

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

- Lambeth Borough Council
- EA Groundwater Source Protection Zone
- Inner Zone
- Outer Zone
- Historic Landfill Site
- Infiltration SUDS suitability: potentially suitable
- Infiltration SUDS suitability: potentially unsuitable
- Infiltration SUDS suitability: Uncertain - Site investigation required

Notes

This map forms an approximate guide to Infiltration SUDS Suitability. However, for all new developments, site investigation is required to confirm local geology, depth to groundwater and infiltration rates.

London Borough of Lambeth



Surface Water Management Plan

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Scale at A3	Date	Drawn by	Approved by
1:45,000	22/03/2011	C. Woodhouse	S. Cox

Infiltration SUDS Suitability Map

Consultants

CAPITA SYMONDS
 Flood Risk Management
 UFS / Scott Wilson
 5-8 Greenleaf Place
 SW1P 1PL

Drain London Programme Board Members



FIGURE 4

Appendix C

Desk Study Site Investigation Extract



5 Ground Conditions

The following information is intended to highlight the relevant ground conditions that are likely to be encountered at the proposed development site. This information has been accrued from limited recorded and publicly available sources, such as the British Geological Society (BGS). It is recommended that site specific investigations should be undertaken at the earliest opportunity to verify these conditions and reduce risks associated with any uncertainty of information.

5.1 Published Geology

Geological maps from the BGS indicate the superficial strata to be made up of Taplow Gravel Formation (TPGR) which is likely made up of a combination of sand and gravel, the exact composition and extent will need to be confirmed as part of the future site investigation. The superficial strata is underlain by a layer of London Clay which forms the bedrock geology.



Figure 5.1 BGS map showing superficial geology

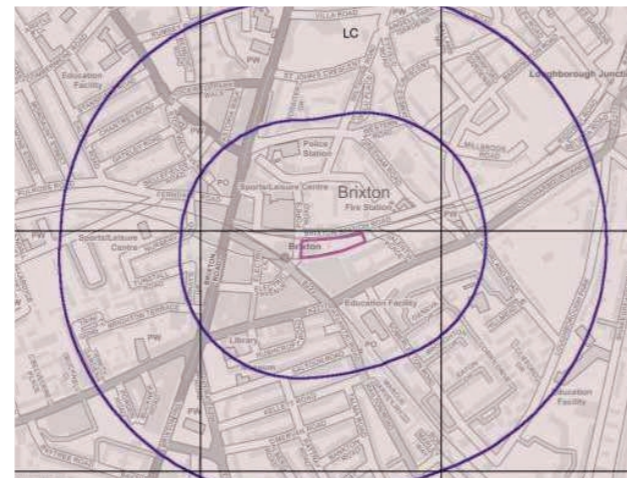


Figure 5.2 BGS map showing bedrock geology

Superficial Geology				
Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	TPGR	Taplow Gravel Formation	Sand and Gravel	Wolstonian - Chokierian
	TPGR	Taplow Gravel Formation	Gravel	Wolstonian - Chokierian

Bedrock and Faults				
Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay	Eocene - Eocene

Figure 5.3 BGS Geology Key

5.2 Encountered Geology

The map below shows the location of historical borehole information available. The closest boreholes, numbered 320 and 321, were respectively carried out in 1989 and 1966.

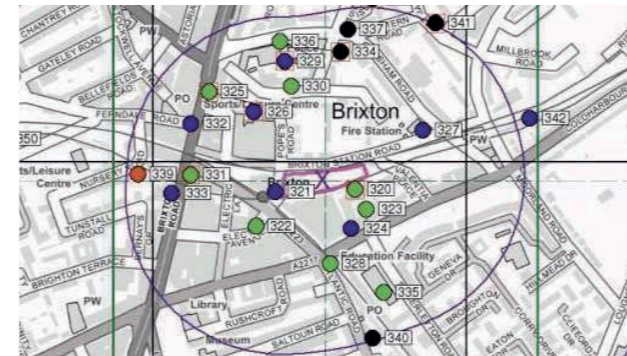


Figure 5.4 Existing borehole location map

Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m

Figure 5.5 Borehole location map - key

The indicative borehole below has been created from the information from these boreholes combined with internal experience from previous AKT II projects. However due to the age and the fact they were taken in proximity to the site and not within, it is recommended that further investigation is carried out to confirm the anticipated ground strata.

