Cole Easdon

Office: Swindon
Our Ref: BT/csp/9568lbh

14th November 2023

Residents Services
London Borough of Hillingdon
Civic Centre
High Street
Uxbridge
UB8 1UW

Dear Sirs,

Proposed Rear Extension, 80 Rodney Gardens, Pinner, HA5 2RP - Flood Risk Assessment

This Document has been prepared by Cole Easdon Consultants (CE) on behalf of Mr Robert Randall in respect of a planning application for a residential extension at the above address. Refer to Drawing No. RODG80 [*Proposed Site Plan*] (by KDB Building Designs) enclosed.

The purpose of this Document is to demonstrate that the development proposals can be satisfactorily accommodated without worsening flood risk for the area and without placing the development itself at risk of flooding, as per national guidance provided within the National Planning Policy Framework document (NPPF).

Development Proposals

The proposed development comprises the construction of a single storey part rear extension measuring 12.00m^2. Refer to enclosed Drawing No RODG80 [*Proposed Site Plan*] and Drawing No. PL-01-A [*Existing & Proposed Floor Plans, Elevations and Site & Block Plan]* (by KDB Building Designs).

The Existing Site

The site is an existing detached bungalow with an attic floor, a rear terrace and front access/parking area, and rear patio and garden. The site covers an area of approximately 500m^2.

Existing Topography

The local topography is relatively flat. Ordnance Survey mapping indicates that existing ground levels at the site vary from 47mAOD adjacent to Rodney Gardens, to 46mAOD at the northern boundary of the rear garden.

The rear terrace is set some 1.34m above existing ground level within the rear garden. Existing internal ground floor levels are 0.28m above the existing rear terrace. Therefore, existing internal ground floor levels are some 1.62m above the garden and patio area. Refer to Drawing RODG80-PL-01-A and image 1 below.

Nearby Watercourses/Drainage Features

The River Pinn, a Main River and a tributary of the Fray's River and the River Colne flows in a westerly direction at the site's northern boundary, approximately 30m north of the existing bungalow.

Existing Drainage

It is assumed that public foul and surface water public sewers are located within the Rodney Gardens highway.

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Image 1: Photo showing rear of 80 Rodney Gardens

Existing Ground Conditions

British Geological Survey (BGS) mapping indicates that the site is underlain by bedrock strata of the Lambeth Group, comprising clay, silt and sand. Alluvium containing clay, silt sand and gravel is present in the vicinity of the River Pinn. Refer to Figures 1 and 2 below.

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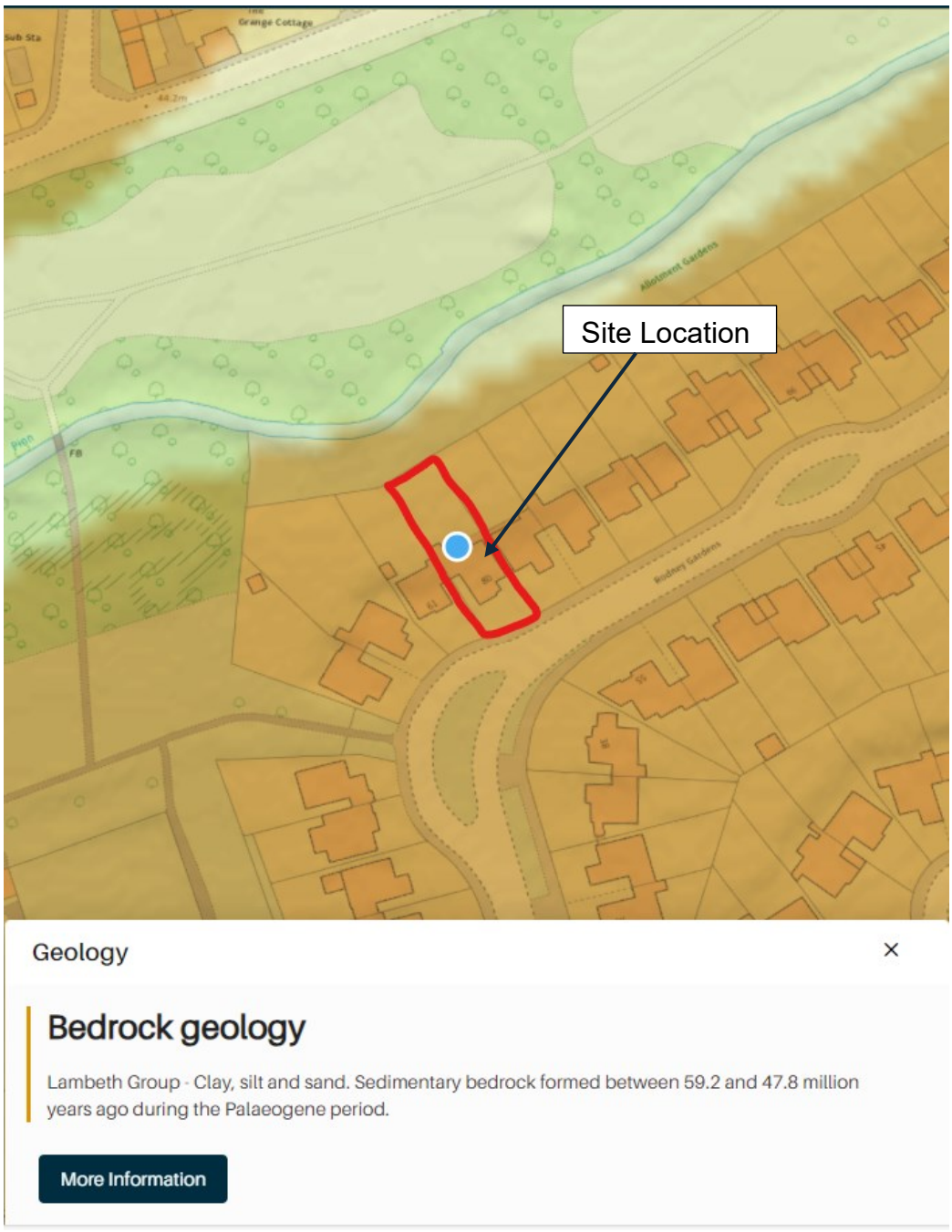

