

Proposed Residential Development, Old School House

Flood Risk Assessment

784-B034904

July 2022

Prepared by Tetra Tech on Behalf of Aujla Property Limited.

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1.0 INTRODUCTION

1.1 PURPOSE OF THIS REPORT

Tetra Tech Ltd has been commissioned by Aujla Property Limited to produce a Flood Risk Assessment with regards to a change of use to residential dwellings at the 'Old School House' located along Turnpike Lane in Uxbridge.

This report has been produced in support of an application for Prior Approval for the proposed change of use for the development as detailed in Section 1.2.

1.2 PROPOSED DEVELOPMENT

The existing Old School house is currently used as office space, but approval is sought for a change of use of the building. The existing building will be developed into 5 residential units and a commercial area over 2 floors.

The proposed site layout is contained within Appendix A.

1.3 REQUIREMENT FOR THIS REPORT

The application site is located within Flood Zone 1 and is 0.1 ha in size, therefore a Flood Risk Assessment is not compulsory. However, the report has been prepared in support of an application for Prior Approval for a change of use. The assessment will be undertaken in accordance with the National Planning Policy Framework (NPPF), the Planning Practice Guidance (PPG) (Flood Risk and Coastal Change) and local guidance.

1.4 SCOPE OF THIS REPORT

The Flood Risk Assessment will consider all potential sources of flood risk including Main Rivers, Ordinary Watercourses (not shown on the Environment Agency's flood maps), surface water and overland flow routes, groundwater, sewers, and reservoirs. It will identify the level of risk and where necessary propose mitigation to manage flood risk.

The assessment will be undertaken in accordance with the NPPF (Chapter 14), Planning Practice Guidance (PPG) (Flood Risk and Coastal Change), Environment Agency guidance, the London Borough of Hillingdon Local Flood Risk Management Strategy (LFRMS) and West London Strategic Flood Risk Assessment (SFRA).

As this application is for a change of use of the existing building from office space to residential use, it is assumed that the site is already serviced by surface water and foul drainage systems which will be utilised in the new development. Therefore, this report will not suggest a surface water or foul drainage strategy for the site.

1.5 LIMITATIONS OF THE REPORT

This report has been prepared by Tetra Tech Ltd on behalf of the Client in connection with the scope of the report as described in Section 1.4 above and taking into account the particular instructions and requirements set out in Tetra Tech's fee proposal and the Client's acceptance. It is not intended for and should not be relied on by any third party and no responsibility is undertaken to any third party.

Tetra Tech Ltd accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

This report cannot be reproduced without Tetra Tech's written consent.

2.0 SITE DESCRIPTION

2.1 EXISTING SITE

The site (highlighted in red in Figure 1) is an existing building, The Old School House, in Uxbridge (Grid Reference: TQ06138308). The postcode of the building is UB10 0AA and the site covers an approximate area of 0.1ha.



Figure 1: Site location

The existing building on site is currently used as office space. It is bounded by the A4020 to the north and east, Turnpike Lane and residential buildings to the west and gardens and residential areas to the south.

The layout of the site is included as Appendix A.

2.2 SITE TOPOGRAPHY

A review of a topographic data indicates that the site falls from the north to the southeast. The highest level is 35.76m AOD at a point at the north boundary of the site, and the lowest level is 34.13 AOD at a point in the southeast corner of the site.

Topographical data is included in Appendix B.

2.3 MAIN RIVERS

A review of the Main River Map provided by the Environment Agency shows there are no designated Main Rivers flowing through the application site. The nearest main river is the River Pinn approx. 70m to the southeast of the site. There are no known ordinary watercourses near to the site.

2.4 SEWERS

2.4.1 Public Sewers

The existing site is currently used as office space, therefore it is assumed that the site is serviced by the public sewer system operated by Thames Water.

2.4.2 Private Sewers

The topographical survey indicates the presence of onsite private surface water drainage systems including drainage channels. It is assumed that surface water is discharged to public sewers via the private drainage system.

