

**REMEDiation STRATEGY
FOR
FORMER BATTLE OF BRITAIN
SITE, COLDHARBOUR ROAD,
NORTHFLEET**



REPORT STATUS SHEET

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Report Title:	Remediation Strategy for Former Battle of Britain Site, Coldharbour Road, Northfleet
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		Date	Signed for and on behalf of Applied Geology
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- Exploratory Hole Location Plan, Dwg No AG3571-23-02
- Proposed Care Home Site Plan as Proposed, Dwg No. 2271-00-005 Rev AD by Convery Prenty Shields Architects dated December 2025

APPENDIX B

SOIL IMPORT CRITERIA

1.0 INTRODUCTION

An area of land off Coldharbour Road/New House Lane in Northfleet (the site) is currently being developed as a new residential care home by Simply Develop UK Ltd (the Client). The proposals for the site comprise the construction of a new 3 to 4 storey care home (Class C2) with associated car parking, access road and soft landscaping. A semi-basement/undercroft is located under the north-eastern wing of the care home. The layout of the proposed development is detailed on Dwg No. 2271-00-005 Rev AD by Convery Prenty Shields Architects dated 12th December 2023 and most recently updated on the 2nd December 2025. A copy of this drawing is presented in Appendix A.

Applied Geology has previously undertaken several phases of works on the site. An initial combined Phase I desk study and Phase II ground investigation was undertaken, on behalf of the previous site owner, Frontier Estates Ltd, in August 2021 and reported in October 2021 (ref: AG3309-21-AN17). Applied Geology was subsequently instructed by Frontier Estates Ltd to undertake supplementary soakaway testing in compliance with BRE Digest 365 methodology. The findings of this investigation were reported in October 2022 (ref. AG3309A-22-AP31). In December 2023, Applied Geology was appointed by the Client to undertake a targeted investigation in order to supplement the previous information within the new proposed basement area. The findings of the supplementary works along with the previous investigation were reported in report ref AG3571-23-AR62 dated February 2024.

Conditional Planning Permission for the development was obtained in June 2023 from Gravesham Borough Council ref 20221251 with relevant Conditions. Condition 7 states that *'before any above ground works commence the following components of a scheme to deal with the risks associated with contamination of the site shall be submitted to and approved, in writing, by the Local Planning Authority:*

- a) A desk study detailing the history of the site uses and proposed site investigation strategy.*
- b) Details of Quality Assured Sampling and analysis methodology, with all site investigation including relevant soil, soil gas, surface and groundwater sampling conducted by a suitably qualified and accredited consultant/Contractor.*
- c) A site investigation report detailing all investigative works and sampling on site, together with results of analysis and risk assessment to any receptors.*
- d) A remediation strategy to be carried out in full on site under a quality assurance scheme to demonstrate compliance with the proposed methodology and best practice guidance.*
- e) Prior to occupation, a closure report shall be submitted and approved by the Local Planning Authority, including details of the proposed remediation works and the quality assurance certificates, details of any post remediation sampling and analysis and details of waste materials removed from site.'*

In addition to the above, Condition 23 also required a watching brief to be maintained during construction for any additional contamination and appropriate remediation to be carried out if encountered.

The previous investigation reports for the site have been submitted to discharge 7a), b) and c). This document has been produced to satisfy condition 7d). It will only be

possible to fully satisfy Conditions 7e) and 23 upon completion of the proposed remedial works and submission of the validation report.

The investigations identified the presence of localised elevated concentrations of PAH and TPH within the upper granular Made Ground, beneath surface asphalt along the north-western, northern and north-eastern boundaries of the site. The contamination was considered likely to be due to from spills/leakages as these areas of the site were used as car parking for the former Public House or associated with leaching from the overlying asphalt.

In order to develop the site safely, it has been necessary to incorporate a number of measures to protect the proposed end users. This Remediation Strategy has therefore been prepared to detail the remedial measures proposed and the steps required to demonstrate that they have been appropriately undertaken and to comply with Condition 7d) of the planning application.

It is understood that the groundworks phase of construction has already been completed and a watching brief maintained by the construction team. Buried asbestos sheeting was encountered and removed by a licensed contractor. This will be reported in more details in the validation report.