Figure 1: Bedrock Geology Map (Extract from British Geological Survey Geoindex)
Source: Geology of Britain viewer - British Geological Survey (bgs.ac.uk)

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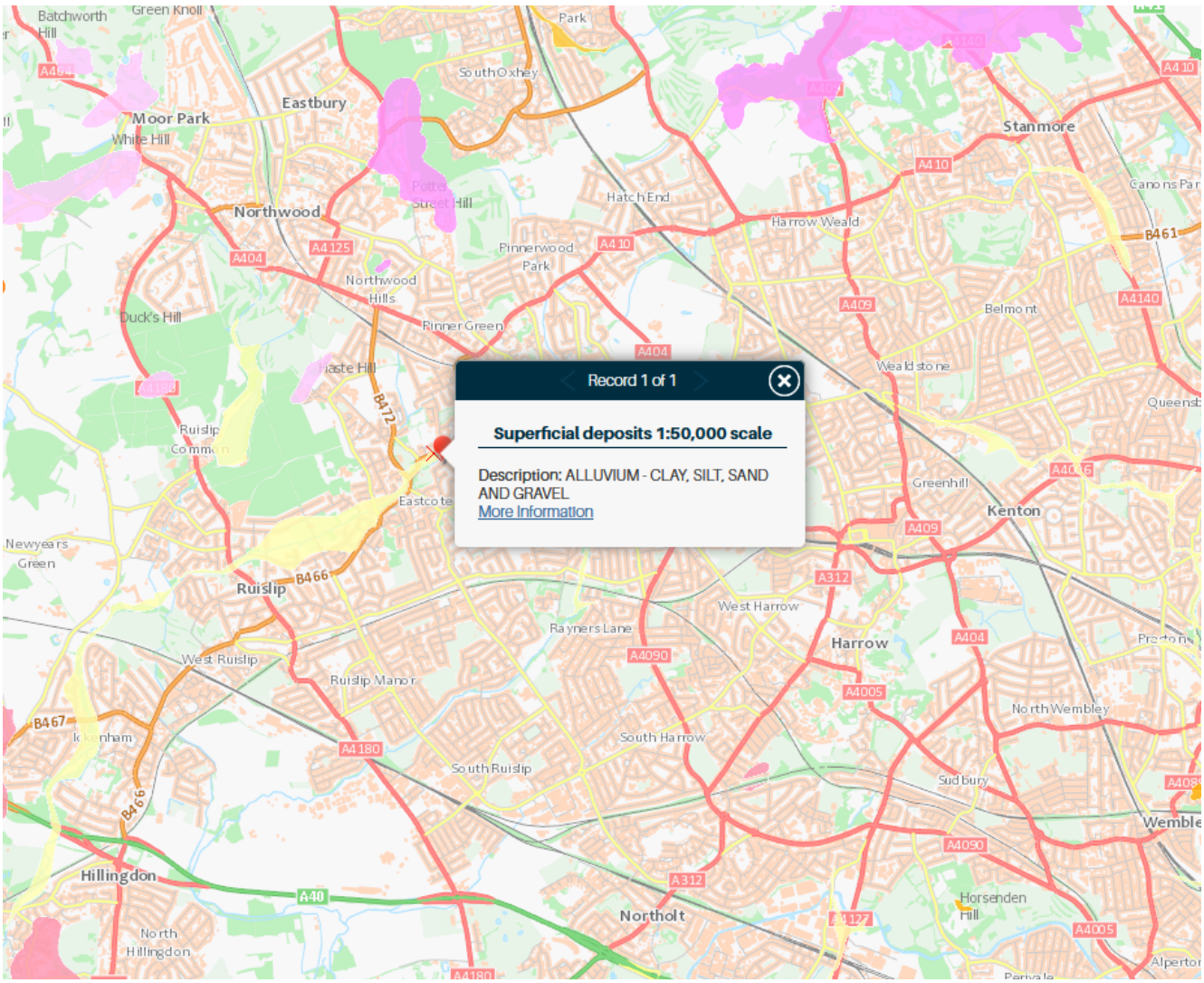

Figure 2: Superficial Geology Map (Extract from British Geological Survey Geoindex)
Source: https://mapapps.bgs.ac.uk/geologyofbritain/home.html

Flood Risk Issues

Assessment of Flood Risk from Fluvial/Tidal Sources

The Flood Map for planning (FMP) for the locality as produced by the Environment Agency (EA) indicates that the site encroaches upon the floodplain associated with the River Pinn. According to the FMP the rear garden is wholly within Flood Zone 3 (High Risk) and Flood Zone2 (Medium Risk) The floodplain appears to extend across the garden as far as the existing rear terrace, which is set 1.34m above the garden, and as such defines the southern edge of the floodplain. Refer to Figure 3, below.