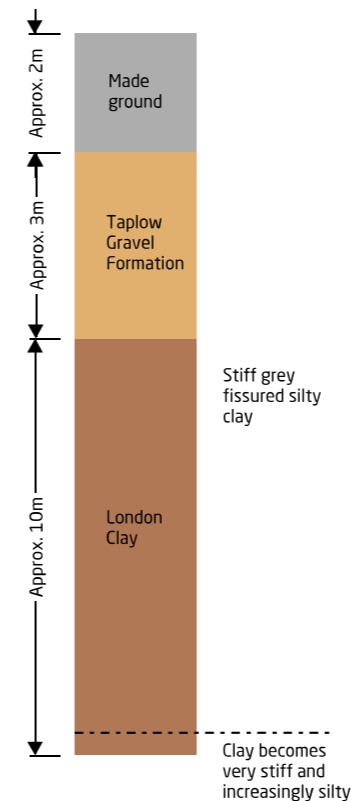


Figure 5.6 Indicative borehole

5.3 Hydrogeology

Information from the Environment Agency (EA) on the hydrogeological composition is illustrated below. In summary:

- The groundwater vulnerability is classed a minor aquifer of high permeability;
- The superficial aquifer is designated as a Secondary A aquifer (permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers);
- The bedrock aquifer is designated as an unproductive strata (these are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.)

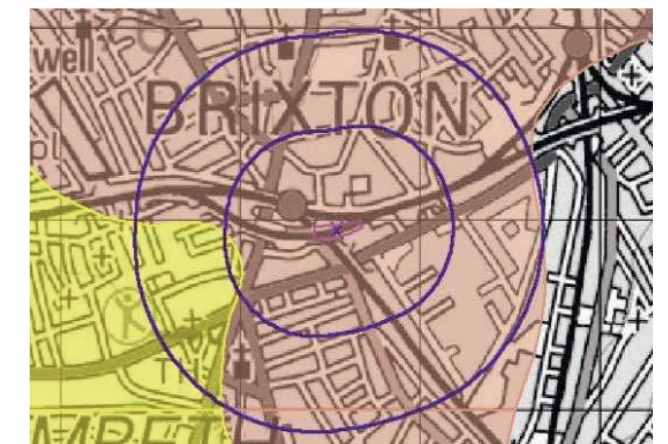


Figure 5.7 Superficial aquifer designation



Figure 5.8 Bedrock aquifer designation

Superficial Aquifer Designation

- Secondary A Aquifer
- Secondary Undifferentiated

Bedrock Aquifer Designation

- Unproductive Strata

Figure 5.9 Aquifer key

5.4 Hydrology & Flood Risk

The nearest surface water feature to the site is the River Thames which is approximately 2.7km in a straight line. Due to this distance the EA does not consider this site in an area of flood risk from Rivers and Sea. This site therefore is classified as 'Flood Zone 1' which signifies land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map)

Confirmation required from Lambeth council whether the site sits in an area of critical drainage. If so, a FRA is required.

The following two maps provided by the British Geological Survey (BGS) and the EA indicate that the site could be subject to groundwater flooding under heavy pluvial conditions.