This report has been prepared in accordance with Environment Agency guidance LCRM - Land Contamination Risk Management published in October 2020.

This document will need to be agreed with the relevant regulatory bodies (Local Authority) prior to implementation.

2.0 BACKGROUND INFORMATION

2.1 Site Description and Setting

The site is located at 8 Coldharbour Road, Gravesend, Kent, approximately 2km southwest of Gravesend town centre. The Ordnance Survey grid reference for the centre of the site is 563662, 172272 as shown on the Site Location Plan in Appendix A.

The site is approximately rectangular in plan shape with dimensions of approximately 70m by 50m (0.35Ha) and is relatively flat topographically at c. 40m to 41m AOD. The site then falls from an elevation of c. 40m to c. 38m AOD in the north of the site, suggesting there has been some cut to accommodate New House Lane to the north.

At the time of the previous investigation in January 2024 the site comprised a disused parcel of land. The northern margin and eastern half of the site was surfaced with asphalt hardstanding whilst overgrown vegetation was present across the remainder of the site. It is understood the site was formerly a public house and car park.

A recent site visit was undertaken on the 28th November 2025 and the new care home, access road and some block paving areas in the north had mostly been built. The care home was being fitted out and retaining wall foundations were being constructed along the south-eastern boundary. The rest of the site remained bare soil and no soft landscaping had been installed. It was evident during the recent site visit and aerial imagery that an area of cut had been undertaken in the northern area of the site during the construction works. This was for a basement/undercroft level to the new care

home located under the main entrance/north-eastern wing. The new site access has also been graded down to the junction with New House Lane.

2.2 Summary of Previous Reports

The findings of the previous reports for the site have been summarised and are presented below, however, reference should be made to the original reports for full details (as referenced in Section 1.0).

2.2.1 Summary of Site History

Historical maps indicate that the site remained undeveloped until c. 1907 when two undefined structures were shown on site. By 1952 these were labelled as the Battle of Britain Public House and Shears Green House. The 1960 map shows the two structures adjoined and just labelled as the public house. With the exception of some extensions to the public house, there were no further significant changes to the site until the public house was demolished around 2021.

2.2.2 Geology and Ground Conditions

The Published BGS Map indicates the site to be underlain by Solid Geology of the Cretaceous Thanet Sand Formation over the Cretaceous Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation, herein referred to as Undifferentiated Chalk. Superficial Deposits are not shown on site, however, Head Deposits and River Terrace Deposits are shown nearby. The investigations have indicated the following geological sequence beneath the site:

- Hardstanding and Made Ground across the site to depths generally between 0.15m and 2.30m below ground level (bgl);
- Strata considered to represent Superficial Head Deposits were encountered in a single exploratory hole (BH1) in the north-western corner of the site directly beneath the Made Ground from 0.50m bgl to 2.00m bgl. The Head Deposits comprised soft becoming firm brown mottled grey sandy clay, with fine to coarse subangular to subrounded quartzite gravel;
- The Thanet Sand Formation was recorded directly beneath the Made Ground and Head Deposits (where encountered) from depths of between 0.15m (TP6) and 2.20m bgl (TT1) and was proven to the full depth of the investigation (12.45m bgl). The stratum generally comprised medium dense becoming dense (light) brown slightly clayey/silty, slightly gravelly fine to medium sand with horizons of sandy gravelly clay/silt.

2.2.3 Hydrology and Hydrogeology

There are no recorded surface water features or licensed surface abstractions within 500m of the site. The Thanet Sand Formation is classified as a Secondary A Aquifer, whilst the underlying Undifferentiated Chalk strata is classified as a Principal Aquifer. The site lies in a Total Catchment Zone 2 Source Protection Zone. The nearest recorded active groundwater abstraction license is located c.742m south-east of the site, held by Mid Kent Golf Club Ltd for spray irrigation purposes. Approximately 10,000m³ of water is abstracted per annum. There are no potable abstraction licences within 1km of the site.

During the previous investigations, groundwater strikes were encountered within the Thanet Sand in 4no. boreholes between 3.80m and 4.30m bgl. During monitoring visits groundwater was generally absent in installations, with the exception of 2024 when water was recorded at the base of 2no. installations at 3.67m and 3.85m bgl.