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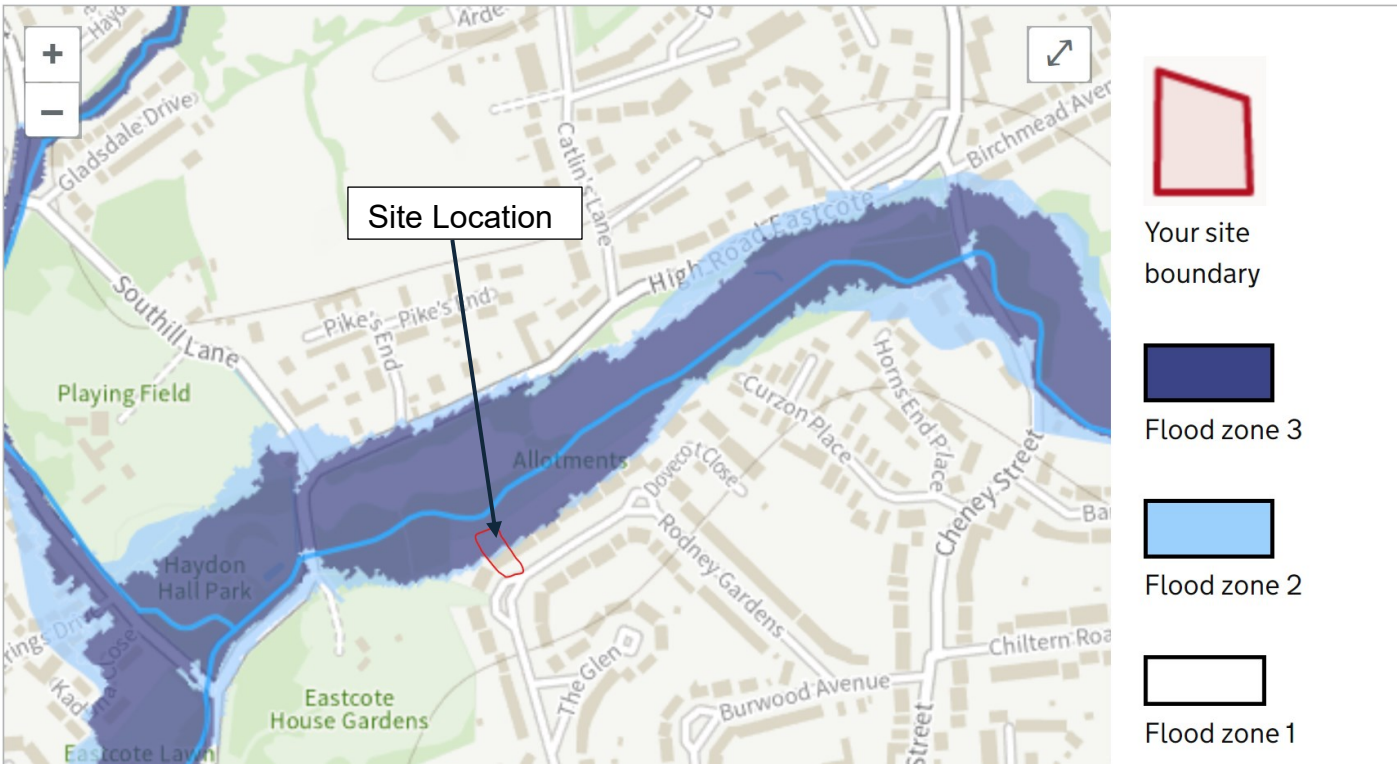

Figure 3: Extract from Central Government's 'Flood Map for Planning' Mapping Portal
Source: https://flood-map-for-planning.service.gov.uk/

The existing bungalow, and the front access/parking area fall within Flood Zone 1 (Low Risk). The land to the south of the site, including the Rodney Gardens highway and Eastcoate and Ruislip, is also within Flood Zone 1 (Low Risk).

In accordance with Environment Agency Standing Advice for Minor Extensions (area <250m^2), Finished Floor Level (FFL) within the extension will be set at the existing ground floor level within the property, which is 1.62m above the rear garden, and which, according the FMP is within Flood Zone 1 (Low Risk). This will protect the proposed extension from internal property flooding.
Refer to Image 1 below and to Drawing No. RODG80-PL-01-A [*Existing & Proposed Floor Plans, Elevations and Site Plan & Block Plan*] (by KDB Building Designs).

The bungalow is accessed from Rodney Gardens, at the site frontage. Based on the FMP, only the rear garden and is situated within flood plain. The proposed extension would therefore remain accessible from the site frontage during flooding.

There will be no increase in the number of occupants at the site or in the intensity of site usage as a result of the proposals.

The proposed extension measures 12m^2. Approximately 8m^2 of this area would be situated on the existing terrace, with the remaining 4m^2 above the existing patio, which is approximately level with the existing garden and therefore likely to be within the floodplain. Part of the extension floor sub structure (4m^2) may therefore displace water during flooding, however as the encroachment into the floodplain is minimal, the effect upon local flood risk would be negligible in this instance.

Fluvial flood risk to the proposed development is therefore considered to be low, and as such no mitigation is required

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Assessment of Flood Risk from Surface Water/Overland Flow

The EA Surface Water Flood Map (SWFM), reproduced as Figure 4, below, indicates that during the worst case 'Low Risk' scenario, the rear garden and front access would be subject to flooding to a depth of between 300mm and 900mm.

According to the mapping, the Rodney Gardens highway adjacent to the site would also be flooded to between 300mm and 900mm.

As discussed in relation to Fluvial flooding, the proposed development will tie in with existing ground floor levels which are raised some 1.62m above existing ground levels, therefore will not be vulnerable to flooding of 300mm to 900mm in depth.

