

BP PFS, A406 PINKHAM WAY (WEST BOUND), NEW SOUTHGATE, N11 2UU

FLOOD RISK ASSESSMENT

Final Report v1.0
January 2023

Report Title	BP PFS, A406 Pinkham Way (West Bound), New Southgate, N11 2UU Flood Risk Assessment Final Report v1.0
Client	BP International Ltd
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Contents

Signature Sheet	i
Contents	ii
List of Figures & Appendices	iii
1 Introduction.....	1
1.1 Purpose of Report	1
1.2 Structure of the Report	1
1.3 Relevant Documents	1
2 Site Details and Proposed Development	2
2.1 Site Location	2
2.2 Existing and Proposed Development	2
2.3 Surface Waterbodies in the Vicinity of the Site.....	2
2.4 Topographic Levels	2
2.5 Ground Conditions	3
3 Planning Policy and Guidance	4
3.1 National Planning Policy and Policy Guidance	4
3.2 Local Planning Policy	5
3.3 Water Framework Directive	7
4 Review of Flood Risk.....	8
4.1 Historical Records of Flooding.....	8
4.2 Flood Risk from Rivers (Fluvial)	8
4.3 Flood Risk from Surface Water (Pluvial).....	9
4.4 Flood Risk from Reservoirs, Canals and Other Water Impounding Structures	9
4.5 Flood Risk from Groundwater	9
4.6 Flood Risk Mitigation.....	10
4.7 Flood Risk Elsewhere.....	10
4.8 Flood Risk Sequential Test.....	10
5 Summary and Recommendations	11

List of Figures

Figure 1: Site Location and Location of Surface Waterbodies 2

Figure 2: Digital Terrain Model from LiDAR Data..... 3

Figure 3: Flood Map for Planning..... 8

Figure 4: Flood Risk from Surface Water 10

List of Appendices

Appendix A: Site Layout Plan

Appendix B: Topographic Survey

Appendix C: Environment Agency Model Outputs

1 INTRODUCTION

1.1 Purpose of Report

Weetwood Services Ltd ('Weetwood') has been instructed by BP International Ltd ("the Applicant") to prepare a Flood Risk Assessment (FRA) report to accompany a detailed planning application for the proposed redevelopment of the petrol filling station on the westbound carriageway of the A406 Pinkham Way, New Southgate, London, N11 2UU ("the site").

The assessment has been undertaken in accordance with the requirements of the revised National Planning Policy Framework (NPPF) updated on 20 July 2021 and the Planning Practice Guidance (PPG) updated on 25 August 2022.

1.2 Structure of the Report

The report is structured as follows:

- Section 1** Introduction and report structure
- Section 2** Provides background information relating to the development site
- Section 3** Presents national and local flood risk planning policy
- Section 4** Assesses the potential risk of flooding to the development site
- Section 5** Presents a summary of key findings and the recommendations

1.3 Relevant Documents

The assessment has been informed by the following documents:

- The London Plan, 2021
- Haringey Development Management DPD, Haringey London Borough Council, July 2017
- Haringey's Local Plan Strategic Policies 2013 – 2026, Haringey London Borough Council, March 2013 (consolidated with alterations since 2017)
- Strategic Flood Risk Assessment Level 2, Haringey London Borough Council, Draft Report, February 2015
- Preliminary Flood Risk Assessment, Haringey London Borough Council, Final Draft Report, May 2011
- North London Strategic Flood Risk Assessment, August 2008

2 SITE DETAILS AND PROPOSED DEVELOPMENT

2.1 Site Location

The approximately 0.28 ha site is located to the south of Pinkham Way, New Southgate, London at Ordnance Survey National Grid Reference TQ 291 918, as shown in **Figure 1**.

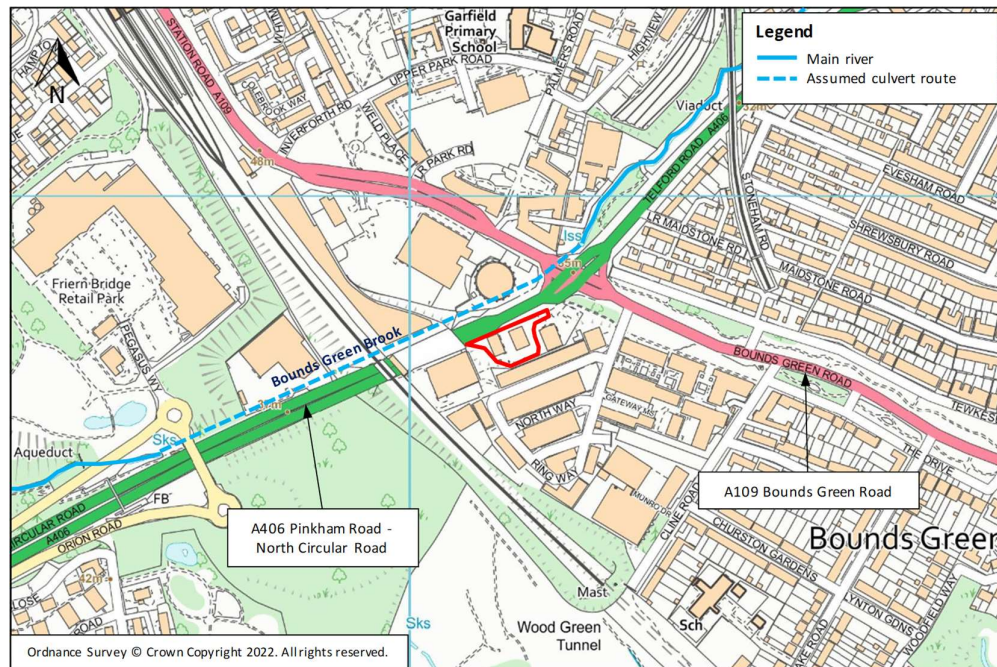


Figure 1: Site Location and Location of Surface Waterbodies

2.2 Existing and Proposed Development

The proposals are for the redevelopment of the existing petrol filling station to an EV charging hub and a single storey extension (107 m²) to the existing retail building. Vehicular access will continue to be provided via Pinkham Way.

The proposed site plan is provided in **Appendix A**.

The NPPF classifies buildings used for shops and car parking as Less Vulnerable to flood risk. EV charging hubs are not specifically listed in Annex 3 of the NPPF ("Flood risk vulnerability classification") but are considered to also be a Less Vulnerable use.

2.3 Surface Waterbodies in the Vicinity of the Site

Bounds Green Brook is located approximately 30 m to the north of the site and flows in a north-easterly direction towards its confluence with Pymmes Brook (a tributary of the River Lee) approximately 940 m north-east of the site. Approximately 400 m south-west of the site, Bounds Green Brook flows into a culvert and re-emerges approximately 100 m to the north-east of the site (refer **Figure 1**). Both watercourses are designated main rivers.

2.4 Topographic Levels

A topographic survey of the site has been undertaken by Cadmap Ltd (**Appendix B**) and LiDAR data has been used to develop a digital terrain model of the site and surrounding area as illustrated in **Figure 2**.

Site levels are shown to gently fall towards Pinkham Way with levels ranging between 36.03 to 36.67 m AOD. The existing retail building has a finished floor level of 36.46 to 36.51 m AOD. Ground levels along Pinkham Way are shown to range between 35.60 - 35.99 m AOD adjacent to the site.