2.5 GROUND CONDITIONS

2.5.1 Geology

A review of British Geological Survey (BGS) online geological mapping identified the superficial geology at the site location as Langley Silt Member - Clay and Silt.

The bedrock geology is indicated to be London Clay Formation which comprises poorly laminated silty to very silty clay and, clayey silt and silt with some layers of sandy clay.

The closest borehole within the same geological deposit (TQ08SE32) indicated that groundwater level was approx. 10m below ground level.

2.5.2 Hydrogeology

A review of Defra's online 'Magic' mapping indicates that the superficial and bedrock aquifers are classified as unproductive. Unproductive aquifers have negligible significance for water supply or baseflow to rivers, lakes and wetlands. They consist of bedrock or superficial deposits with a low permeability that naturally offer protection to any aquifers that may be present beneath.

3.0 FLOOD RISK

3.1 FLUVIAL RISK

A floodplain is the area that would naturally be affected by flooding if a river rises above its banks or is inundated by the sea (coastal or tidal flooding). In England, floodplains are divided into flood zones for planning purposes. They are divided as follows, as defined by the Environment Agency:

- Flood Zone 1 is land assessed as having a less than 1 in 1000 (<0.1%) annual probability of river flooding. The risk of flooding is low.
- Flood Zone 2 is land assessed as having between a 1 in 1000 (0.1%) and 1 in 100 (1%) annual probability of river flooding. The risk of flooding is medium.
- Flood Zone 3 is land assessed as having a 1 in 100 or greater (>1%) annual probability of river flooding. The risk of flooding is high.

The Environment Agency's Flood Map for Planning (Figure 2 and Figure 3) indicates that the site is located within Flood Zone 1 with the southernmost part of the site in Flood Zone 2.



Figure 2: Environment Agency Flood Map for Planning



Figure 3: Insert of Figure 2

The area of the site designated as Flood Zone 2 is comprised of bushes and trees, see Appendix B. The property at the site for which the application is sought is located entirely within Flood Zone 1, therefore the risk to the property can be considered low.

3.2 SURFACE WATER & OVERLAND FLOWS

Surface water flooding can occur during high intensity rainfall events as sheet runoff from fields or hard paved areas. It is particularly prevalent in areas with significant hardstanding or poorly permeable soils (i.e. clay). This is because the grounds capacity for infiltration is reduced. In addition, the inability to enter local drainage systems also contributes to risk from this source. The risk of surface water flooding is divided as follows, as defined by the Environment Agency:

- Very low risk means that the annual probability of flooding is less than 1 in 1000 (<0.1%).
- Low risk means that the annual probability of flooding is between 1 in 1000 (0.1%) and 1 in 100 (1%).
- Medium risk means that the annual probability of flooding is between 1 in 100 (1%) and 1 in 30 (3.3%).
- High risk means that the annual probability of flooding of greater than 1 in 30 (3.3%).

The Environment Agency's Surface Water Flood Map (Figure 4 and Figure 5) indicates that the site is in an area of very low risk from surface water flooding. There are some areas of low risk indicated outside the site

boundary to the south and along Turnpike Lane to the west. The site is considered to be at very low risk of surface water flooding.

