FLOOD RISK ASSESSMENTS & DRAINAGE STRATEGIES

FLOOD RISK ASSESSMENT

205 Lordship lane SE22 8HB

Reference: 0182 - FRA- 001

Jan-21

www.rida-reports.co.uk

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Introduction 1

Purpose of this report

1.1 RIDA Reports Ltd has been appointed to undertake a Level 1 Flood Risk Assessment for a development located at SE22 8HB.

Objectives

1.2 The objectives of this FRA are to demostrate the following:

* Whether the proposed development is likely to be affected by current or future flooding.
* Whether the proposed development will increase flood risk elsewhere.
* Whether the flood risks associated with the proposed development can be satisfactorily managed.
* Whether the measures proposed to deal with the flood risk are sustainable.

Documents Consulted

1.3 To achieve these objectives the following documents have been consulted and/or referenced:

The National Planning Policy Framework (NPPF)
CIRIA C753 document The SuDS Manual, 2015
Local Flood Risk Management Strategy (LFRMS)
Level 1 Strategic Flood Risk Assessment (SFRA)
Aerial photographs and topographical survey of the site
British Geological Society Records
Council Surface Water Maps
Environment Agency flood maps
The CIRIA publication 'C635 Designing for exceedance in urban drainage— Good practice'

Site Development Assessment 2

Development Site and Location

2.1 The site is located at Lordship Lane, London. The nearest post code is SE22 8HB. Refer to appendix A for site location plan.

2.2 The current use of the site is an ancillary office space used for retail for the basement and ground floor area. The current use vulnerability clasification of the site is Water compatible. The site is located in the River Flood Zone 1. Refer to Appendix B for more details.

Development Proposals

2.3 The proposed development includes the provision of a new dwelling in the basement area and maintain the retail space on the ground floor. Refer to Appendix B for layout of the proposed development.

2.4 The vulnerability classification of the proposed development is More vulnerable with an estimated lifetime between 50 and 100 years.

Site Hydrology and Hydrogeology

Surface Water 2.5 There is a The River Thames located approximately 5000 m away from the development.

Aquifer 2.6 The development is located within an unproductive strata. These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Source Protection Zone 2.7 The site is not located within a Source Protection Zone.

Ground Water Levels 2.8 The ground water levels for this site are unknown. However it is likely that the water table is low.

Site Geology

Bedrock 2.9 The British Geological Society records of the site show that it is located within the London Clay .

Superficial Deposits 2.10 The British Geological Society records show that the superficial deposits are None.

Contaminated Land 2.11 The contaminated land register suggest that the site is not contaminated

National and Local Planning Policy 3

National Planning Policy Framework (NPPF)

3.1 The NPPF and its technical guidance is a set of planning policies with the key objective to contribute to the achievement of sustainable development. As part of it, they ensure that flood risk and sustainability are taken into account during the planning process. This ensures that developments are not located in flood risk areas and directs developments to lower risk areas. The NPPF applies a sequential risk-based approach to determining the suitability of land for development in flood risk areas. The NPPF also encourages developers to seek opportunities to reduce the overall level of flood risk through the layout of the development and the application of Sustainable Drainage Systems (SuDS). Adoption of these principles at early stages of the project can ensure that the developments take into account appropriate mitigation which is included within the detailed design of the schemes.

The Flood and Water Management Act (2010)

3.2 The Flood and Water Management Act aims to reduce the flood risk associated with extreme weather events. It provides a robust management of flood risk for people, homes and businesses and also encourages the use of SuDS for developments. A robust SuDS strategy should take into account the recommendations given in this Flood Risk Assessment. The drainage strategy should incorporate SuDS within the design and also attenuate all flows to either the greenfield or brownfield run off and take into account the risk from other sources as necessary.

Assessment and Mitigation of Flood Risk 4

4.1 The flood risks were determined by identifying the sources of flooding and assessing their possible impact and likelihood to the development.

Fluvial Flood Risk - Assessment

4.2 Fluvial flood risk was assessed using the Environment Agency Flood Zone Maps and the sequential risk-based approach recommended in the NPPF. The sequential test takes into account the flood risk vulnerability of land uses in relation to the flood zone categorisation. These parameters are assessed in order to determine whether the development is appropriate. Under certain circumstances the exception test is applicable.

Sequential Test

Step 1
Flood Zone categorisation

4.3 The proposed development is less than 1Ha and falls within the Environment Agency Flood Zone 1.Therefore, this Flood Risk Assessment Level 1- Screening report should be sufficient under the NPPF. The Flood Zone 1 is considered to have a low probability of flooding with an annual probability of flooding of <0.1%. The chance of flooding is 1 in 1000 years or greater.

Step 2
Flood risk vulnerability

4.4 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guide, the proposed development is classified as 'More vulnerable '.