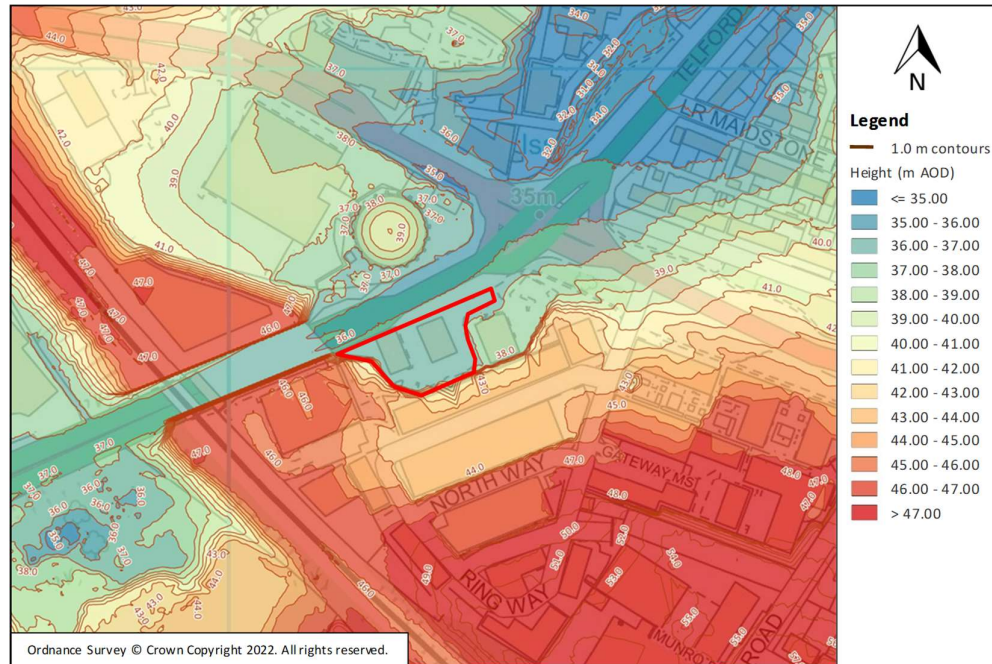


Figure 2: Digital Terrain Model from LiDAR Data

2.5 Ground Conditions

According to the Soilsapes soils dataset produced by the Cranfield Soil and AgriFood Institute¹, soil conditions at the site and within the surrounding area are described as slowly permeable seasonally wet loamy and clayey soils.

The National Geoscience Data Centre's Single Onshore Borehole Index² holds records of several boreholes in the vicinity of the site. According to the records, ground conditions within the vicinity of the site comprise of made ground to varying depths underlain by clay.

British Geological Survey mapping of surface geology³ indicates the underlying bedrock formation comprises clay, silt and sand (London Clay Formation). No superficial deposits are recorded.

According to the MAGIC website⁴ the underlying bedrock is classified as an Unproductive aquifer. The site is not shown to be located within a designated groundwater source protection zone.

¹ www.landis.org.uk/soilsapes/

² <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

³ <https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>

⁴ <https://magic.defra.gov.uk/MagicMap.aspx>

3 PLANNING POLICY AND GUIDANCE

3.1 National Planning Policy and Policy Guidance

The thrust of national planning policy, as articulated in the NPPF is that inappropriate development in areas at risk of flooding should be avoided where possible, as summarised below:

- Inappropriate development in areas at risk of flooding should be avoided and that development should be directed away from areas at highest risk (whether existing or future), but where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere (NPPF para. 159).
- The policy of seeking to steer development to areas with the lowest risk of flooding, from any source, is implemented through the application of the flood risk Sequential Test. Development should not be allocated or permitted if there are reasonably available sites, appropriate for the proposed development in areas with a lower risk of flooding. The sequential approach should be used in areas known to be at risk now or in the future from any form of flooding (NPPF para. 162).
- If it is not possible for development to be located in zones with a lower risk of flooding (taking into account wider sustainable development objectives) the Exception Test may have to be applied. The need for the test will depend on the potential vulnerability of the site and of the vulnerability of the development proposed (as set out in Annex 3 of NPPF; also PPG Table 2) (NPPF para. 163). For example, the Exception Test need not be applied for less vulnerable development in any flood zone, or for more vulnerable development in flood zones 1 or 2.
- Where the Exception Test must be applied, application of the test for development proposals at the application stage should be informed by a site-specific flood risk assessment. For the test to be passed it should be demonstrated that: (a) the development would provide wider sustainability benefits to the community that outweigh the flood risk; (b) and the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall (NPPF para. 164). Both elements of the test should be satisfied for the development to be permitted (NPPF para. 165).
- A site-specific flood risk assessment should be provided for all development in flood zones 2 and 3 [whilst] in flood zone 1, an assessment should accompany all proposals involving: sites of 1 ha or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use (NPPF para. 167).
- Development should not increase flood risk elsewhere (NPPF para. 167).
- Development should only be allowed in areas at risk of flooding where the flood risk assessment (and the sequential and exception tests, as required), demonstrate that: a) within the site, the most vulnerable development is located in areas of lowest flood risk (unless there are overriding reasons to prefer a different location); b) the development is appropriately flood resistant and resilient such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment; c) the development incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate; d) any residual (flood) risk can be safely managed; and e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan (NPPF para.167).
- Applications for some minor development and changes of use should not be subject to the sequential or exception tests (NPPF para. 168). The exceptions are stated in Footnote 56.
- Major development should incorporate sustainable drainage systems unless there is clear evidence that this would be inappropriate. The systems should: a) take account of advice from the lead local flood authority; b) have appropriate proposed minimum operational standards; c) have maintenance arrangements in place to ensure an acceptable standard of operation for the lifetime of the development; and d) where possible, provide multifunctional benefits (NPPF para. 169).

Guidance on application of the sequential and exception test is provided in the PPG. For example:

- The approach is designed to ensure that areas at little or no risk of flooding from any source are developed in preference to areas at higher risk. This means avoiding, so far as possible, development in

current and future (i.e. taking climate change into account) medium and high flood risk areas considering all sources of flooding including areas at risk of surface water flooding (PPG para. 023).