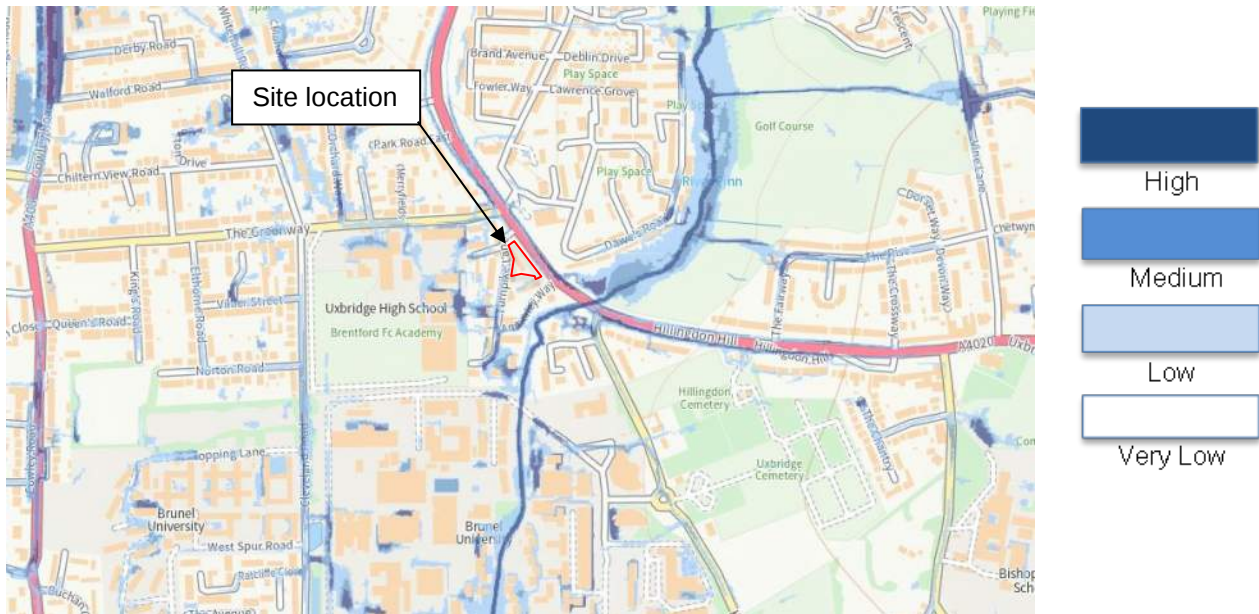


Figure 4: Extent of Flooding from Surface Water



Figure 5: Insert of Figure 6

3.3 GROUNDWATER FLOODING

Groundwater flooding occurs when groundwater emerges at the surface under conditions where the 'normal' range of groundwater levels and groundwater flows is exceeded.

The LFRMS noted that there were a number of areas within Hillingdon that experienced limited groundwater flooding, however, the named areas did not include the site location. A review of the West London SFRA highlights shows that the site location is in an area where the susceptibility is less than 25%. The site is not located within a groundwater source protection zone (SPZ).

Based on the above, it is concluded that the site is at very low risk of flooding from groundwater.

3.4 SEWER FLOODING

Sewer flooding occurs when intense rainfall overloads the sewer system capacity and/or when sewers cannot discharge properly to watercourses due to high water levels. Sewer flooding can also be caused when problems such as blockages, collapses or equipment failure occur in the sewerage system.

A review of the West London SFRA indicates that there were no recorded events of sewer flooding at, or near, the site location. It is assumed that the site is serviced by the public sewer system operated and maintained by Thames Water.

Therefore, the site can be concluded that the risk of flooding from this source is low.

3.5 RESERVOIR, CANAL AND ARTIFICIAL SOURCE FLOODING

The probability of a catastrophic dam failure is considered to be extremely low. All large reservoirs must be regularly inspected and supervised by reservoir panel engineers under the Environment Agency's enforcement of the Reservoirs Act 1975 in England.