Step 3
Sequential Test Results

4.5 The Flood Risk vulnerability and Flood Zone Compatibility table of the NPPF Planning Practice Guide states that More vulnerable developments are appropriate in this area.

The Exception Test

4.6 The exception test is not required.

Surface water (overland flows) flood risk

4.7 The Environment Agency maps show that the flood risk from surface water is low. However a residual risk of localised shallow ponding remains likely. The development should look at increasing the threshold levels of the buildings and accommodating areas for free flow of run off.

4.8 The council's Surface Water maps confirms that the flood risk for the site is low. See appendix C for details.

Reservoirs Risks

4.9 The Reservoir Flood Map (RFM) produced by the Environment Agency do not show the risk to individual properties of dam breach flooding. The maps do not indicate or relate to any particular probability of dam breach flooding. The maps were prepared for emergency planning purposes and can be used to help reservoir owners produce on-site plans and the Local Resilience Forum produce off-site plans, and to prioritise areas for evacuation/early warning in the event of a potential dam failure. The RFM shows that the development could be within the possible dam breach flooding path. It is recommended that the Local Resilience Forum is contacted during detailed design. See Appendix C.

Groundwater flood risk

4.10 The strategic flood risk assessment confirms that the site has limited susceptibility to ground water flooding. No interventions required.

Flooding from drainage systems in adjacent areas

4.11 The SFRA Level 1 shows that the site is within an area of high sewer flooding incidents. The site is also located within an area that contributes to the flooding of a critical drainage area. The risk of flooding from adjacent drainage systems in considered to be medium, due to the site location within a critical drainage area, it is recommended that the following interventions undertaken to protect the development from flooding.

Critical Drainage Area - Mitigation

4.12 The following mitigation interventions are recommended:
- The should be a step at least 200mm around the ground floor level to avoid water run-off moving into the basement.
- The surface water falling into the light wells should be pumped to the surface water sewer system
- The foul water from the basement should be pumped to the public foul sewer system.