- Where it is not possible to locate development in low risk areas, the Sequential Test should go on to compare reasonably available sites within medium risk areas and then, only where there are no reasonably available sites in low and medium risk areas, within high risk areas (PPG para. 024).
- Initially, the presence of existing flood risk management infrastructure should be ignored, as the long-term funding, maintenance and renewal of this infrastructure is uncertain. Climate change will also impact upon the level of protection infrastructure will offer throughout the lifetime of development (PPG para. 024).
- The Sequential Test should be applied to 'Major' and 'Non-major development' proposed in areas at risk of flooding, but it will not be required where; the site has been allocated for development and subject to the test at the plan making stage (provided the proposed development is consistent with the use for which the site was allocated and provided there have been no significant changes to the known level of flood risk to the site, now or in the future which would have affected the outcome of the test); the site is in an area at low risk from all sources of flooding, unless the Strategic Flood Risk Assessment, or other information, indicates there may be a risk of flooding in the future; the application is for a development type that is exempt from the test, as specified in footnote 56 of the NPPF (PPG para. 027).
- For individual planning applications subject to the Sequential Test, the area to apply the test will be defined by local circumstances relating to the catchment area for the type of development proposed. For some developments this may be clear, for example, the catchment area for a school. In other cases, it may be identified from other Plan policies. For example, where there are large areas in Flood Zones 2 and 3 (medium to high probability of flooding) and development is needed in those areas to sustain the existing community, sites outside them are unlikely to provide reasonable alternatives. Equally, a pragmatic approach needs to be taken where proposals involve comparatively small extensions to existing premises (relative to their existing size), where it may be impractical to accommodate the additional space in an alternative location. For nationally or regionally important infrastructure the area of search to which the Sequential Test could be applied will be wider than the local planning authority boundary (PPG para. 027).
- 'Reasonably available sites' are those in a suitable location for the type of development with a reasonable prospect that the site is available to be developed at the point in time envisaged for the development. These could include a series of smaller sites and/or part of a larger site if these would be capable of accommodating the proposed development. Such lower-risk sites do not need to be owned by the applicant to be considered 'reasonably available' (PPG para. 028).
- The Exception Test should only be applied as set out in Table 2 [of the PPG ("Flood Risk Vulnerability and Flood Zone Incompatibility")] and only if the Sequential Test has shown that there are no reasonably available, lower risk sites, suitable for the proposed development, to which the development could be steered (PPG para. 032).

3.2 Local Planning Policy

3.2.1 Greater London Authority London Plan, 2021

Policy SI 12 Flood Risk Management states:

- Current and expected flood risk from all sources (as defined in paragraph 9.2.12) across London should be managed in a sustainable and cost-effective way in collaboration with the Environment Agency, the Lead Local Flood Authority, developers and infrastructure providers.*
- Development Plans should use the Mayor's Regional Flood Risk Appraisal and their Strategic Flood Risk Assessment as well as Local Flood Risk Management Strategies, where necessary, to identify areas where particular and cumulative flood risk issues exist and develop actions and policy approaches aimed at reducing these risks. Boroughs should cooperate and jointly address cross-boundary flood risk issues including with authorities outside London.*
- Development proposals should ensure that flood risk is minimised and mitigated, and that residual risk is addressed. This should include, where possible, making space for water and aiming for development to be set back from the banks of watercourses.*

- D. *Developments Plans and development proposals should contribute to the delivery and the measures set out in the Thames Estuary 2100 Plan. The Mayor will work with the Environment Agency and relevant local planning authorities, including authorities outside London, to safeguard an appropriate location for a new Thames Barrier.*
- E. *Development proposals for utility services should be designed to remain operational under flood conditions and buildings should be designed for quick recovery following a flood.*
- F. *Development proposals adjacent to flood defences will be required to protect the integrity of flood defences and allow access for future maintenance and upgrading. Unless exceptional circumstances are demonstrated for not doing so, development proposals should be set back from flood defences to allow for any foreseeable future maintenance and upgrades in a sustainable and cost-effective way.*
- G. *Natural flood management methods should be employed in development proposals due to their multiple benefits including increasing flood storage and creating recreational areas and habitat.*

3.2.2 Haringey's Local Plan Strategic Policies 2013 – 2026, March 2013 (consolidated with alterations since 2017)

Policy SP5 Water Management and Flooding states:

The Council will require all development in Haringey to be water efficient during construction and operation and to reduce all forms of flood risk. All development shall:

- *Improve the water environment, water quality and drainage systems;*
- *Minimise water use and illustrate how development would contribute to general and flash flooding;*
- *Take account of flood risk vulnerability classification as set out in paragraph 100 of the NPPF and will apply the NPPF Sequential Test and Exception Test;*
- *Implement measures to prevent (or mitigate as last resort) local surface water and downstream flooding;*
- *Implement Sustainable Drainage Systems from strategic to individual site level to improve water attenuation, quality and amenity;*
- *Restore and enhance the Blue Ribbon Network including Pymmes Brook, Moselle Brook, the River Lee and its tributaries, deculverting wherever feasible, to improve water quality and amenity of these waterways and to help reduce flood risk (in line with London River Action Plan); and*
- *Require higher resilience and levels of flood protection for critical infrastructure to ensure the protection of essential services such as water and power.*

3.2.3 Haringey Development Management DPD, July 2017

Policy DM24 Managing and Reducing Flood Risk states:

- A. *The Council will ensure that all proposals for new development avoid and reduce the risk of flooding to future occupants and do not increase the risk of flooding.*
- B. *All proposals for new development within Flood Zone 2 and 3a will be required to provide sufficient evidence for the Council to assess whether the requirements of the Sequential Test and Exception Test, where required, have been satisfied. Proposals must be informed by a site specific Flood Risk Assessment (FRA) taking account of all potential sources of flooding and should:*
 - a. *Demonstrate the application of a sequential approach for the development of individual sites to ensure that the most vulnerable land uses are located in areas of the site that are at lowest risk of flooding;*
 - b. *Preserve overland flood and flow routes and ensure there is no net loss of flood storage. Adequate flood storage and compensation should be provided on site, or if this is not possible, provided off site where circumstances allow;*
 - c. *Where appropriate, set out the mitigation measures that will be incorporated on site to manage residual flood risk including:*
 - i. *Finished floor levels set no lower than 300mm above the 1 in 100 chance in any given year, including an allowance for climate change, flood level; and*
 - ii. *Ensure safe access and egress for future users of the development or an appropriate emergency evacuation plan.*
 - d. *Contribute to naturalising watercourses where opportunities arise.*

- C. *All proposals for new development will be required to:*
 - a. *Manage and reduce surface water run-off; and*
 - b. *Manage water and waste water discharges.*
- D. *With the exception of water compatible uses and essential infrastructure, development in areas designated in Haringey's Strategic Flood Risk Assessment as being within Flood Zone 3b will not be permitted.*

3.3 Water Framework Directive

The Water Framework Directive (WFD) provides a legal framework for the protection, improvement and sustainable use of inland surface waters, groundwater, transitional waters, and coastal waters across England, and seeks to:

- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters
- Achieve at least 'good' status for all waterbodies by 2015
- Promote the sustainable use of water as a natural resource
- Conserve habitats and species that depend directly on water
- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment
- Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
- Contribute to mitigating the effects of floods and droughts.

The WFD applies to any proposed development which has the potential to impact on a waterbody. Where this is the case, the Environment Agency may require evidence demonstrating that the proposed development does not compromise the aims of the WFD.

4 REVIEW OF FLOOD RISK

4.1 Historical Records of Flooding

The Environment Agency Recorded Flood Outlines Map⁵, the 2008 and 2015 Strategic Flood Risk Assessment and the 2011 Preliminary Flood Risk Assessment do not hold any records of flooding at or within the immediate vicinity of the site.

4.2 Flood Risk from Rivers (Fluvial)

The Environment Agency Flood Map for Planning (Rivers and Sea) ⁶ (**Figure 3**) indicates the site to be predominantly located in flood zone 2 with the south-western/southern boundary abutting flood zone 1. This is reiterated on Appendix B / Map 09 of the 2015 Strategic Flood Risk Assessment ("Haringey Level 2 SFRA Flood Zones"). Pinkham Way, adjacent to the site, is indicated to be located in flood zone 3.