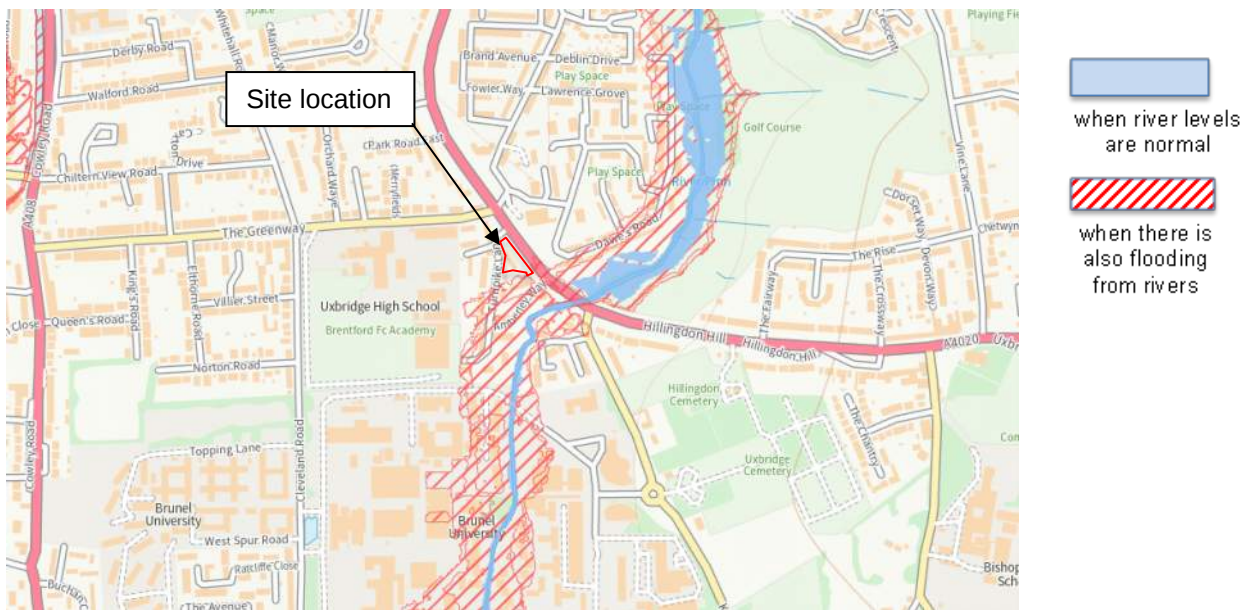


Figure 6: Map of extent of reservoir flooding

A review of the Environment Agency's online Extent of Flooding from Reservoirs indicates that the site is not located within the reservoir flood extents. Therefore, the risk from this source is very low.

There are no canals on or in close proximity to the site and so the risk of flooding from this source is negligible.

3.6 SUMMARY OF FLOOD RISK

Overall, the site is at low or very low risk from all sources, with the exception of the southeast corner of the site which is at medium risk from fluvial flooding. The location of the property on site is at low risk from all potential sources of flooding.

4.0 FLOOD RISK MANAGEMENT

4.1 SEQUENTIAL & EXCEPTION TESTS

One of the aims of NPPF is to steer development away from zones of high flood risk towards Flood Zone 1. The proposed development components are classified as 'More Vulnerable' in accordance with Table 2 of the PPG (Flood Risk & Coastal Change).

Given the site is in Flood Zone 1 and the development is classified as 'More Vulnerable', Table 3 of the PPG states that the proposed development would be considered appropriate in terms of flood risk. Therefore, the sequential and exception tests are not required.

4.2 HILLINGDON LOCAL FLOOD RISK MANAGEMENT STRATEGY (2015)

The Hillingdon LFRMS was adopted in February 2016. The policies relevant to flood risk and drainage are summarised below:

- The London Plan Policy 5.13: Sustainable Drainage. SuDs should be implemented within all new developments where practical.
- Crane Valley Partnership's catchment plan Objective 4 – Reduced Risk of Flooding in Built-Up Areas. Improving the catchment's capacity to store and slowly release stormwater.
- The London Borough of Hillingdon's, Local Plan Part 1 and Part 2. EM6 Flood Risk.

5.0 CONCLUSIONS

The site is in Flood Zone 1 according to the EA Flood Map for Planning and covers an area of 0.1ha. It is proposed to convert the existing office space into 5 residential dwellings and a commercial area. The development is classed as 'More Vulnerable' according to the PPG. The nearest main river is the River Pinn 70m to the southeast of the site. The land falls towards the southeast and existing drainage is assumed to be servicing the site effectively. The overall flood risk to the property is low, with medium fluvial flooding risk in the southeast corner of the site, which is comprised of trees and bushes.

As the property is 'More Vulnerable' and within Flood Zone 1, development would be considered appropriate in terms of flood risk.