Based on the SWFM, dry access to the bungalow may not be feasible during a surface water flood event, however as the vulnerability classification of the site usage and its intensity of use will not change due to the proposals, there will be no increase in flood risk to site users. In addition, a first floor refuge is available.

Surface water flood risk to the proposed development is therefore considered to be low, and no mitigation is required.

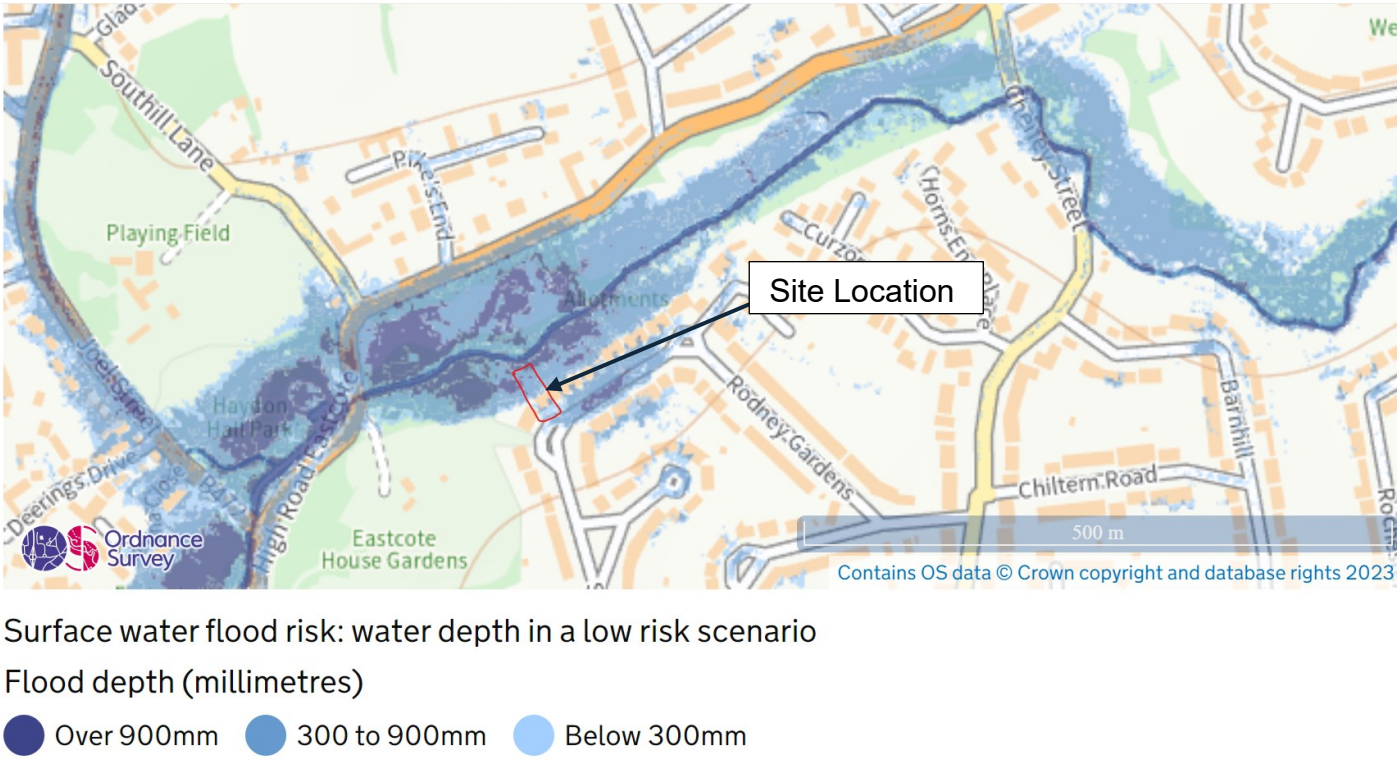

Figure 4: Extract from Central Government's 'Flood Map for Planning' Mapping Portal
Source: https://flood-map-for-planning.service.gov.uk/

Assessment of Flood Risk from Groundwater

Mapping within the online West London Strategic Flood Risk Assessment indicates that the risk of groundwater emergence in the locality is low (<25%). Refer to Figure 5 below. In any case, the proposed development will be situated well above the existing ground levels by some 1.62m, and therefore will not be subject to flooding from this source.

Flood risk from this source is therefore considered to be low, and no mitigation is required.