Table 1 of the PPG defines flood zones as follows⁷:

- Flood zone 1: Low Probability. Land having a less than 1 in 1,000 annual probability of river or sea flooding
- Flood zone 2: Medium Probability. Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding or between a 1 in 200 and 1 in 1,000 annual probability of sea flooding
- Flood zone 3a: High Probability. Land having a 1 in 100 or greater annual probability of river flooding or a 1 in 200 or greater annual probability of sea flooding
- Flood zone 3b: Functional Floodplain. Land where water from rivers or the sea has to flow or be stored in times of flood. Land having a 1 in 30 or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as a 1 in 1,000 annual probability of flooding).

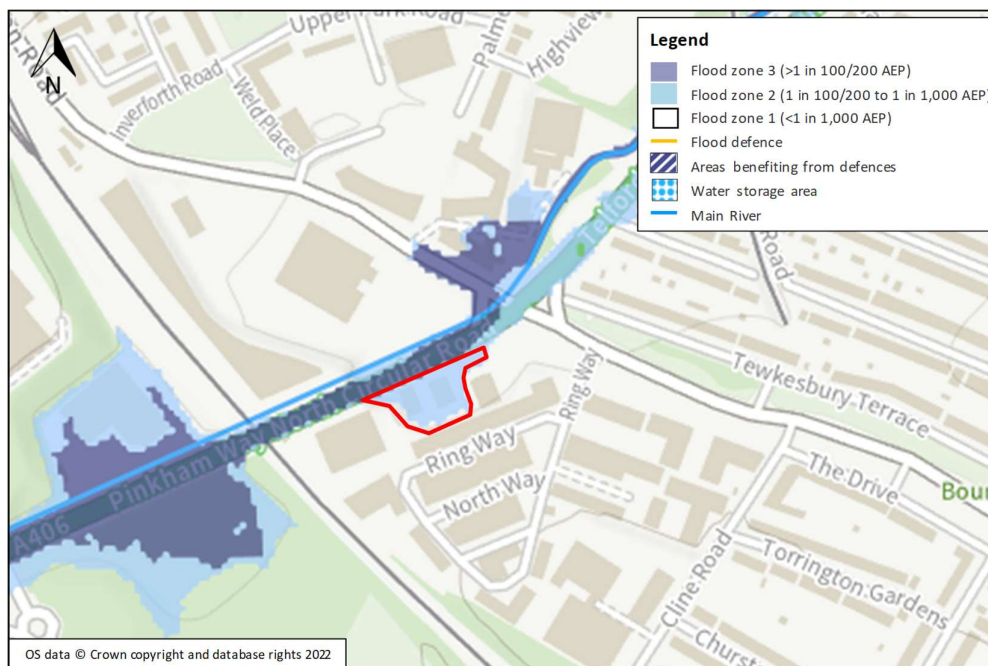


Figure 3: Flood Map for Planning

Source: gov.uk website; Accessed: January 2023

⁵ <https://environment.data.gov.uk/DefraDataDownload/?mapService=EA/RecordedFloodOutlines&Mode=spatial>

⁶ <https://flood-map-for-planning.service.gov.uk/>

⁷ <https://www.gov.uk/guidance/flood-risk-and-coastal-change#flood-zone-and-flood-risk-tables>

A 1D-2D hydraulic model of the River Lee was developed by CH2M Hill as part of the River Lee 2D Flood Mapping Study (2014). The River Lee model covers the site and surrounding area and assesses the risk of flooding for the present day 1 in 20, 1 in 100, 1 in 200 and 1 in 1,000 AEP events and the 1 in 100 AEP event plus 20% climate change.

In respect of the site, the model outputs (provided in **Appendix C**) indicate the following:

- The site does not flood during the present day 1 in 20, 1 in 100 and 1 in 200 AEP events and during the 1 in 100 AEP event plus 20% climate change
- The majority of the site is indicated to flood during the 1 in 1,000 AEP event, with flood levels varying between 36.54 to 36.63 m AOD. This corresponds to a maximum depth of flooding at the retail unit of up to 170 mm.

Pinkham Way adjacent to the site is indicated to flood during the 1 in 100 AEP event plus 20% climate change to a maximum flood level of 36.14 to 36.35 m AOD, resulting in a maximum flood depth of up to approximately 0.56 m along the road.

The current Environment Agency guidance on climate change allowances (May 2022) advises that for Less Vulnerable development in flood zone 2, the Central allowance should be used to assess flood risk for the lifetime of the development. The Central allowance for the London management catchment is +17% (2080s).

Given that the site is indicated not to flood during the 1 in 100 AEP event plus 20% climate change, it is therefore the case that the site would also not flood during the 1 in 100 AEP event plus 17% climate change.

It is concluded that the site is at a Medium risk of flooding from rivers (fluvial).

4.3 Flood Risk from Surface Water (Pluvial)

The Flood Risk from Surface Water map (**Figure 4**) indicates that the site is predominantly at Very Low risk of flooding from pluvial surface water flooding.

4.4 Flood Risk from Reservoirs, Canals and Other Water Impounding Structures

There are no canals or other impounded waterbodies located within the immediate vicinity of the site. The Flood Risk from Reservoirs map (not shown) indicates that the site is not at risk of flooding from such sources.

It is concluded that the site is not at risk of flooding from reservoirs, canals or other water impounding structures.

4.5 Flood Risk from Groundwater

The JBA Groundwater Flood Risk Indicator map (not shown) indicates that the site is at a Negligible risk during a 1 in 100 AEP groundwater flood event.

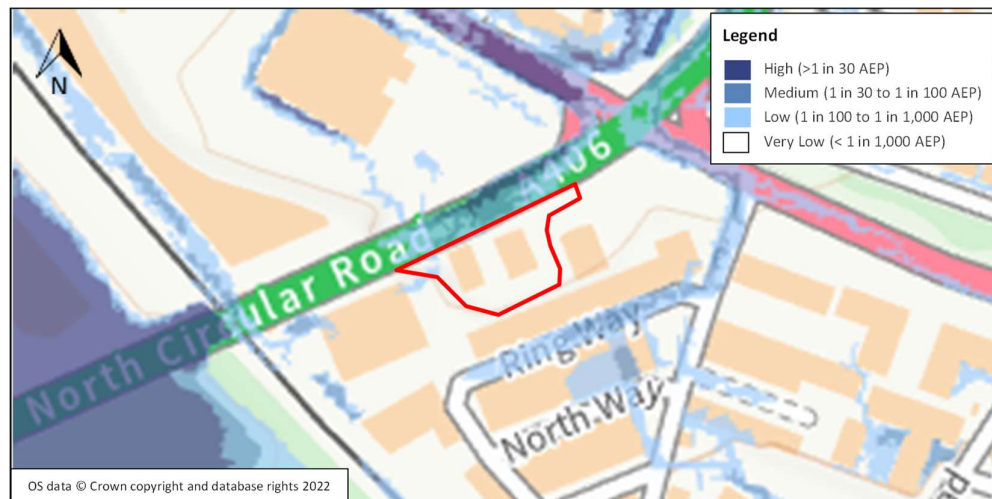


Figure 4: Flood Risk from Surface Water

Source: gov.uk website; Accessed: January 2023

4.6 Flood Risk Mitigation

The risk of flooding to the proposed EV station from all identified sources is assessed to be low, with the exception of fluvial flood risk from Bounds Green Brook which is assessed to be a medium risk.

