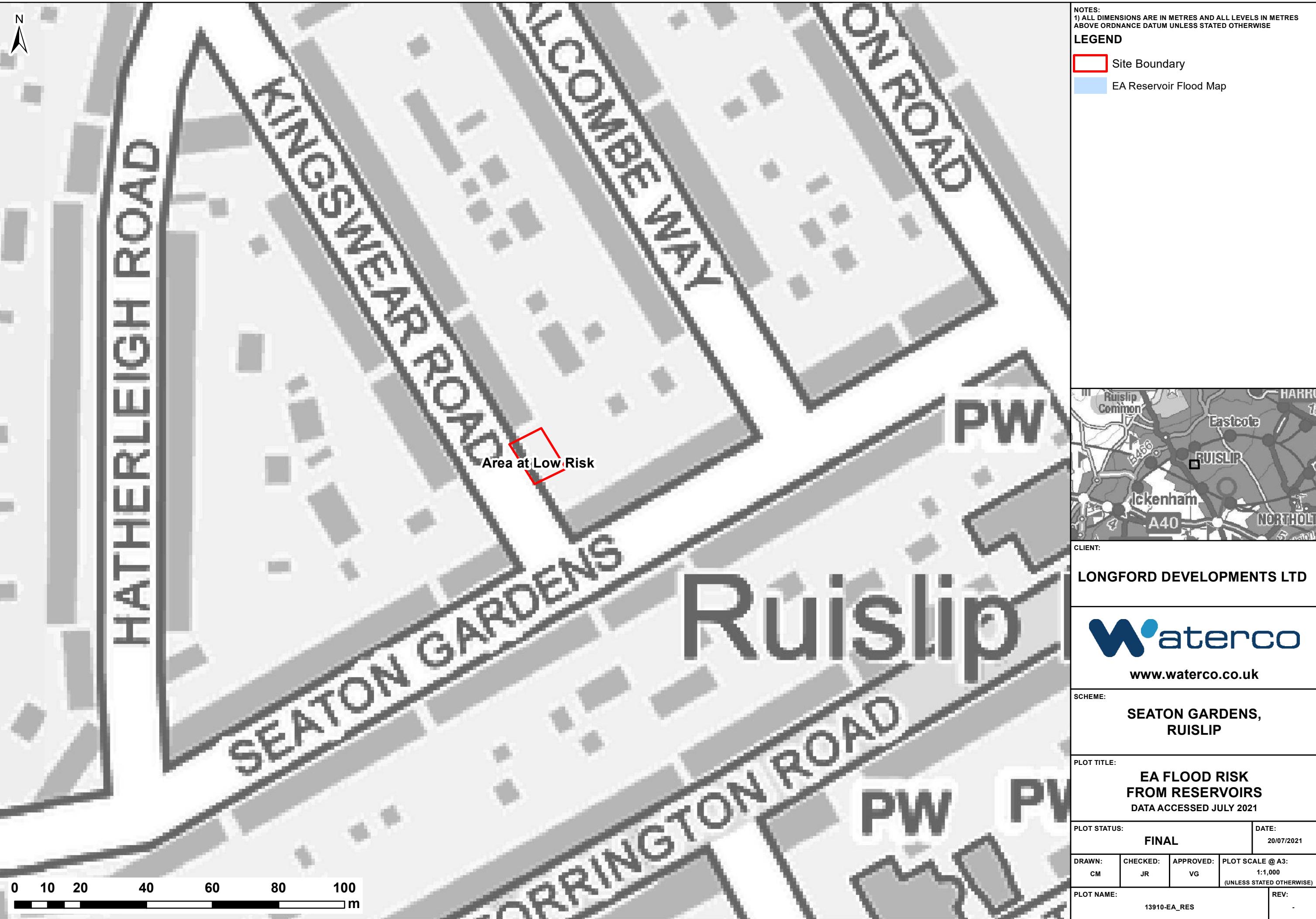
TOWERS ASSOCIATES  
Harefield Oil Terminal, Harvil Rd,  
Harefield, MIDDX, UB9 6JL  
FAX. 01895 814664  
TEL. 01895 812822

## Appendix D EA Flood Maps









## Appendix E    Thames Water Sewer Plan

# Asset location search



Property Searches

Waterco Ltd

RUTHIN  
LL15 1NJ

**Search address supplied**

Kingswear Road  
Ruislip  
HA4 6AY

**Your reference**

13910

**Our reference**

ALS/ALS Standard/2021\_4459566

**Search date**

1 July 2021

## Knowledge of features below the surface is essential for every development

The benefits of this knowledge not only include ensuring due diligence and avoiding risk, but also being able to ascertain the feasibility of any development.