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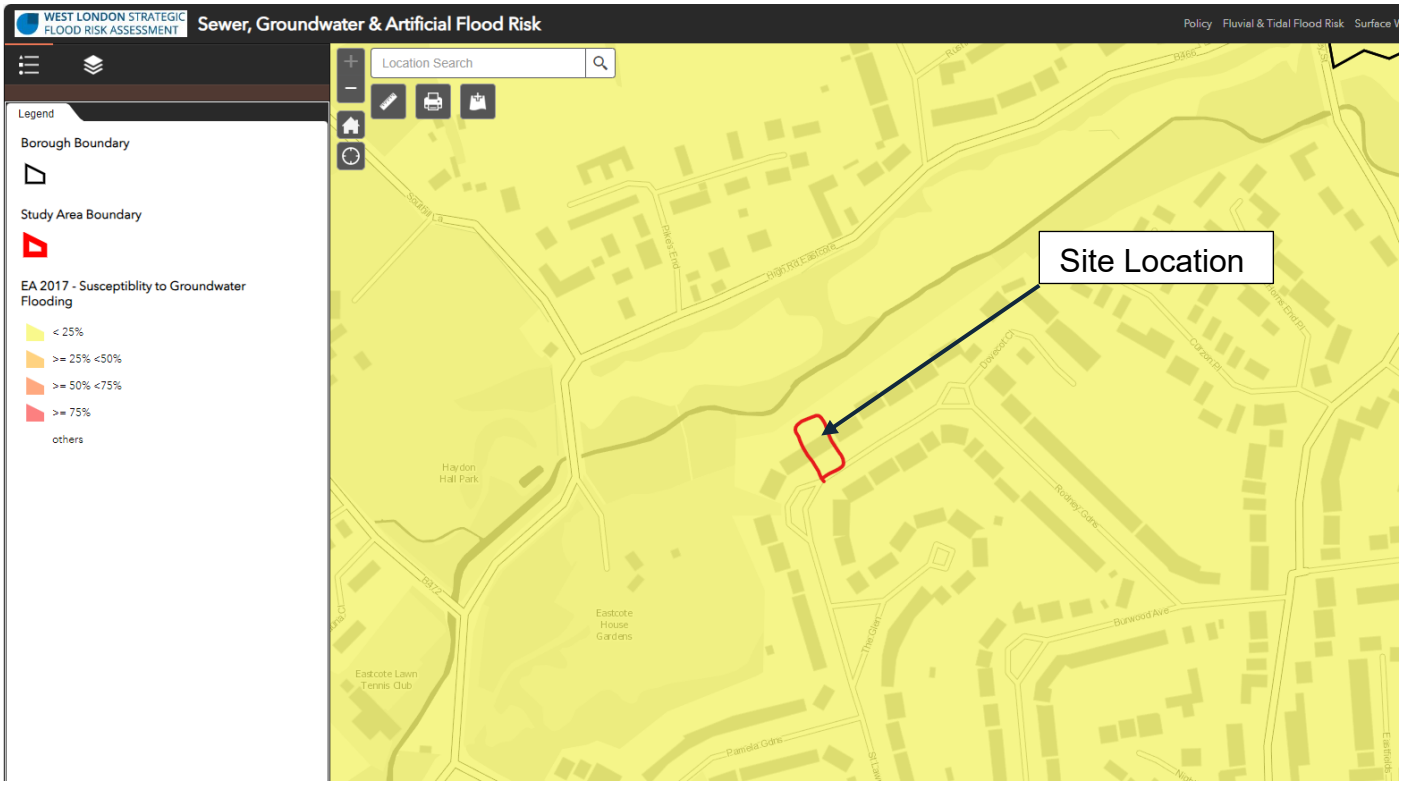

Figure 5: Extract from the West London Strategic Flood Risk Assessment
Source : https://westlondonsfra.london/mapping-tool/

Assessment of Flood Risk from Existing Sewers

Should the existing sewers in Rodney Gardens surcharge and flood, floodwaters are expected to be contained within the existing highway corridor, or follow the existing site topography, and flow into the River Pinn via the lower lying rear garden, without accumulating in the vicinity of the proposed extension, which will be 1.62m above the garden.

Mitigation is not required.

Assessment of Flood Risk from Reservoirs

EA mapping shows that the site is within an area potentially at risk of flooding from Reservoir flooding should it occur in conjunction with fluvial flooding. Refer to Figure 6 below. In reality the risk of flooding from this source is low, as reservoirs are maintained in accordance with the Reservoirs Act and, as such, are unlikely to fail.

No mitigation is required.

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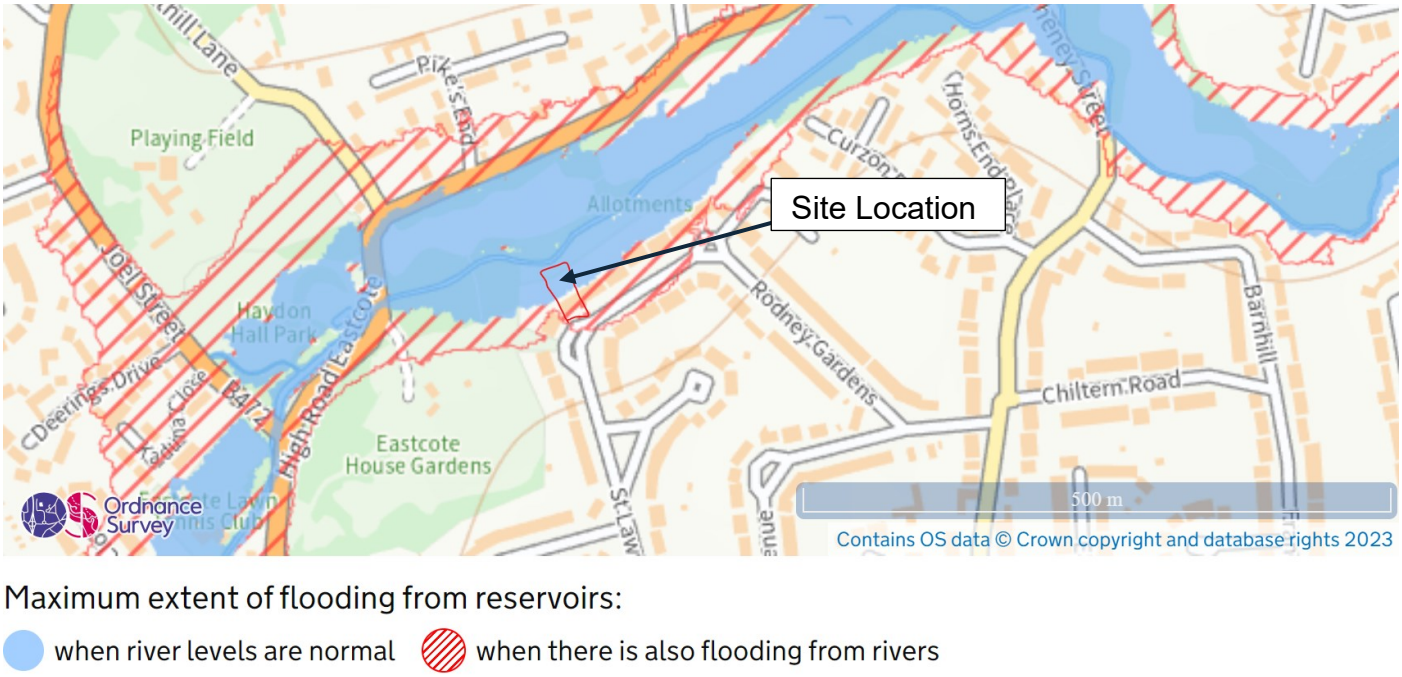