The risk of flooding will be mitigated through the implementation of the following measures:

- Finished floor levels of the extension should be set no lower than the existing shop. This will ensure that no flooding of the shop occurs during the 1 in 100 AEP event plus climate change.
- The latest best practice flood resistant and resilient construction techniques should be fitted into the extension and retrofitted to the existing building (where feasible) e.g. raised power sockets, non-return valves on ground floor drainage, in line with government guidance⁸ to a minimum height of 170 mm i.e. 36.63 m AOD which is the maximum 1 in 1,000 AEP flood level indicated at the existing retail unit. This would also provide an approximate 450 mm freeboard above the 1 in 100 AEP event plus 20% climate change flood level adjacent to the site on Pinkham Way. This measure will ensure that the retail unit is resilient to flooding, even during an extreme, present day 1 in 1,000 AEP event.
- It is recommended that a Flood Warning and Evacuation Plan is prepared in consultation with Haringey London Borough Council emergency planning team. The site is included in an Environment Agency flood alert area (Lower Lee Tributaries). This provides the opportunity for the relevant response procedures set out in the plan to be invoked in response to receipt of a flood warning from the Environment Agency

4.7 Flood Risk Elsewhere

The proposed extension is not in an area at risk of flooding in up to a 1 in 100 AEP fluvial event including an allowance for climate change. As such the proposals would not be expected to impact flood risk elsewhere and no compensatory flood storage would need to be provided on site.

4.8 Flood Risk Sequential Test

NPPF para. 168 (Footnote 56) states that proposals for minor development (non-residential extensions with a footprint of less than 250 m²) and changes of use, except for changes of use to a caravan, camping or chalet site, or to a mobile home or park home site, should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments (as set out in NPPF Footnote 55).

⁸ Guidance on the Code of Practice for Property Flood Resilience, Edition 2, C790B. CIRIA London 2020.

5 SUMMARY AND RECOMMENDATIONS

This report has been prepared on behalf of BP International Ltd and relates to the proposed redevelopment of the petrol filling station on the westbound carriageway of the A406 Pinkham Way, New Southgate, London, N11 2UU.

The proposals are for the redevelopment of the existing BP petrol filling station to an EV charging hub and an extension to the existing retail building (107 m²).

The Environment Agency Flood Map for Planning indicates the site to be predominantly located in flood zone 2 with the south-western/southern boundary abutting flood zone 1.

The NPPF states that proposals for minor development (non-residential extensions with a footprint of less than 250 m²) should not be subject to the sequential or exception tests.

Detailed modelling of Bounds Green Brook indicates that the site is not at risk of flooding during the present day 1 in 20, 1 in 100 and 1 in 200 AEP events and during the 1 in 100 AEP event plus 20% climate change. However, the majority of the site is indicated to flood to a depth of 70 - 170 mm during the 1 in 1,000 AEP event. Pinkham Way is indicated to flood to a depth of up to 560 mm during the 1 in 100 AEP event plus 20% climate change adjacent to the site.

The site is indicated to be at Negligible/Very Low risk of flooding from all other known sources.

The risk of flooding to the proposed EV station from Bounds Green Brook will be mitigated through the implementation of the following measures:

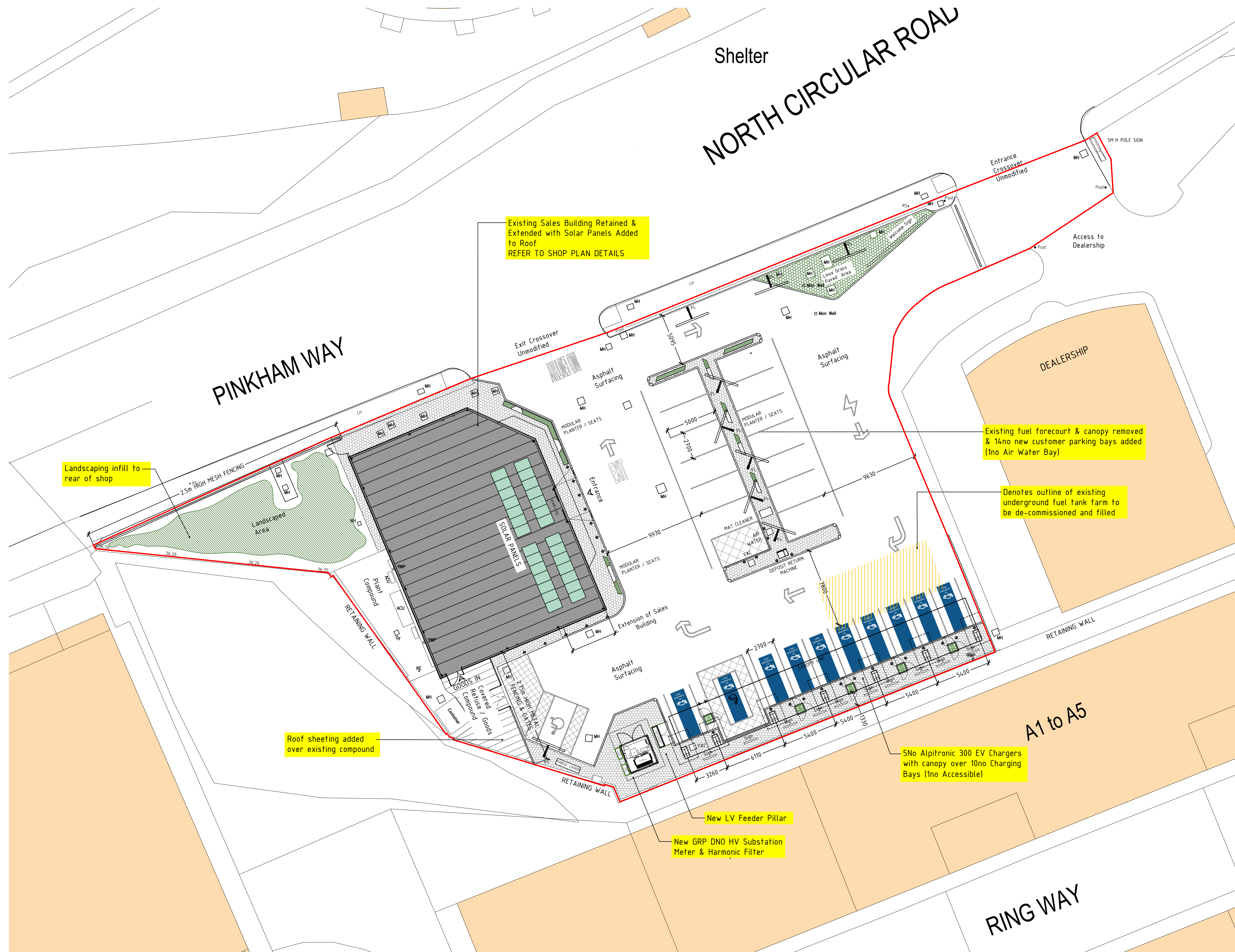
- Finished floor levels of the extension to be set no lower than the existing building;
- The latest best practice flood resistant and resilient construction techniques should be fitted into the extension and retrofitted to the existing building (where feasible) to a minimum height of 170 mm above the finished floor level;
- The implementation of a Flood Warning and Evacuation Plan.