Figure 5.10 BGS groundwater flooding susceptibility

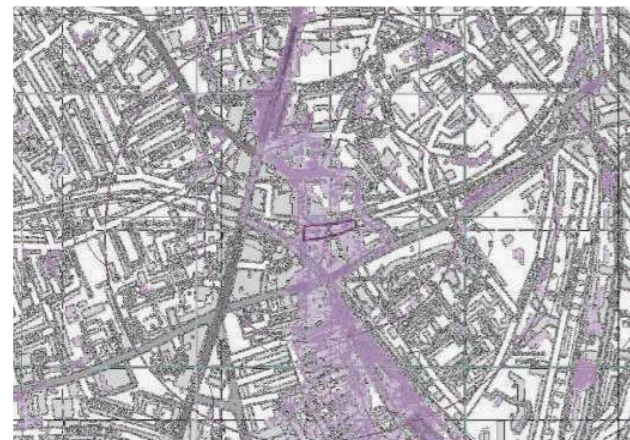


Figure 5.11 EA surface flood map

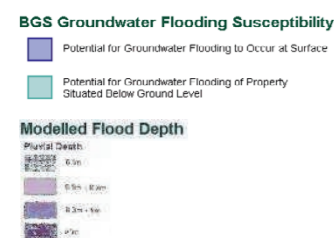


Figure 5.12 BGS & EA map key

5.5 Contamination

5.5.1 Unexploded ordnance

The Ministry of Defence has recorded the extent of damage to buildings during the raids in the Second World War and the possible locations of Unexploded Ordnance (UXO) in Central London.

It is known that many of the bombs that were dropped did not explode on impact and some of these are still present beneath the ground. Bomb detonators do not deteriorate and the explosives do not become inert over time. This presents an inherent health and safety risk as well as the possibility for a source of contamination. The problem can sometimes be exacerbated as some bombs are non ferrous meaning they require more sophisticated and expensive detection techniques.

Although the presence of UXO is not indicated for this site, it can be seen in a few of the surrounding properties. The risk of UXO should be evaluated in the project risk assessment and a specialist consultant should be engaged, if deemed appropriate, in the next stages of design.

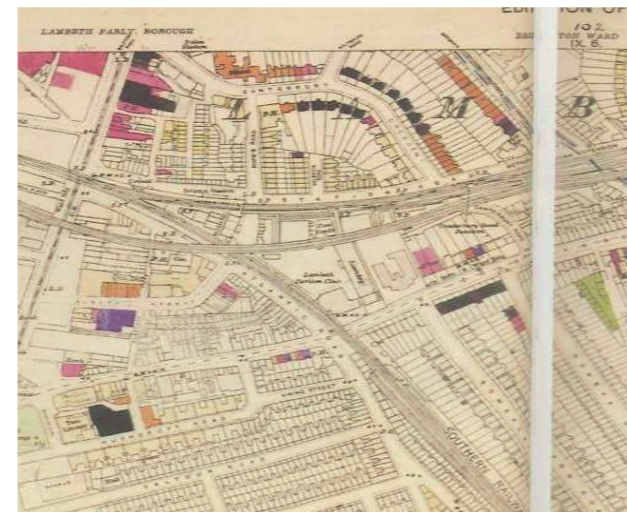


Figure 5.13 Bomb damage map



Figure 5.14 Bomb damage map key

5.5.2 Soil contamination

Ground contamination maps show that the site is bordered to the south by a site highlighted as potentially contaminated due to past industrial land uses.



Figure 5.15 Historic land use map

Historical Land Use

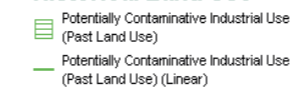


Figure 5.16 Historic land use map key

The following soil chemistry concentration values have been provided by BGS:

- Arsenic - levels measured below 15mg/kg (limit of 32 considered¹);
- Cadmium - levels measured below 1.8mg/kg;
- Chromium - levels measured between 60-90mg/kg;
- Lead - levels measured between 150-300mg /kg;
- Nickel - levels measured between 15-30mg/kg.

¹ Soil Guideline Values for inorganic arsenic in soil - Science Report SC050021 - Environment Agency

5.6 Ground stability

The site is ranked as very low risk for:

- Compressible Ground Stability Hazards;
- Collapsible Ground Stability Hazards;
- Landslide Ground Stability Hazards;
- Ground Dissolution Stability Hazards;
- Potential for Running Sand Ground Stability Hazards.

The site does however fall under moderate risk for

- Potential for Shrinking or Swelling Clay Ground Stability Hazards.