Figure 6: Extract from Central Government's 'Flood Map for Planning' Mapping Portal
Source: https://flood-map-for-planning.service.gov.uk/

Management of Surface Water Runoff

The proposed extension footprint will be within an existing impermeable area comprising the existing rear terrace and patio, hence there will be no increase in the impermeable area and no resulting increase in surface water runoff from the site. Surface water runoff will therefore continue to drain via the existing private drainage system.

Conclusions

Flood risk to the proposed development from various sources, including rivers, sewers, groundwater and overland flow has been considered in this study.

The rear garden encroaches upon Fluvial Flood Zones 2 (Medium Risk) and 3 (High Risk) associated with the River Pinn, while the existing bungalow and rear terrace are within Flood Zone 1 (Low Risk). In accordance with EA standing advice for Minor Extensions, proposed FFL will be set at the bungalow's existing ground floor level. This places the proposed extension within Flood Zone 1, some 1.62m above existing ground level within the rear garden, which will mitigate any risk of fluvial flooding .

The proposed FFL will also mitigate against surface water flooding, which according to EA mapping would attain a depth of 300mm – 900mm.

There will be no increase in the flood risk vulnerability classification of the proposed extension, as the current residential use class will be retained.

There will be no increase in the number of bedrooms at the site, and hence no increase in the number occupants at the site or the intensity of site usage.

There will be no increase in the impermeable catchment area at the site as a result of the extension, therefore the existing surface water drainage systems can be retained, and additional SuDS are not required.

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This study has been undertaken in accordance with the principles set out in the NPPF. We can conclude that the development proposals can be accommodated without increasing flood risk within the locality in accordance with objectives set by Central Government and the EA.

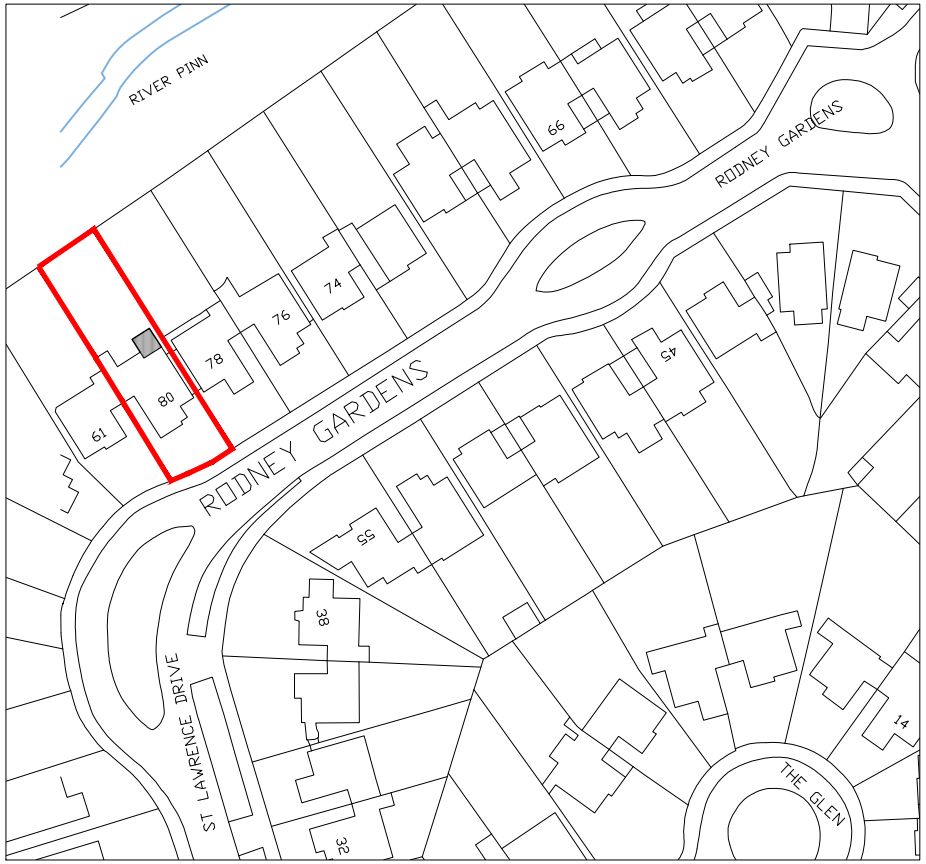
Yours sincerely

Benjamin ThorntonBSc (Hons)
Flood Risk and DrainageEngineer
BThornton@coleeasdon.com