The proposals would not be expected to impact flood risk elsewhere.

In conclusion, this report demonstrates that the proposed development may be completed in accordance with the requirements of planning policy.

APPENDIX A

Site Layout Plan



GENERAL NOTES

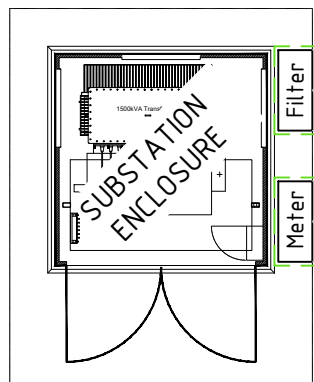
This drawing has been prepared for the sole purpose of obtaining planning permission for a Electric Vehicle Charging Installation

This drawing is to be read in conjunction with drawings numbered;
20 - Existing Site Layout
21 - Existing Site Elevations
22 - Proposed Site Layout
23 - Proposed Site Elevations
24 - Sales Building Details
25 - EV Canopy Details
26 - Proposed Equipment Details

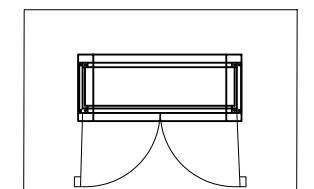
OS Site Location Plan

Any advertisements are indicative and are subject to a separate advertisement application.

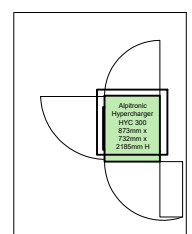
SCHEDULE / LEGEND



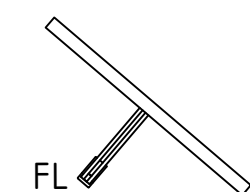
DENOTES TYPICAL DNO HV/LV
GRP SUBSTATION + METER BOX
Enclosure 2.8m x 2.8m
METERING & HARMONIC FILTER
GRP CABINET
Envico Engineering Ltd
Roadside Range Type 'O'
1065mm x 540mm x 1273mm H



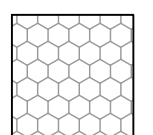
DENOTES LV PILLAR ENCLOSURE
Schneider
Unit Size 2140mm x 665mm x 1583mm H



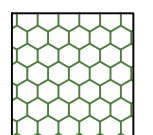
300 KW ALPITRONIC HYPERCHARGER
HYC 300
Unit Size 873mm x 732mm x 2185mm H



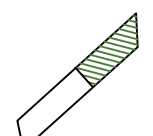
DENOTES POLE MOUNTED GALVANISED
STREET LIGHTING
Unit Size 3420mm x 1418mm x 3650mm H



DENOTES LINUX PAVING - RESIN FILLED



DENOTES LINUX PAVING - GRASS FILLED



DENOTES MODULAR SEATING / PLANTER
VARIOUS SIZES

D	12.01.23	Further revisions from BP comments	PSB
C	20.12.22	Revisions from concept design document / measured survey	PSB
B	27.09.22	Revised building footprint	PSB
A	12.08.22	Revised to MM comments	PSB

NR	DATE	DESCRIPTION
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REVISIONS	
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STATUS	PLANNING DRAWING
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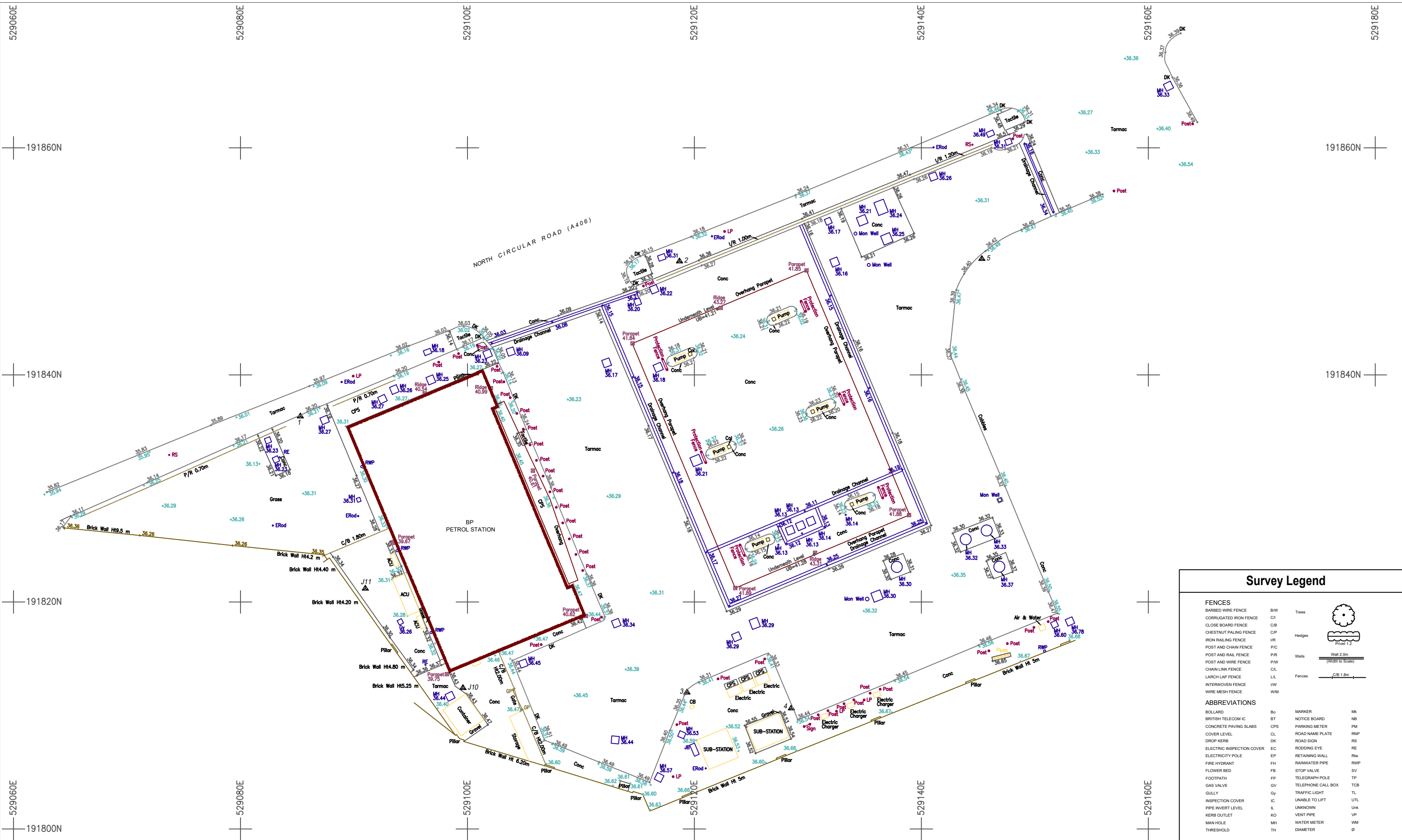
BP Pulse Breckland, Linstead Wood Milton Keynes Buckinghamshire MK14 6GY	PINKHAM WAY SF CONNECT A406 NORTH CIRCULAR BOUNDS GREEN, LONDON N11 2UU
---	---