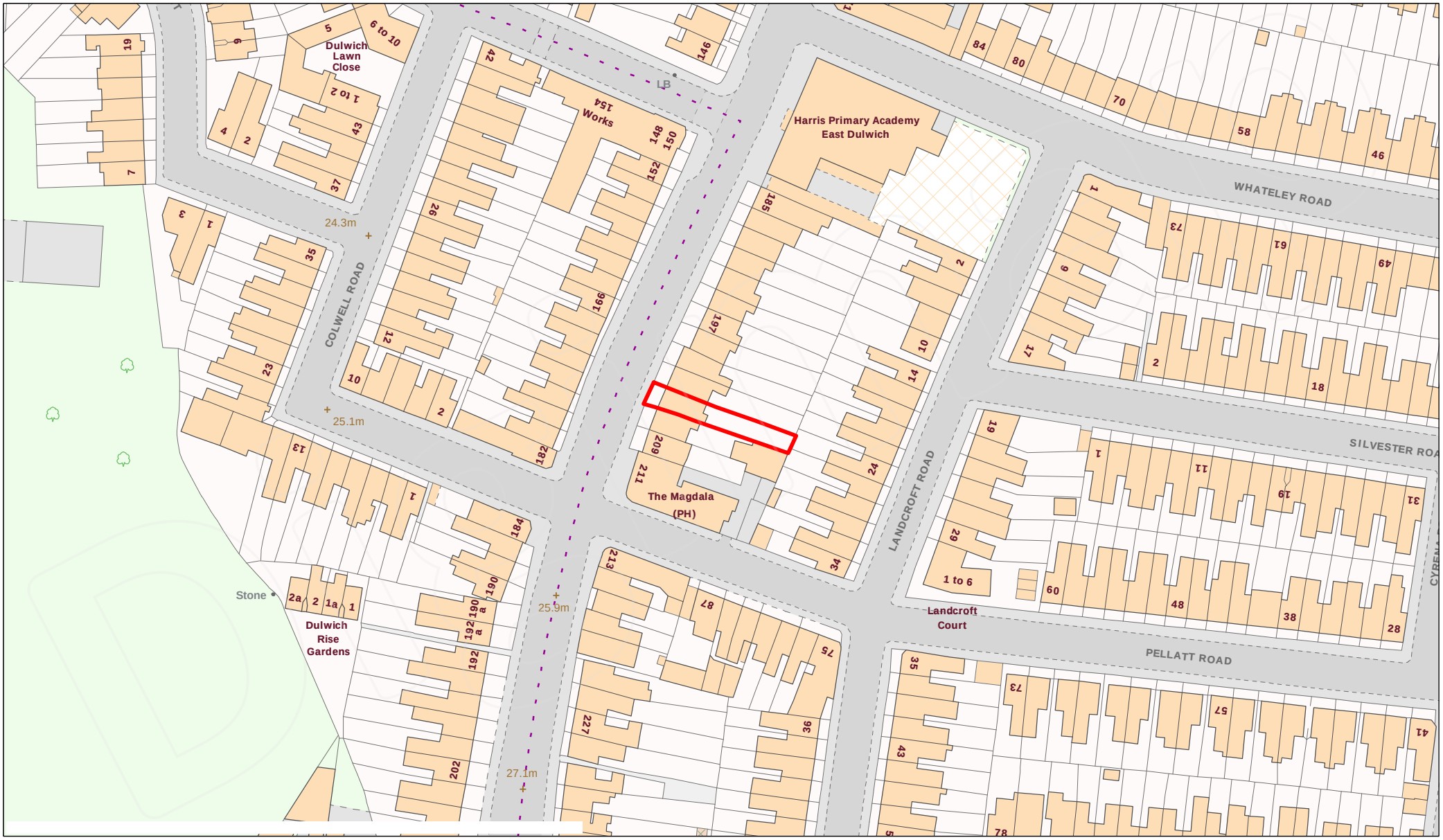
Conclusions 5

5.1 The development is outside of the Environment Flood Risk zones from rivers. However is within a critical drainage area. All flows should be pumped from the basement to the public sewer. Under the NPPF the development is development use is appropriate within the flood zone.

5.2 The development fully complies with the NPPF as it has been designed to not result in net loss of flood storage; not impede water flows, not increase flood risk elsewhere and be safe for use.