Enc:
Drawing No. RODG80 Proposed Site Plan (by KDB Building Designs)
Drawing No. PL-01-A Existing & Proposed Floor Plans, Elevations and Site & Block Plan (by KDB Building Designs)

Enclosures

SITE PLAN: 80 RODNEY GARDENS, PINNER, HA5 2RP



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Rev.	Date	Comment

0 10 20 30 40 50 60

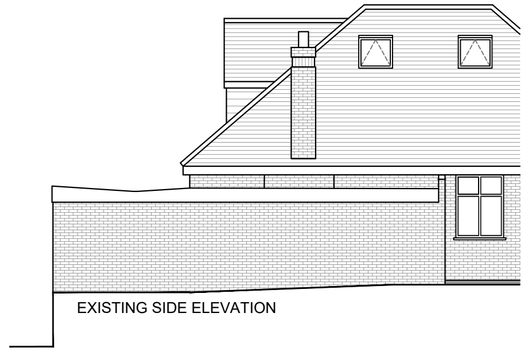
Site Address: 80 RODNEY GARDENS, PINNER, HA5 2RP

Scale: 1:1250 @ A4

Job No:	Drawing No:	Rev:
RODG80	**PROPOSED SITE PLAN**	

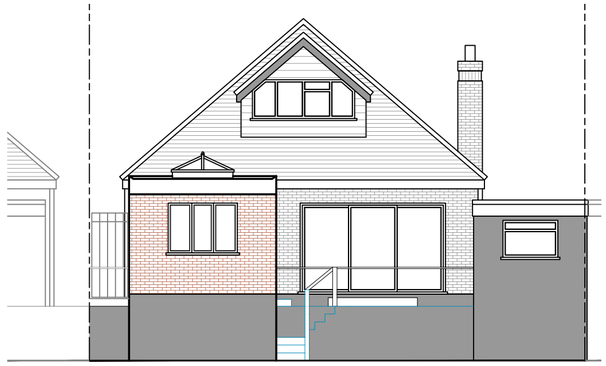
EXISTING SIDE ELEVATION

EXISTING REAR ELEVATION

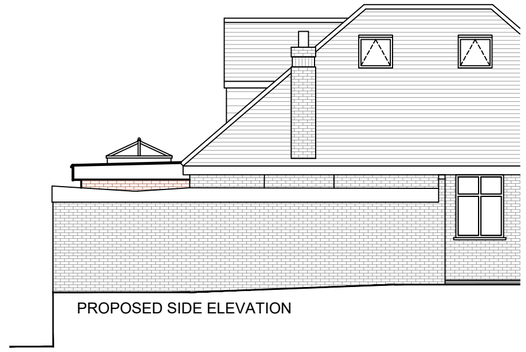


EXISTING SIDE ELEVATION

PROPOSED SIDE ELEVATION



PROPOSED REAR ELEVATION



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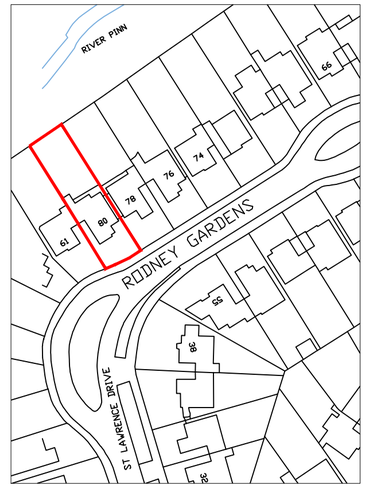
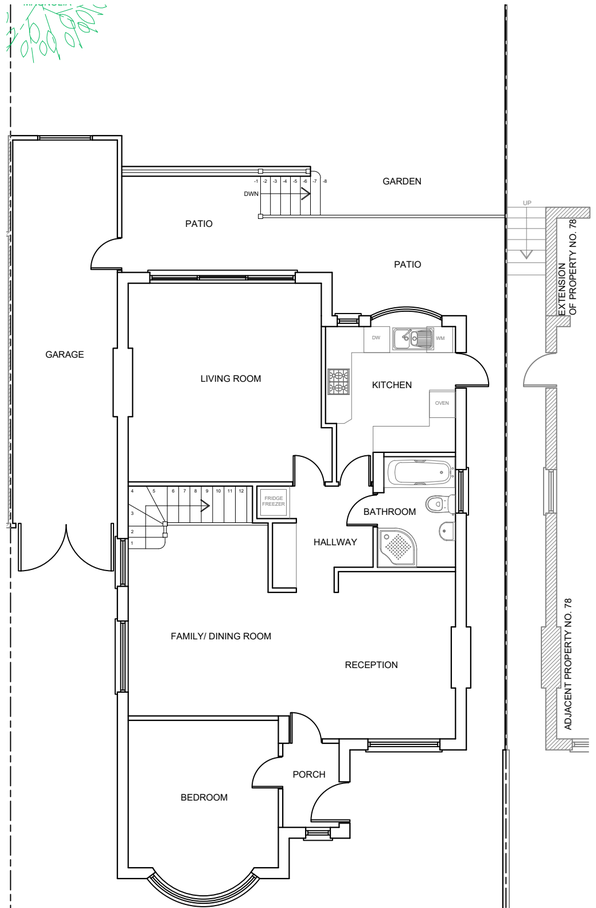
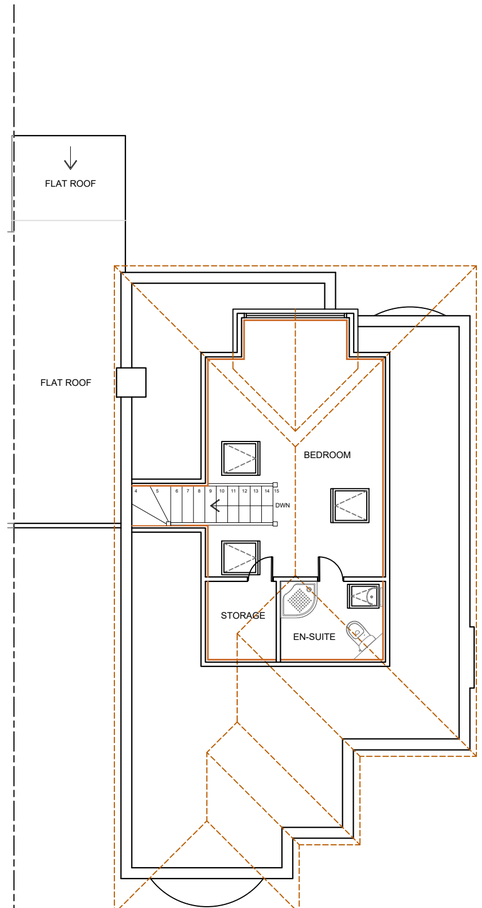