DRAWN: JP DATE: 04.08.2022 DESIGN CHECKED: PSB DATE: 20.12.22 APPROVED: - DATE: - ATRAK CHECKED: - DATE: - SCALE: 1:200@A1	PROPOSED SITE LAYOUT
SCALED DIMENSIONS SHOULD NOT BE TAKEN FROM THIS DRAWING (APPROPRIATE FOR A1 ONLY)	
ARCHITECT: MBH	

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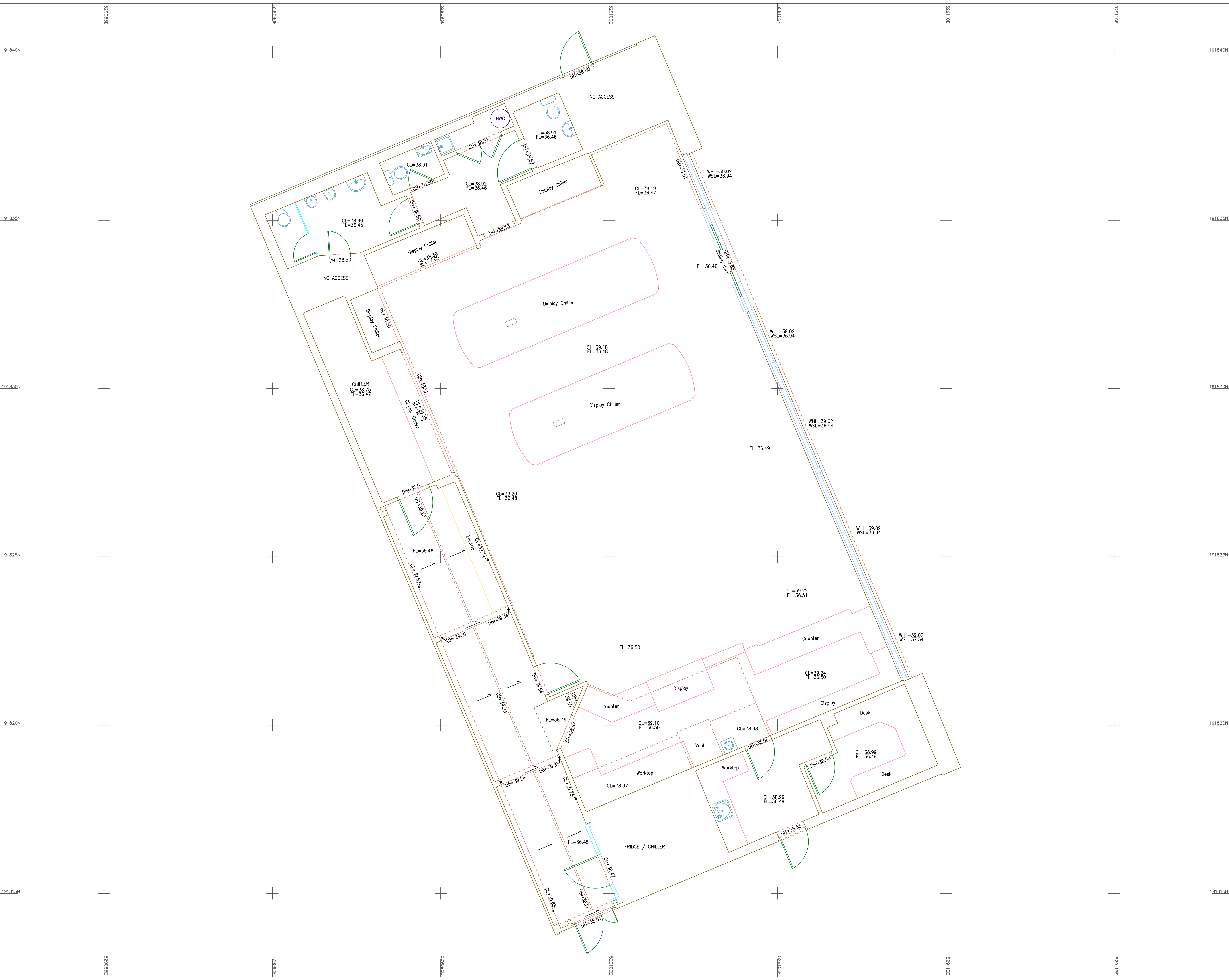
APPENDIX B

Topographic Survey



Survey Legend			
FENCES			
BARBED WIRE FENCE	B/W	Trees	
CORRUGATED IRON FENCE	CA	Hedges	
CLOSE BOARD FENCE	C/B	Privet 1.2	
CHESTNUT PALING FENCE	C/P	Walls	
IRON RAILING FENCE	I/R	Wall 2.0m	
POST AND CHAIN FENCE	P/C	(Width to Scale)	
POST AND RAIL FENCE	P/R	Fences	
POST AND WIRE FENCE	P/W		
CHAIN LINK FENCE	C/L		
LARCH LAP FENCE	L/L		
INTERWOVEN FENCE	I/W		
WIRE MESH FENCE	W/M		
ABBREVIATIONS			
BOLLARD	Bo	MARKER	Mk
BRITISH TELECOM IC	BT	NOTICE BOARD	NB
CONCRETE PAVING SLABS	CPS	PARKING METER	PM
COVER LEVEL	CL	ROAD NAME PLATE	RNP
DROP KERB	DK	ROAD SIGN	RS
ELECTRIC INSPECTION COVER	EC	RODDING EYE	RE
ELECTRICITY POLE	EP	RETAINING WALL	Rw
FIRE HYDRANT	FH	RAINWATER PIPE	RWP
FLOWER BED	FB	STOP VALVE	SV
FOOTPATH	FP	TELEGRAPH POLE	TP
GAS VALVE	GV	TELEPHONE CALL BOX	TCB
GULLY	Gy	TRAFFIC LIGHT	TL
INSPECTION COVER	IC	UNABLE TO LIFT	UTL
PIPE INVERT LEVEL	IL	UNKNOWN	Unk
KERB OUTLET	KO	VENT PIPE	VP
MAN HOLE	MH	WATER METER	WM
THRESHOLD	TH	DIAMETER	Ø

JOB NO: CMU/22340/T	SCALE: 1:300m @ A3	DRAWN: WB	DATE: 30.11.2022	NOTES:	NORTH:	CLIENT:
REVISION:	LEVELLING: OS GPS	PROJECT TITLE: Topographical Survey		All information contained in this drawing (including digital data) should be checked and verified prior to any fabrication or construction.		MBH Ltd
SITE ADDRESS: BP Pinkham Way, A406, Bounds Green, London,N11 2UU						
 Cadmap Ltd Unit 131 Dunsfold Park Cranleigh Surrey, GU6 8TB T: 01483 429385 E: info@cadmap.co.uk W: www.cadmap.co.uk		   				



Important Information:
All information contained in this drawing (including digital data) should be checked and verified prior to any fabrication or construction.