APPENDICES

APPENDIX A – PROPOSED SITE LAYOUT



Proposed Site Plan

General Notes

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These proposals are subject to the approval of all Statutory Building Control requirements and the requirements of all Statutory Authorities and Service Providers.

The site boundaries and surroundings are based on the following:

• OS Map / Measured survey by Matrix surveys

The site boundaries are those described by the client.

These drawings are to be read in conjunction with all other relevant documentation produced by Stephen Davy Peter Smith Architects and other consultants employed by the client.

Specific Notes

KEY:

Site Boundary

1B/1P Unit

1B/2P Unit

Commercial/Use class E

Key

N

1:500

0

5

10

15

20

25m

P0	NBR	Issued for information			08/07/22
Rev	Drawn	Notes			Date
X#	XX	##/##/##			
Rev	Checked	Date	Approved	Date	

REVISIONS

Client

Aujla Property Limited

A - APPROVED

B - APPROVED WITH COMMENTS

C - DO NOT USE

CLIENT APPROVAL

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Project

Old School House
Hillingdon Road

Drawing Ref.

2135 - DS - XX - ZZ -DR - A - P005

Job No.

2135

Purpose of Issue

PRIOR APPROVAL

Scale

1:500 @ A2

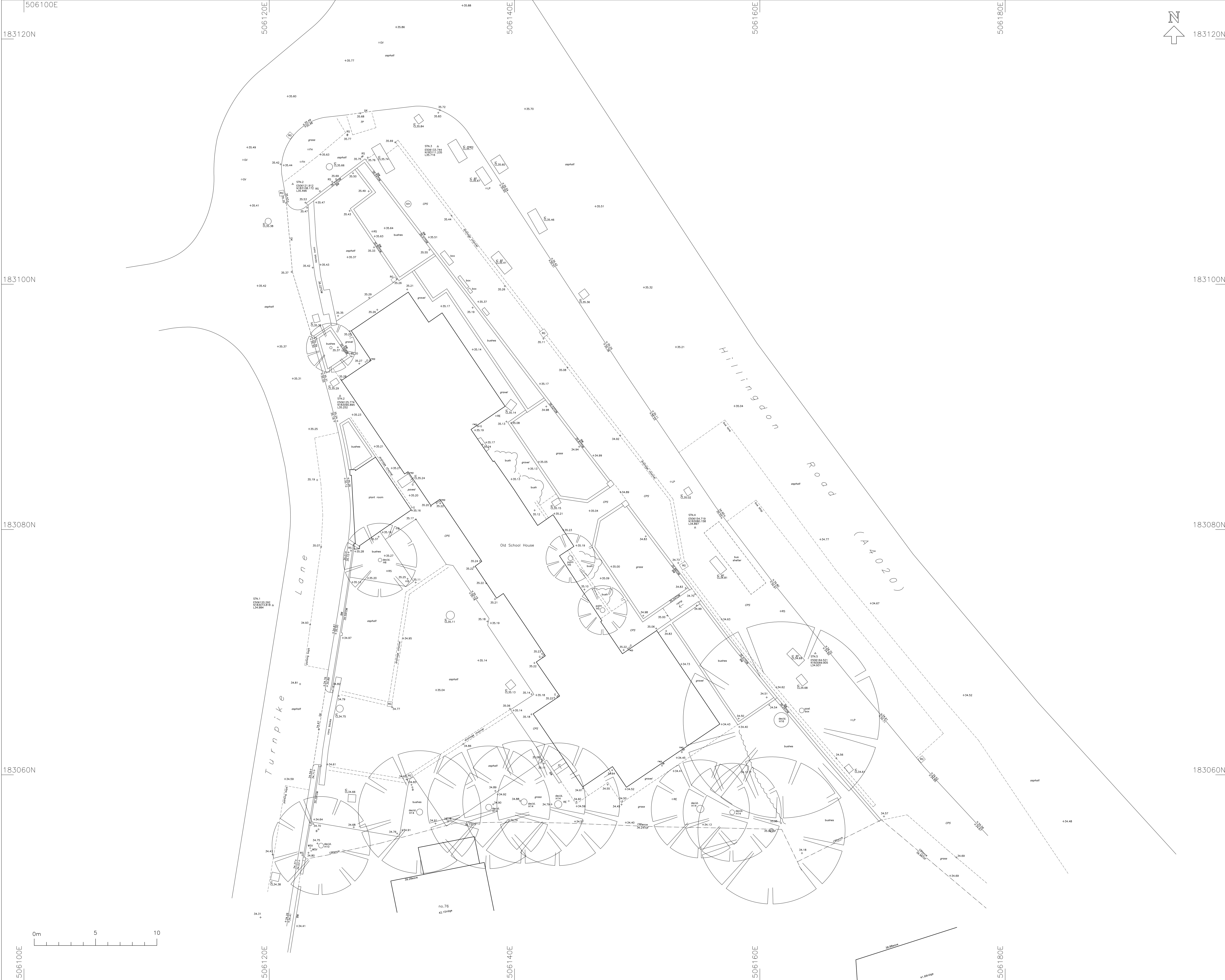
Drawing Title

Site Plan

Project Ref - Drawing No - Status - Revision

2 1 3 5 - P 0 0 5 - S 2 - P 0

APPENDIX B – SITE DETAIL AND TOPOGRAPHICAL DATA



DO NOT SCALE FROM DRAWING
ALL DIMENSIONS TO BE CHECKED ON SITE