Appendix A

Location Plan



Digimap®

Ordnance Survey

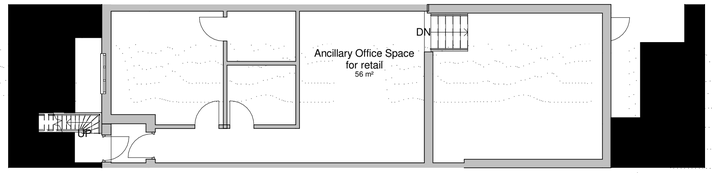
Scale 1:1250

0 10 20 30 40 50 60 70 80 90 100 m

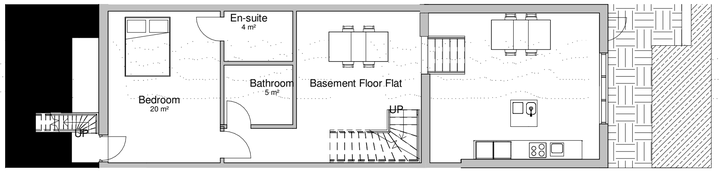
Projection: British National Grid

N

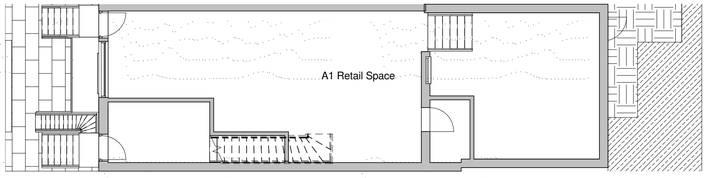
Appendix B



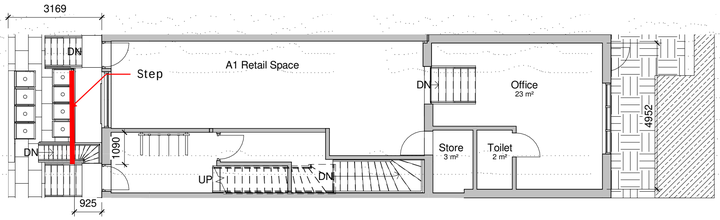
Existing - Basement Floor Plan
1 : 100



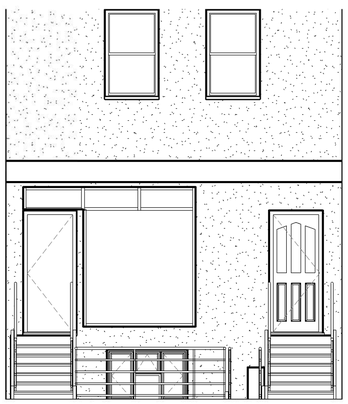
Proposed - Basement Floor Plan
1 : 100



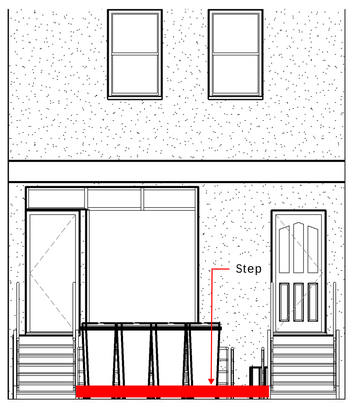
Existing - Ground Floor Plan
1 : 100



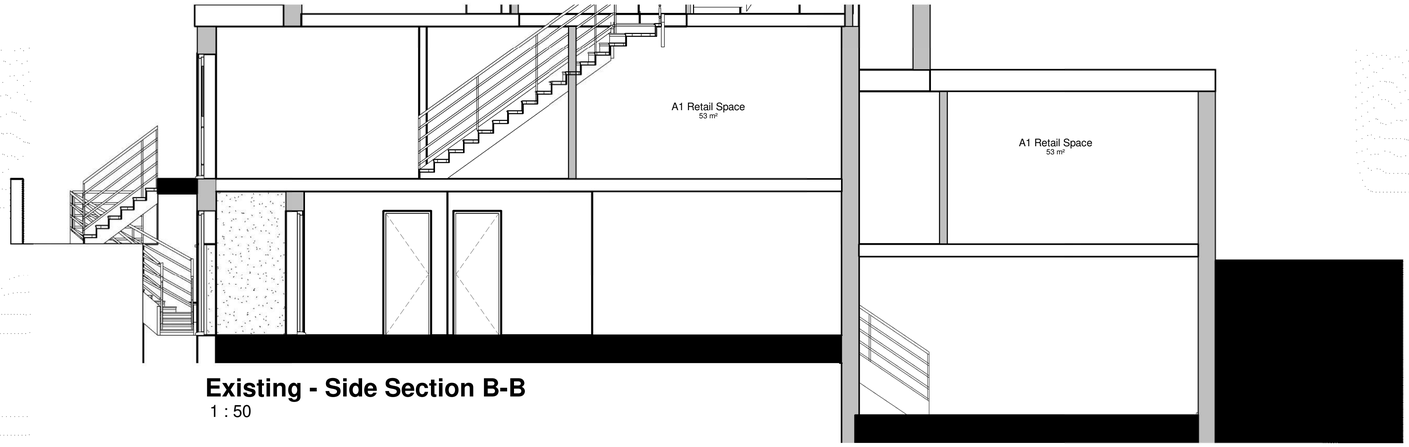
Proposed Ground Floor Plan
1 : 100



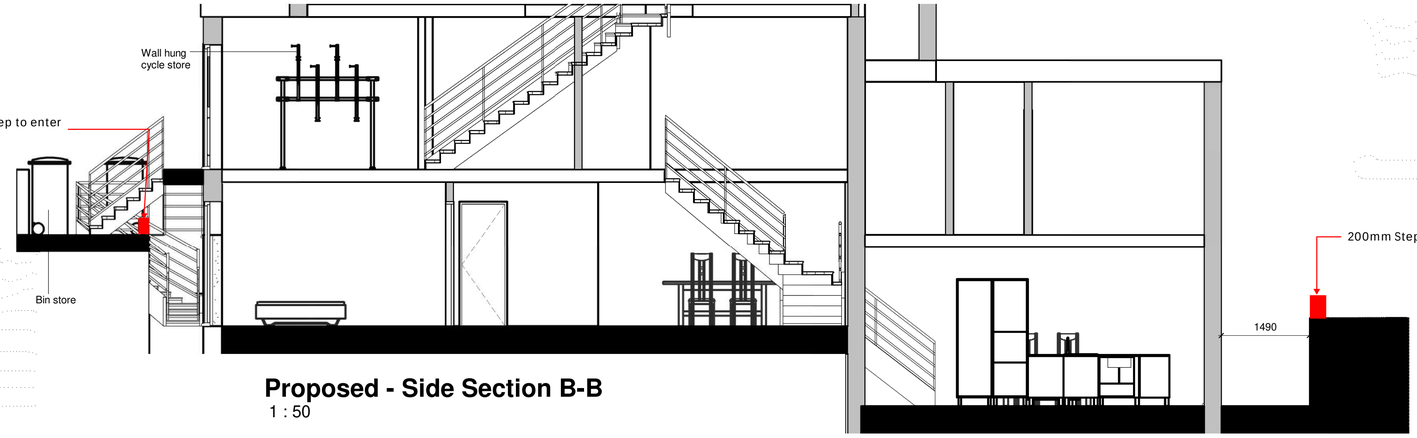
Existing - Front Elevation
1 : 50



Proposed - Front Elevation
1 : 50



Existing - Side Section B-B
1 : 50



Proposed - Side Section B-B
1 : 50

CLIEN
T:

Owner

Roktom
Limited

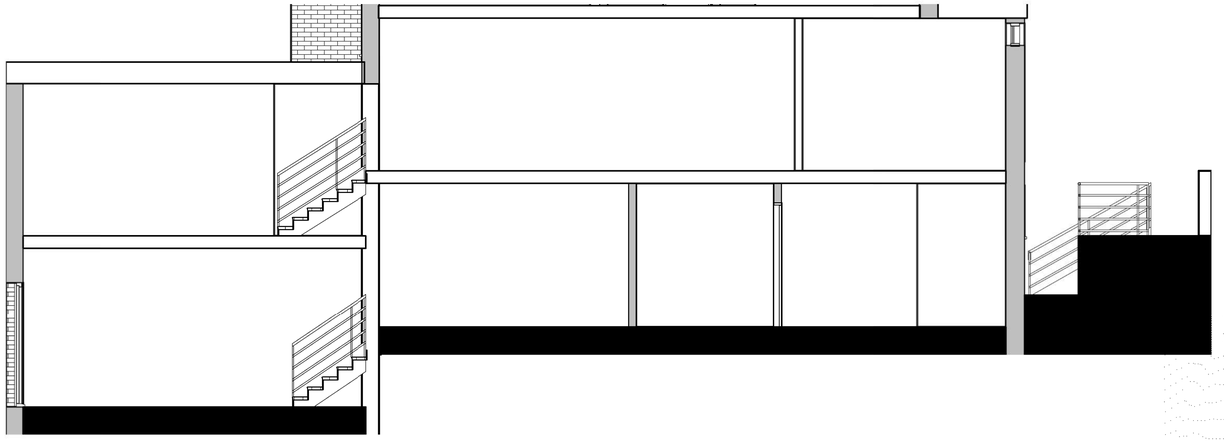
0 1 2 3 4 50m
PRINT REDUCTION BAR | A1 SHEET

No	AMENDMENT DESCRIPTION	DATE
.		

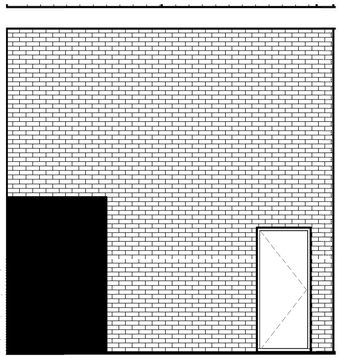
Change of Use E to Residential
205 Lordship Lane
Floor Plan and Section

SCALE: As indicated
DRAWN: Author
APPROVED:

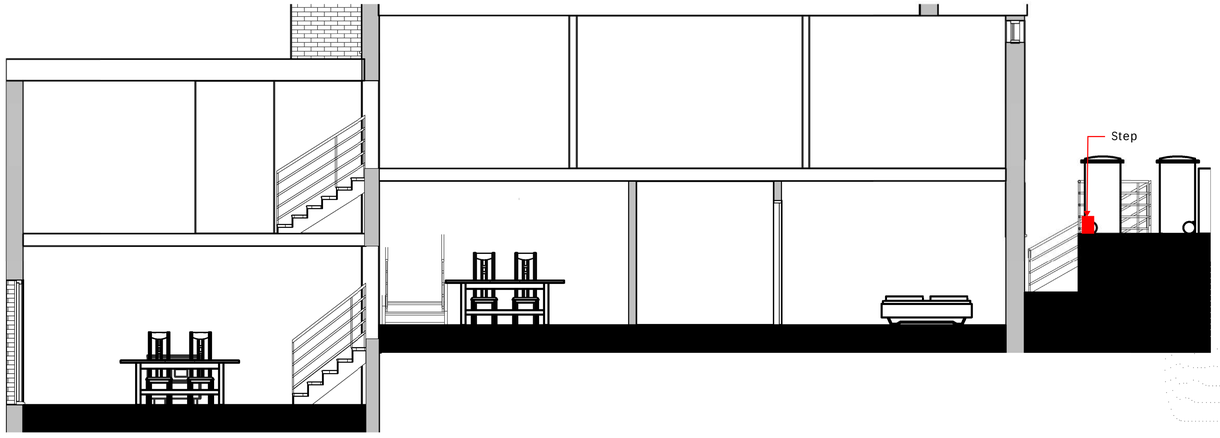
DRAWING No.: LRD-A101
REVISION: 1



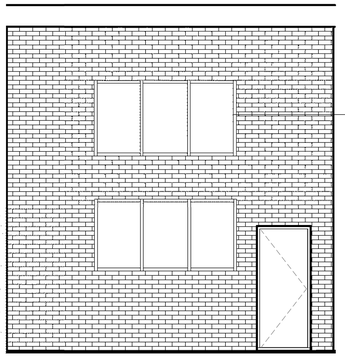
Existing - Side Section A-A
1 : 50



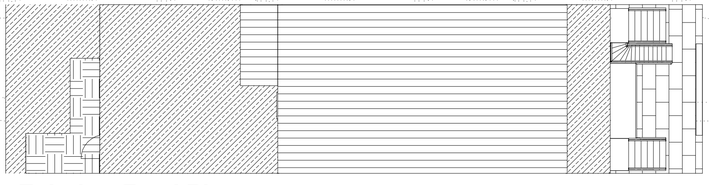
Existing - Rear Elevation
1 : 50



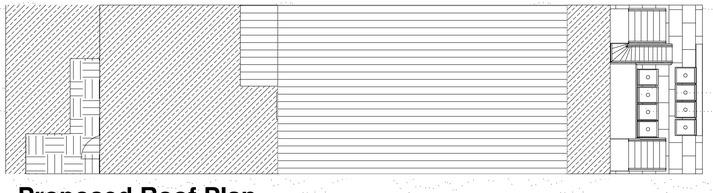
Proposed -Side Secction A-A
1 : 50



Proposed - Rear Elevation
1 : 50



Existing Roof Plan
1 : 100



Proposed Roof Plan
1 : 100

CLIENT: Owner

Roktom Limited

0 1 2 3 4 50m
0 0 0 0 0 m
PRINT REDUCTION BAR | A1 SHEET

AMENDMENT

No	DESCRIPTION	DATE
-		

Change of Use E to Residential
205 Lordship Lane
Proposed Section View

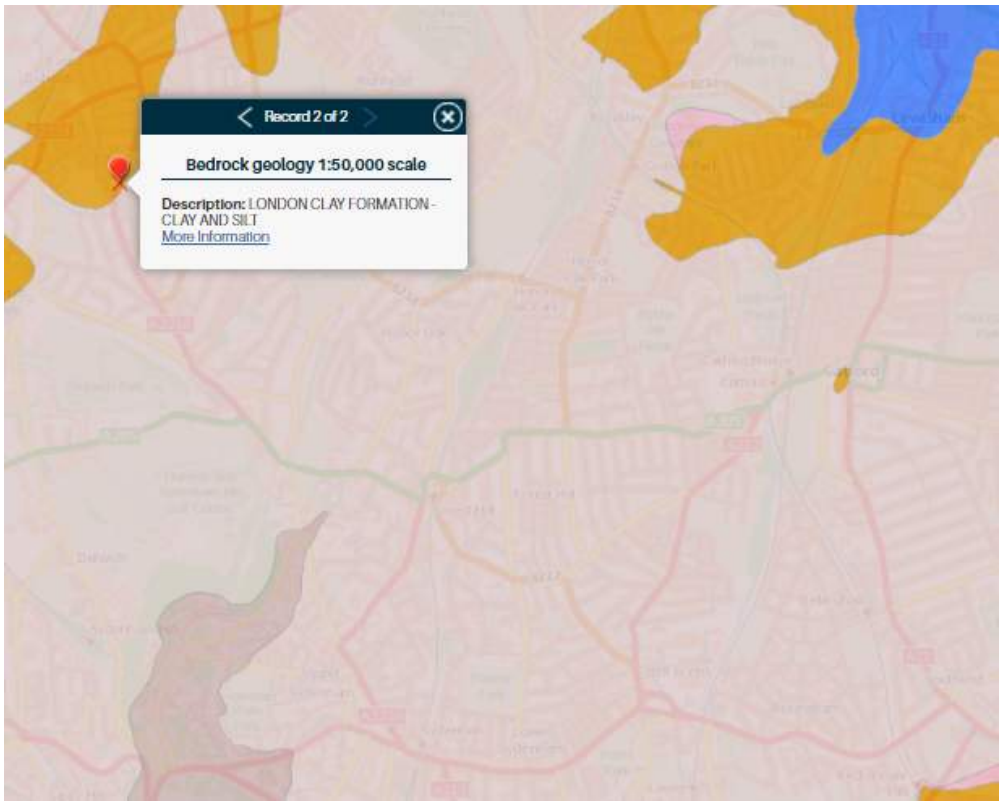
SCALE: As indicated
DRAWN: Author
APPROVED:

DRAWING No. LRD-A102
REVISION 1

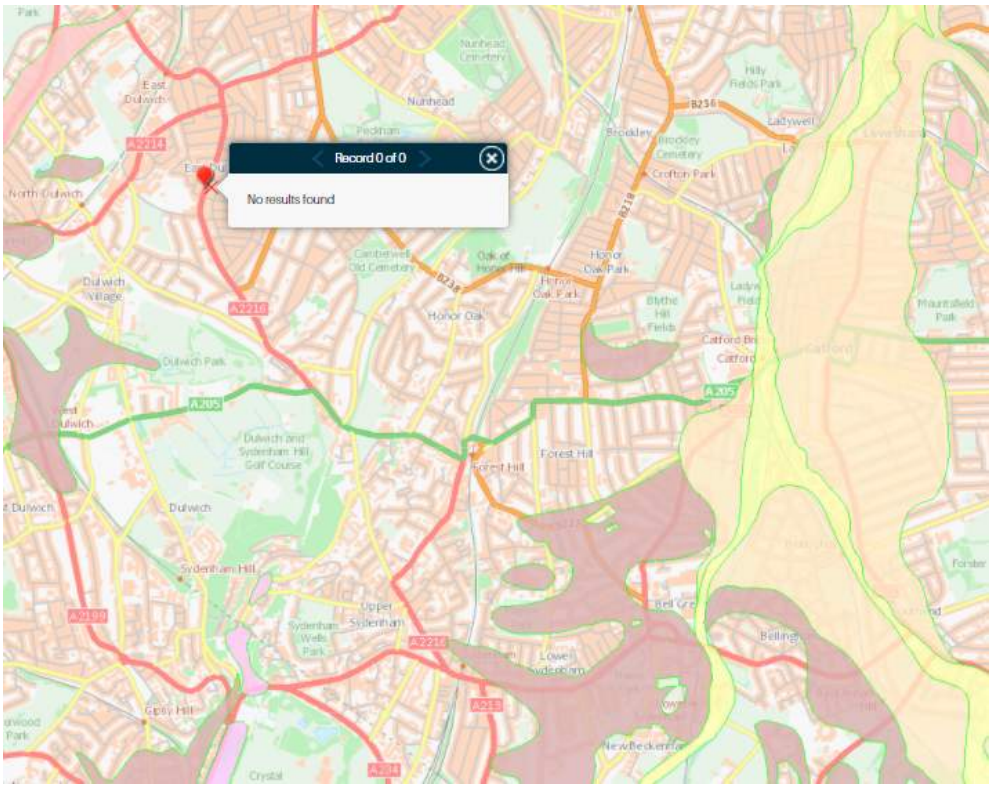
Appendix C

SITE GEOLOGY

GEOINDEX ONSHORE GEOLOGY - BEDROCK - LONDON CLAY



GEOINDEX ONSHORE GEOLOGY - SUPERFICIAL DEPOSITS - NONE



SITE FLOOD RISK

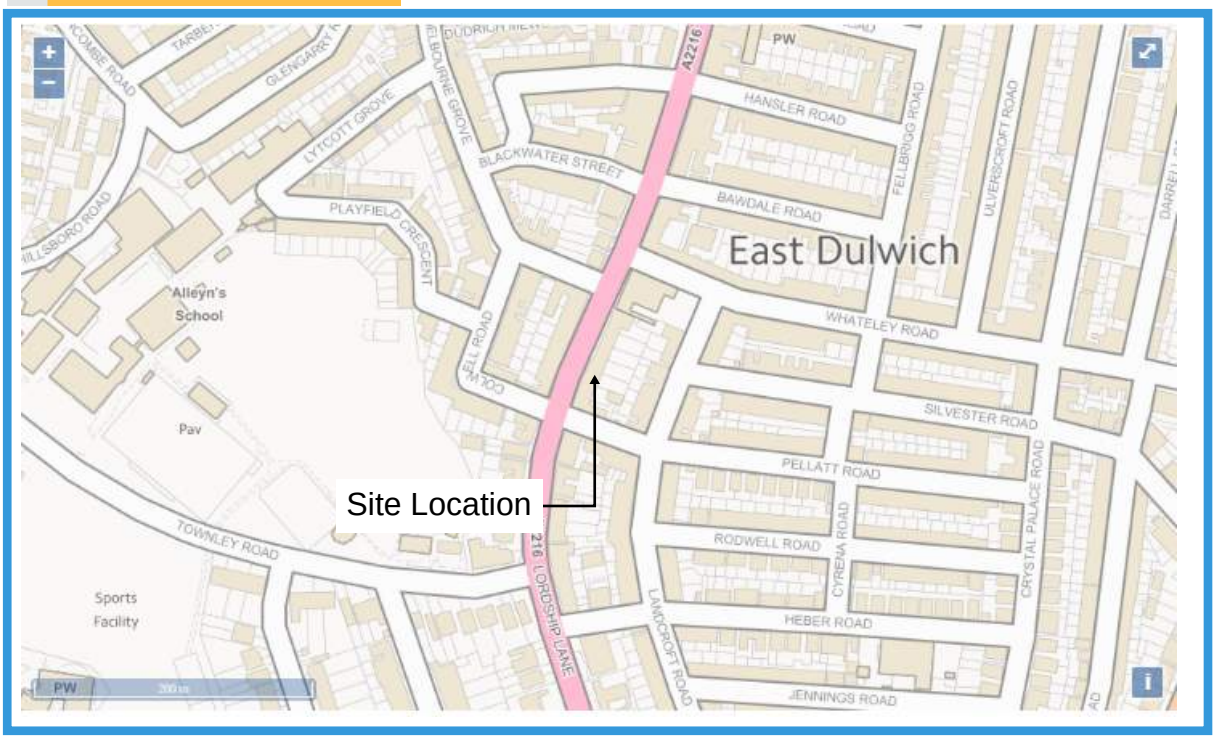
Low risk means that each year this area has a chance of flooding of between 0.1% and 1%. Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.