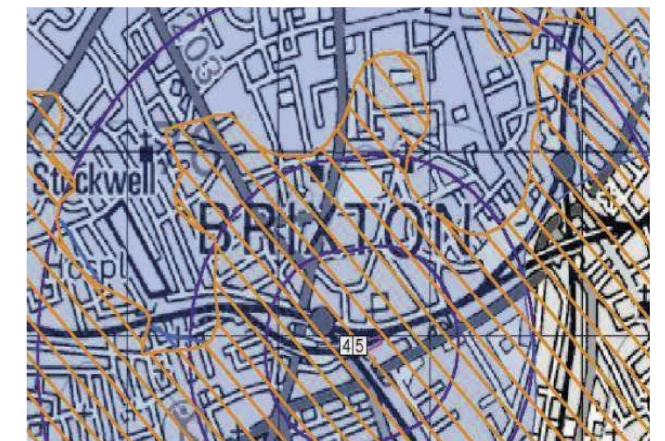


Figure 5.17 Ground stability data

Potential for Running Sand Ground Stability Hazards



Potential for Shrinking or Swelling Clay Ground Stability Hazards

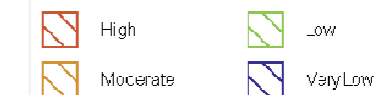


Figure 5.18 Ground stability data key

Appendix D

Thames Water sewer flooding history enquiry



Sewer Flooding

History Enquiry



AKT II Ltd

Search address supplied 20
Popes Road
London
SW9 8JH

Your reference 4599 Pope's Road Brixton

Our reference SFH/SFH Standard/2019_4097859

Received date 23 October 2019

Search date 23 October 2019



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



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0845 070 9148

Sewer Flooding

History Enquiry



Search address supplied: 20,Popes Road,London,SW9 8JH

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



0845 070 9148

Sewer Flooding

History Enquiry



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



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



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



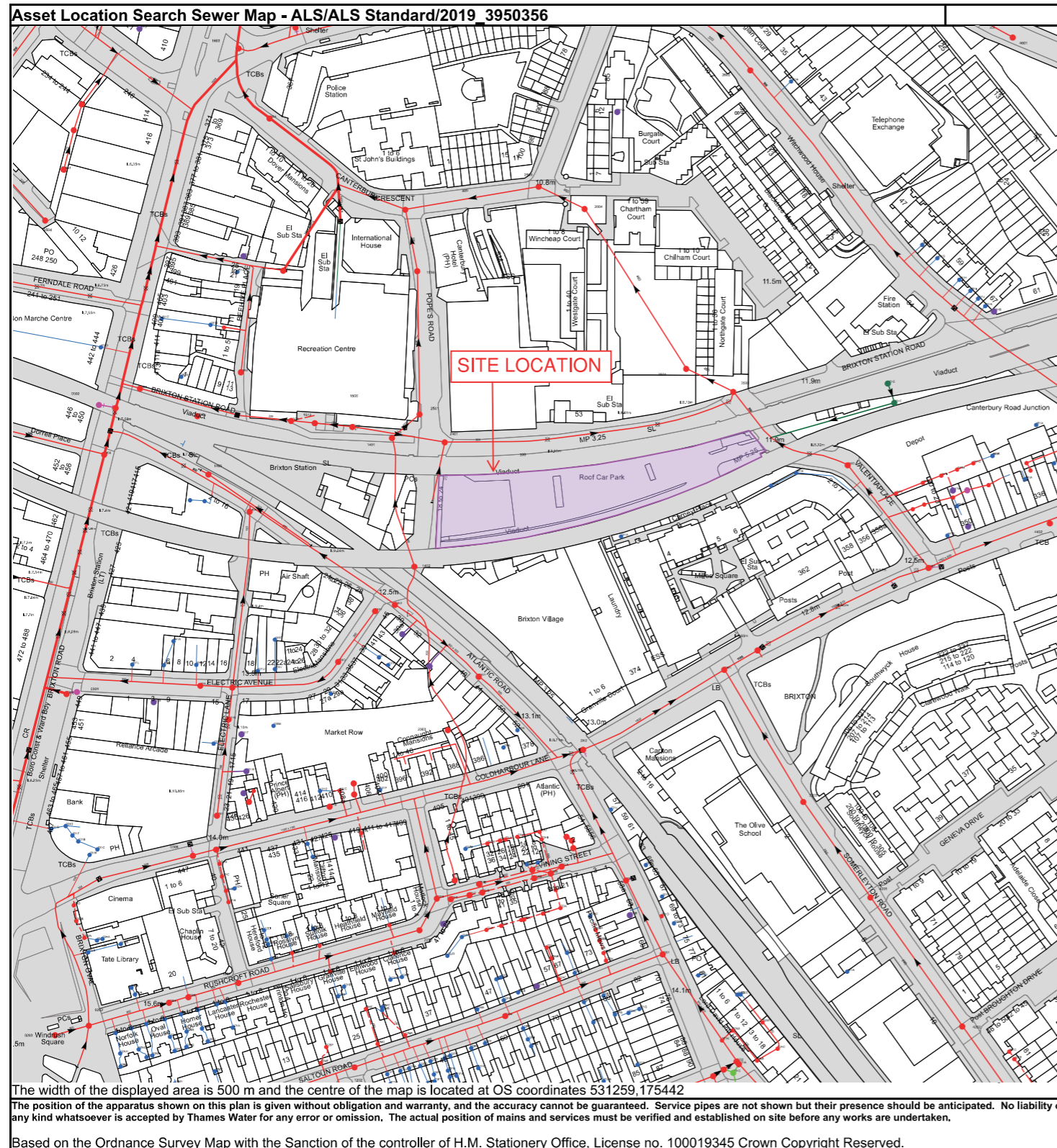