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NOTES:
ALL MEASUREMENTS TAKEN TO EXISTING
SURFACE FINISHES UNLESS STATED OTHERWISE
ALL LEVELS IN METRES
ALL ARROWS POINT UP
SURVEY GRID & LEVELS RELATED TO
ORDNANCE SURVEY BY GPS OBSERVATION

LEGEND:
20.00F FLOOR LEVEL
20.00H WINDOW HEAD LEVEL
20.00S WINDOW SILL LEVEL
20.00C CEILING LEVEL
20.00SC SUPPRESSED CEILING LEVEL
20.00B BEAM LEVEL
20.00D DOOR HEAD LEVEL
AB ARRBLOCK
B BELLARD
BH HEIGHT TO BEAM UNDERSIDE
BM BENCH MARK
BT BRITISH TELECOM
CATV CABLE TV
CB CONCRETE PAVING SLABS
CPS CONCRETE PAVING SLABS
DK DROP KERB
DR DRAIN ROD
FB FLOWER BED
FI FIRE INSULATOR
FW FULL WATER
G GULLY
IC INSULATION
I INSULATION
L LAMP POST
LP LAMP POST
P POST
RE ROOFING EYE
RG ROAD GULLY
RS ROAD SIGN
RWP RAIN WATER PIPE
SWP SOL VENT PIPE
SW SURFACE WATER
TL TRAFFIC LIGHT
TGF TOP OF FENCE LEVEL
TSM TOP OF MALL LEVEL
TP TELEGRAPH POLE
V VENT
VM WATER METER
WP WATER STOP VALVE
WV WATER STOP VALVE
FENCE TYPES
BW Border Wire
CB Close Board
CL Chain Link
CP Chestnut Piling
CW Chicken Wire
IW Interlocking
IR Iron Railings
OB Openwork
PW Post and Rail
PW Post and Wire

All tree details should be checked by an Arborologist

REVISIONS	DATE	BY
matrix SURVEYS 18 Sutton Court Road, London W1 3JH T: 020 7091 8802 E: enquiries@matrixsurveys.co.uk		
PROJECT OLD SCHOOL HOUSE 1 HILLINGDON ROAD UXBRIDGE UB10 0AA		
TITLE SITE PLAN		
AS EXISTING		
SCALE	1/100@A0	DATE JAN 2022
DRAWN BY	TS	CHECKED BY SN
DRAWING No.	01	FILE No. 21/2628