Flood risk from surface water

Extent of flooding

Flood risk from reservoirs

Extent of flooding



Flood map for planning

Your reference	Location (easting/northing)	Created
205 Lordship	**533696/174648**	**18 Jan 2021 9:46**

Your selected location is in flood zone 1, an area with a low probability of flooding.

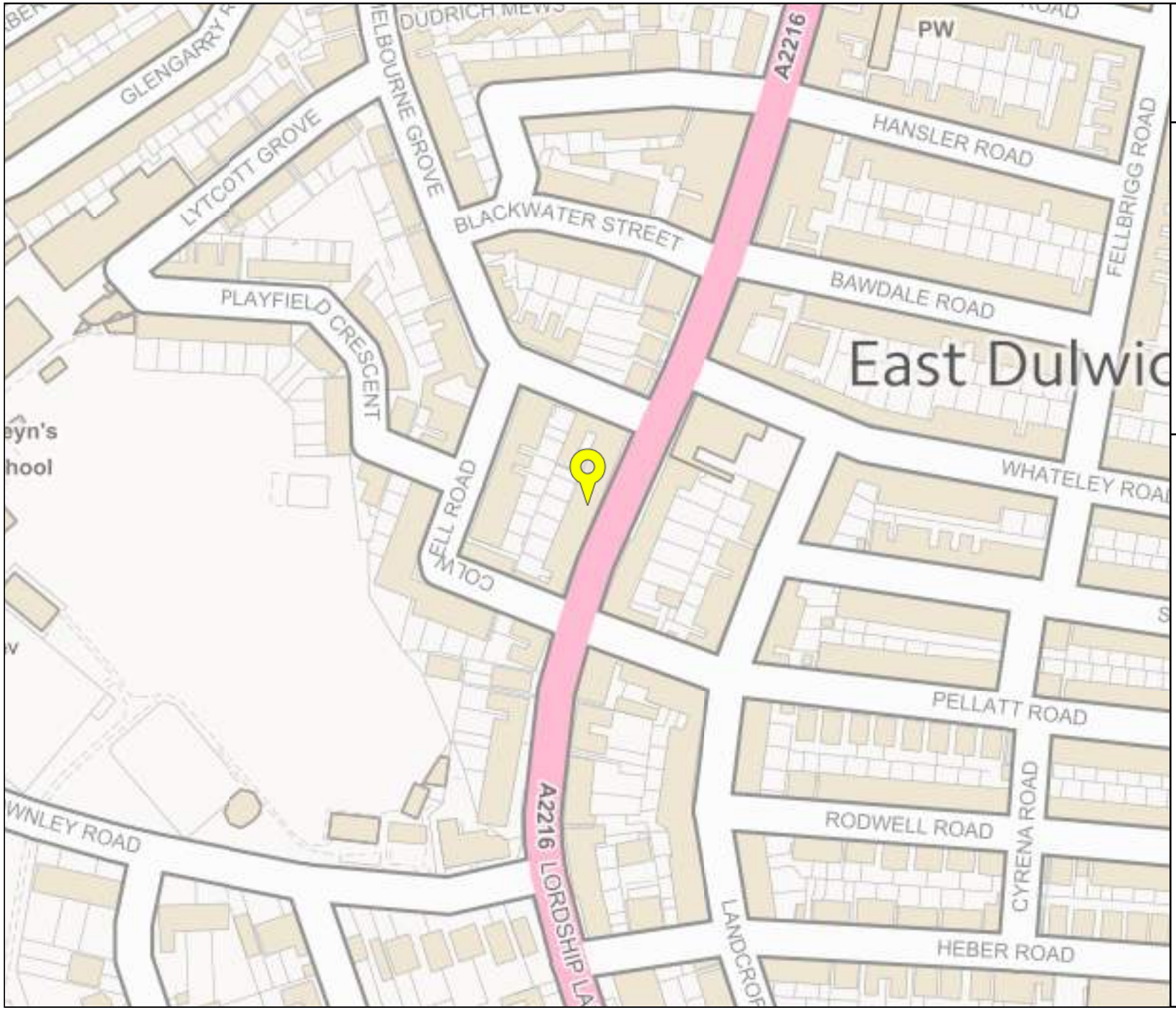
This means:

- you don't need to do a flood risk assessment if your development is smaller than 1 hectare and not affected by other sources of flooding
- you may need to do a flood risk assessment if your development is larger than 1 hectare or affected by other sources of flooding or in an area with critical drainage problems

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.



Environment Agency

Flood map for planning

Your reference
205 Lordship

Location (easting/northing)
533696/174648

Scale
1:2500

Created
18 Jan 2021 9:46

- Selected point
- Flood zone 3
- Flood zone 3: areas benefitting from flood defences
- Flood zone 2
- Flood zone 1
- Flood defence
- Main river
- Flood storage area

0 20 40 60m