0845 070 9148

Appendix E

Thames Water Asset Map



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

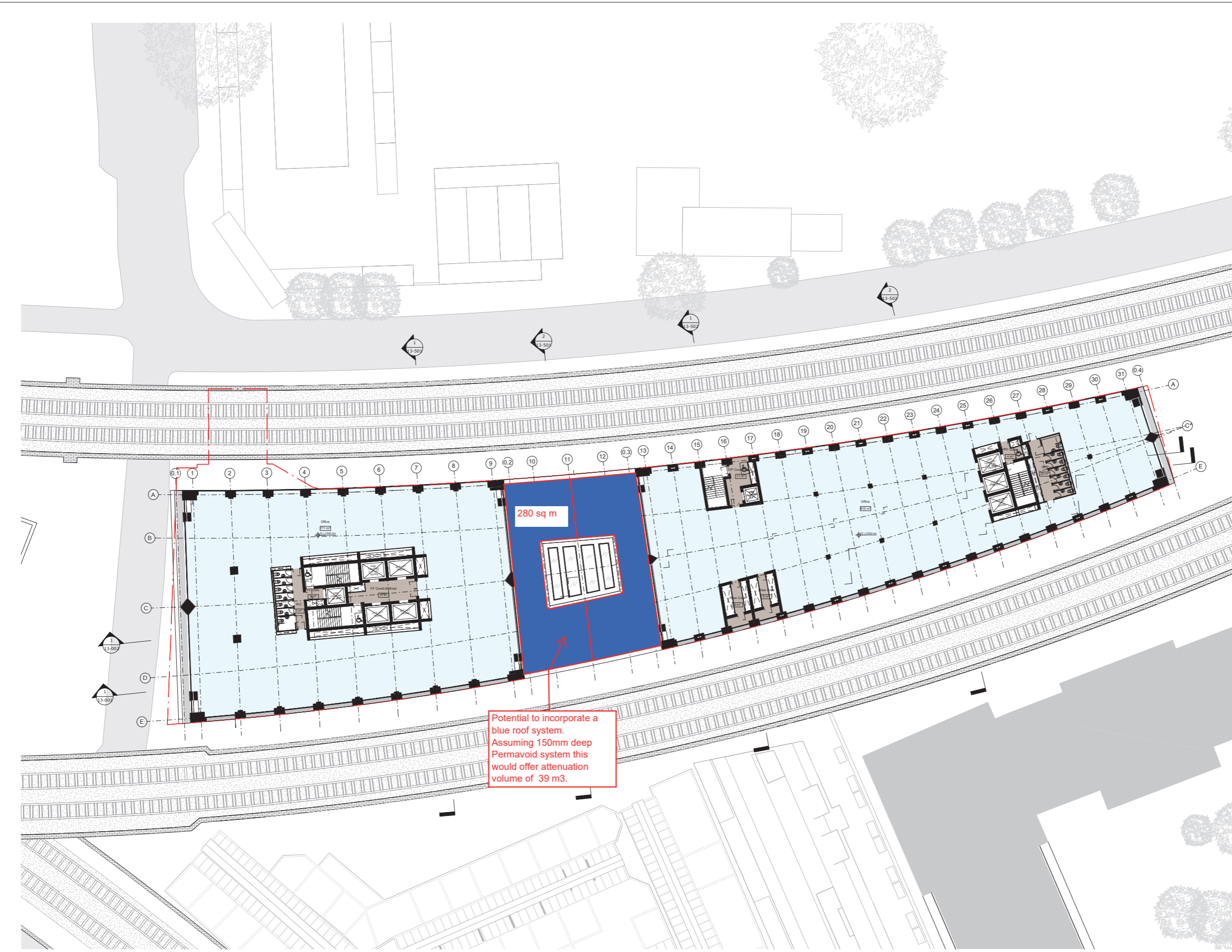


Manhole Reference	Manhole Cover Level	Manhole Invert Level
4601	12.21	n/a
451A	n/a	n/a
451B	n/a	n/a
451K	n/a	n/a
451J	n/a	n/a
451I	n/a	n/a
55BB	n/a	n/a
441I	n/a	n/a
341B	n/a	n/a
441H	n/a	n/a
4403	12.13	n/a
2401	12.14	9.63
1401	11.91	7.24
2501	11.82	7.15
451C	n/a	n/a
3502	11.71	7.94
451E	n/a	n/a
3501	11.62	7.82
451H	n/a	n/a
1510	10.92	6.97
451G	n/a	n/a
451F	n/a	n/a
1607	10.31	6.9
2604	10.68	7.34
2603	10.66	7.23
261A	n/a	n/a
361A	n/a	n/a
3603	n/a	n/a
531A	n/a	n/a
4402	12.74	n/a
44BD	n/a	n/a
441A	n/a	n/a
44CB	n/a	n/a
441D	n/a	n/a
441G	n/a	n/a
44CC	n/a	n/a
541D	n/a	n/a
54AI	n/a	n/a
441K	n/a	n/a
441F	n/a	n/a
54AG	n/a	n/a
131F	n/a	n/a
2302	n/a	n/a
231L	n/a	n/a
2303	n/a	n/a
231K	n/a	n/a
2301	12.73	10.13
3301	13.06	10.04
23BA	n/a	n/a
131P	n/a	n/a
131Q	n/a	n/a
3302	n/a	n/a
14BI	n/a	n/a
1403	12.58	n/a
4401	12.626	9.506
1402	n/a	n/a
241A	n/a	n/a
441B	n/a	n/a
441L	n/a	n/a
44BI	n/a	n/a
441E	n/a	n/a
44BH	n/a	n/a
44BG	n/a	n/a
441J	n/a	n/a
441M	n/a	n/a
44BE	n/a	n/a