Survey Legend

- WSL = Window Sill Level
- WHL = Window Head Level
- CL = Ceiling Level
- UB = Under Beam
- FL = Floor Level
- DH = Door Head



Grid: OS GPS
Levelling: OS GPS

Floor Plan

Site Address:
BP Pinkham Way
A406, Bounds Green
London
N11 2UU

Client:
MBH Ltd

Surveyor	JS	Drawn By	WB	Verified By	AF	Date	30.11.22
CM No:	CMU22340/P			Rev:			
Scale:	1:50m @ A1			Date: November 2022			

Cadmap Ltd
Unit 131 Dunsfold Park
Cranleigh
Surrey, GU8 8TB
T: 01483 426385
E: info@cadmap.co.uk
W: www.cadmap.co.uk

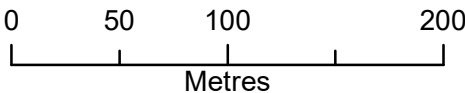
APPENDIX C

Environment Agency Model Outputs

Detailed FRA centred on: site off Pinkham Way, New Southgate,N11 2UU - 15/12/2022 - HNL 291941 AS



Environment Agency
Alchemy,
Bessemer Road,
Welwyn Garden City,
Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location
- 1 in 2 (50%) Defended
- 1 in 5 (20%) Defended
- 1 in 10 (10%) Defended
- 1 in 20 (5%) Defended

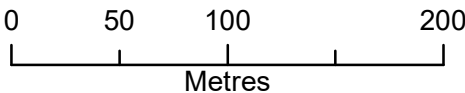
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Legend

- Main Rivers
- Site location

Defended Flood Outlines

- 1 in 50 (2%) Defended
- 1 in 75 (1.33%) Defended
- 1 in 100 (1%) Defended
- 1 in 100+20% (*CC) Defended

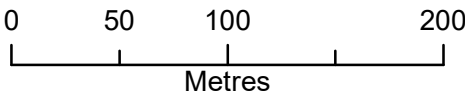
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Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location

Defended Flood Outlines

- 1 in 200 (0.5%) Defended
- 1 in 1000 (0.1%) Defended

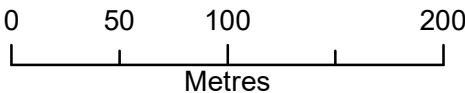
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Legend

- Main Rivers
- Site location
- 1D Node Results**
- Node Results

The data in this map has been extracted from the River Lee 2D Flood Mapping Study (CH2M Hill, 2014). This was a catchment-scale mapping study, so may need local updates for site-specific decisions. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment-wide defences. Updates to model M03 were undertaken by the Lower Hall Suices Operational Scenario Modelling (CH2M Hill, 2014), and updates to model M04 by the Lower Lee Tributaries Economic Appraisal project (CH2M Hill, 2015). Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence. <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

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Environment Agency ref: HNL 291941 AS

The data in this map has been extracted from the River Lee 2D Modelling study (CH2M Hill, 2014).

Flood risk data requests including an allowance for climate change will be based on the 1 in 100 flood plus 20% allowance for climate change, unless otherwise stated. You should refer to 'Flood risk assessments: climate change allowances' to check if this allowance is still appropriate for the type of development you are proposing and its location. You may need to undertake further assessment of future flood risk using different allowances to ensure your assessment of future flood risk is based on best available evidence.

<https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

Caution:

This model has been designed for catchmentwide flood risk mapping. It should be noted that it was not created to produce flood levels for specific development sites within the catchment. Modelled outlines take into account catchment wide defences.

All flood levels are given in metres Above Ordnance Datum (mAOD)

All flows are given in cubic metres per second (cumecs)

MODELLED FLOOD LEVEL

			Return Period									
Node Label	Easting	Northing	2 yr	5 yr	10 yr	20 yr	50 yr	75 yr	100 yr	100 yr + 20%	200 yr	1000 yr
BG.016	529199	191942	31.63	31.74	31.85	31.94	31.97	32.07	32.21	32.41	32.43	33.55
BG.015	529207	191961	31.51	31.62	31.73	31.81	31.83	31.87	31.96	32.09	32.10	32.94
BG.014	529266	192037	31.10	31.21	31.31	31.40	31.41	31.45	31.54	31.68	31.70	32.51
BG.013	529308	192074	30.96	31.08	31.20	31.29	31.31	31.35	31.46	31.61	31.63	32.51
BG.012	529368	192144	30.40	30.51	30.62	30.72	30.73	30.78	30.88	31.06	31.08	32.03

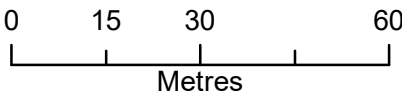
MODELLED FLOWS

			Return Period									
Node Label	Easting	Northing	2 yr	5 yr	10 yr	20 yr	50 yr	75 yr	100 yr	100 yr + 20%	200 yr	1000 yr
BG.016	529199	191942	6.15	7.56	9	10.18	10.15	10.52	11.28	12.5	12.65	14.18
BG.015	529207	191961	6.22	7.66	9.12	10.34	10.53	11.19	12.65	14.89	15.14	29.86
BG.014	529266	192037	6.29	7.76	9.23	10.51	10.71	11.39	12.95	15.36	15.64	33.41
BG.013	529308	192074	6.28	7.76	9.23	10.51	10.71	11.39	12.96	15.36	15.63	33.12
BG.012	529368	192144	6.28	7.76	9.23	10.51	10.71	11.39	12.93	15.36	15.63	33.37

Detailed FRA centred on: site off Pinkham Way, New Southgate,N11 2UU - 15/12/2022 - HNL 291941 AS



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AL7 1HE



Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 20 (5%) Defended M11

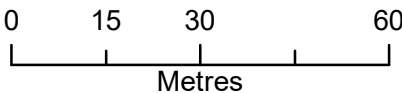
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 50 (2%) Defended M11

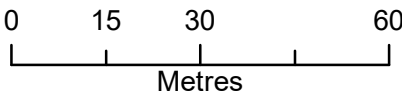
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 75 (1.33%) Defended M11

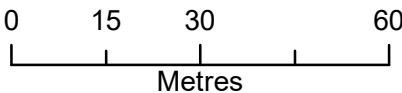
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100 (1%) Defended M11

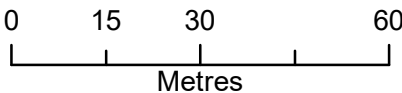
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 100+20% (*CC) Defended M11

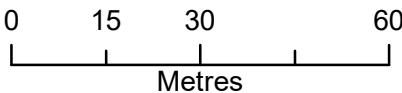
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Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 200 (0.5%) Defended M11

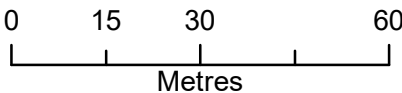
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Welwyn Garden City,
Hertfordshire,
AL7 1HE



Legend

- Main Rivers
- Site location

2D Node Results: Heights

- 1 in 1000 (0.1%) Defended M11

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Flood Risk Assessments
Flood Consequences Assessments
Surface Water Drainage
Foul Water Drainage
Environmental Impact Assessments
River Realignment and Restoration
Water Framework Directive Assessments
Environmental Permit and Land Drainage Applications
Sequential, Justification and Exception Tests
Utility Assessments
Expert Witness and Planning Appeals
Discharge of Planning Conditions

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