Did you know that Thames Water Property Searches can also provide a variety of utility searches including a more comprehensive view of utility providers' assets (across up to 35-45 different providers), as well as more focused searches relating to specific major utility companies such as National Grid (gas and electric).

Contact us to find out more.



Thames Water Utilities Ltd  
Property Searches, PO Box 3189, Slough SL1 4WW  
DX 151280 Slough 13



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



0800 009 4540

# Asset location search



## Property Searches

**Search address supplied:** Kingswear Road, Ruislip, HA4 6AY

Dear Sir / Madam

**An Asset Location Search is recommended when undertaking a site development.** It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

### Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0800 009 4540, or use the address below:

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

Email: [searches@thameswater.co.uk](mailto:searches@thameswater.co.uk)

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

# Asset location search



## Property Searches

### Waste Water Services

**Please provide a copy extract from the public sewer map.**

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

### For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

### Clean Water Services

**Please provide a copy extract from the public water main map.**

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd  
Tamblin Way  
Hatfield  
AL10 9EZ  
Tel: 0345 3572401

# Asset location search



# Property Searches

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

## Payment for this Search

A charge will be added to your suppliers account.

# Asset location search



# Property Searches

## Further contacts:

### Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)  
Thames Water  
Clearwater Court  
Vastern Road  
Reading  
RG1 8DB

Tel: 0800 009 3921  
Email: [developer.services@thameswater.co.uk](mailto:developer.services@thameswater.co.uk)

### Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)  
Thames Water  
Clearwater Court  
Vastern Road  
Reading  
RG1 8DB

Tel: 0800 009 3921  
Email: [developer.services@thameswater.co.uk](mailto:developer.services@thameswater.co.uk)

Asset Location Search Sewer Map - ALS/ALS Standard/2021\_4459566



&lt;div The width of the displayed area is 200 m and the centre of the map is located at OS coordinates 510147,186595.

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.

&lt;div Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

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
161A	n/a	n/a
161J	n/a	n/a
1602	40.81	39.56
161L	n/a	n/a
161M	n/a	n/a
161N	n/a	n/a
161O	n/a	n/a
161P	n/a	n/a
1603	40.73	39.21
151A	n/a	n/a
161B	n/a	n/a
161K	n/a	n/a
261D	n/a	n/a
2501	40.05	39.09
1604	40.43	38.87
1601	40.45	39.17
161H	n/a	n/a
061J	n/a	n/a
061I	n/a	n/a
161G	n/a	n/a
161F	n/a	n/a
161E	n/a	n/a
161I	n/a	n/a
0603	41.38	39.54
161D	n/a	n/a
0602	41.38	39.61
061F	n/a	n/a
061E	n/a	n/a
061D	n/a	n/a
0503	39.34	37.36
151D	n/a	n/a
1501	39.51	38.71
1502	39.66	38.3
151C	n/a	n/a
151B	n/a	n/a
2505	40.18	38.78

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## ALS Sewer Map Key

### Public Sewer Types (Operated & Maintained by Thames Water)

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

### Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

### Sewer Fittings

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

	Air Valve
	Dam Chase
	Fitting
	Meter
	Vent Column

### Operational Controls

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

	Control Valve
	Drop Pipe
	Ancillary
	Weir

### End Items

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

	Outfall
	Undefined End
	Inlet

### Other Symbols

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

	Public/Private Pumping Station
	Change of characteristic indicator (C.O.C.I.)
	Invert Level
	Summit

### Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

### Other Sewer Types (Not Operated or Maintained by Thames Water)

	Foul Sewer		Surface Water Sewer
	Combined Sewer		Gully
	Culverted Watercourse		Proposed
	Abandoned Sewer		

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

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