SITE PLAN (1:1250)

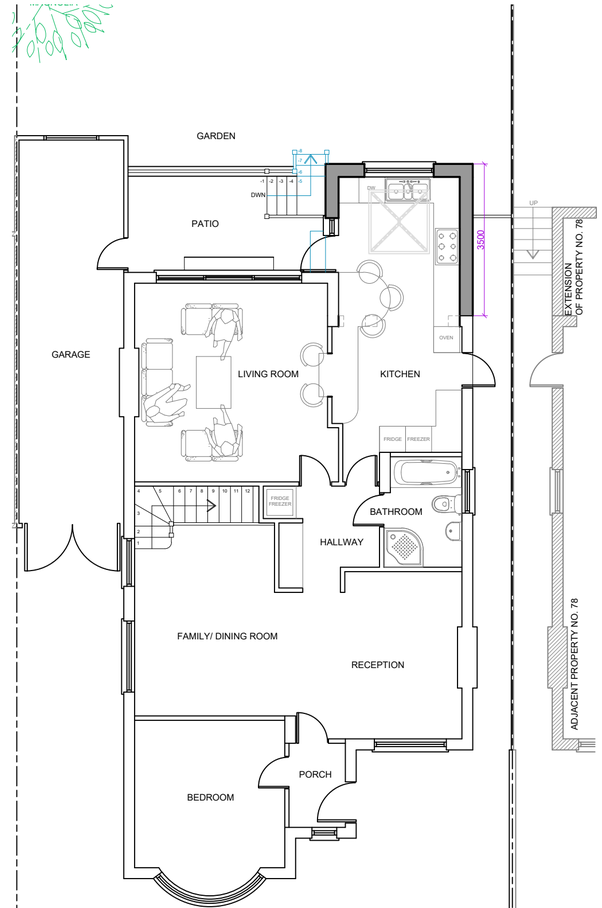
BLOCK PLAN (1:500)



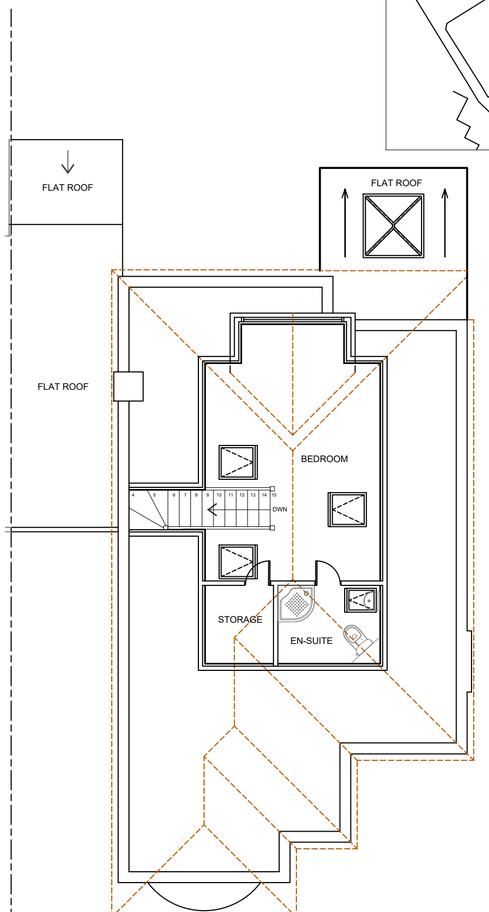
EXISTING GROUND FLOOR PLAN



EXISTING LOFT FLOOR PLAN



PROPOSED GROUND FLOOR PLAN



PROPOSED LOFT FLOOR PLAN

Rev.	Date	Comment
A.	06.11.2023	Ground levels added to elevations.

(1:50) 1m 2m

(1:100) 1m 2m 3m 4m 5m

kdb building designs
Chartered Architectural Technologist
020 3875 2000
plans@kdbdesigns.co.uk
www.kdbdesigns.co.uk

Client: MR R RENDALL

Site Address: 80 RODNEY GARDENS
PINNER
HA5 2RP

Project Title: SINGLE STOREY PART REAR EXTENSION

Status: PLANNING

Drawn:	Checked:
ND	JW
Date:	Scale:
09.08.2023	1:100 @ A2

Drawing Title: EXISTING & PROPOSED FLOOR PLANS, ELEVATIONS AND SITE & BLOCK PLAN

Job No:	Drawing No:	Rev:
RODG80	PL - 01	A