341A	n/a	n/a
441C	n/a	n/a
22JM	n/a	n/a
22JL	n/a	n/a
22JK	n/a	n/a
22JJ	n/a	n/a
22JC	n/a	n/a
2203	13.87	n/a
22JT	n/a	n/a
22JS	n/a	n/a
22JI	n/a	n/a
22JE	n/a	n/a
22A1	n/a	n/a
22JQ	n/a	n/a
22JB	n/a	n/a
22JD	n/a	n/a
22JA	n/a	n/a
22JH	n/a	n/a
22JF	n/a	n/a
23JN	n/a	n/a
23CF	n/a	n/a
23JW	n/a	n/a
23JV	n/a	n/a
23CE	n/a	n/a
23JU	n/a	n/a

Appendix F

Blue/Green and Brown Roof Layout





General Notes:
 Drawing to be read in conjunction with the specification and all relevant drawings.
 Do not scale from this drawing.
 Contractor to check all dimensions on site. Adjaye Associates to be advised of any discrepancies between this drawing and site conditions immediately.

By Department Legend

- Office
- Servicing

Revision	Date	Description
R7	25/02/20	Design Freeze
R6	17/01/20	Design Freeze
R3	06/09/19	Revision 3
R2	21/06/19	Revision 2

Status: Hondo Enterprises Rev: R7

Client: Hondo Enterprises
 Project: Pope's Road Development

Drawing Title: GA L4 FOURTH & SIXTH FLOOR

Drawing No.: PRD-11-040

Scale: 1 : 200 @ A1 Drawn By: MZ, SC, PK, CF
 Date: 25/02/20 Checked By: MZ

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