2.2.4 Summary of Contamination Issues

The ground investigations identified localised exceedances of Aromatic TPH fraction C21-C35 with concentrations of 5,000mg/kg and 3,200mg/kg recorded in two exploratory holes when compared to Residential Without Plant Uptake screening criteria considered suitable for a care home use. The exceedances were recorded in shallow Made Ground soils from TP3 at 0.20m bgl and TP4 at 0.15m bgl. There is no screening criteria for Total TPH but the concentrations in these exploratory holes were recorded at 7,500mg/kg and 6,000mg/kg respectively.

Exceedances of some PAH compounds were also recorded in these two samples as well as another five samples from across the site comprising mainly Made Ground but also shallow natural soils (Total of 7no. samples out of 14no. tested), as follows:

- Benzo(a)anthracene was recorded in 3no. samples between 15mg/kg and 69mg/kg, exceeding the screening value of 14mg/kg (TP3, TP4 and DCS104);
- Chrysene was recorded in 1no. sample at 59mg/kg, exceeding the screening value of 31mg/kg (DCS104);
- Benzo(b)fluoranthene was recorded in 5no. samples between 4.1 mg/kg and 76mg/kg exceeding the screening value of 4mg/kg (BH1, TP2, TP3, TP4 and DCS104);
- Benzo(a)pyrene was recorded in 4no. samples between 14mg/kg and 59mg/kg exceeding the screening value of 3.2mg/kg (TP2, TP3, TP4 and DCS104);
- Dibenzo[a,h]anthracene was recorded in 7no. samples between 0.63mg/kg and 33mg/kg exceeding the screening value of 3.2mg/kg (BH1, TP2 x 2 samples, TP3, TP4, DCS103 and DCS104).

Chromatogram analysis was undertaken on the soil samples from DCS104 (0.20m bgl), TP3 (0.20m bgl) and TP4 (0.15m bgl), which indicated the potential source/origin of the elevated TPH to likely be PAH and/or heavy oil. It is considered plausible that these and the other elevated concentrations of hydrocarbons recorded are potentially from spills/leakages as these areas of the site were used as car parking for the former Public House or associated with leaching from the overlying asphalt.

No other exceedances were detected in any of the samples. No asbestos was recorded in any of the samples.

2.2.5 Ground Gas

The results of the ground gas monitoring undertaken indicated methane concentrations below the limit of detection (<0.1%) together with carbon dioxide concentrations of between 0.2% and 3.1%. Oxygen concentrations were recorded between 16.9% and 21.6% and average flow rates were recorded between <0.1l/hr and 0.3l/hr. All VOC concentrations were noted to be below the limit of detection (<0.1ppm) and therefore are of no significant concern. No gas protection measures are required for the proposed development.

2.2.6 Conceptual Site Model

The following conceptual site model has been updated following the findings of the previous Phase II investigations. Those risks requiring mitigation/remedial measures are also noted in the table below. Risks to neighbours will generally be dealt with via the remedial measures employed to protect end users of the site.

Updated Conceptual Site Model

Source	Pathway	Receptor	Risk*	Mitigation/Remedial Action Required
Potential contamination within Made Ground (on site) associated with former site usage (<i>PAH compounds exceedances recorded in 7 out of 14 samples of shallow soil</i>)	Inhalation, ingestion, dermal contact within areas of soft landscaping	End users	Medium	Yes – Cover layer in soft landscaped areas and Watching Brief
	Vertical and lateral migration and leaching	Secondary A and Principal Aquifers (Controlled Waters)	Low	Deep groundwater and no contamination recorded below 0.3m bgl – No further action required
	Direct contact	Water supply pipes	Medium	Yes - Barrier pipe recommended
Potential contaminants within Made Ground associated with offsite industrial site usage (hydrocarbons and volatile organic compounds)	Vertical and lateral migration and leaching	Secondary A and Principal Aquifers (Controlled Waters)	Low	No contamination from off site identified, no further action required
Hydrocarbon contaminants within soils associated with leaks/spillages (<i>locally elevated TPH recorded in car park area</i>)	Inhalation, ingestion, dermal contact within areas of soft landscaping	End users	Medium	Yes – localised removal or cover layer in soft landscaped areas and Watching Brief
	Vertical and lateral migration and leaching	Secondary A and Principal Aquifers (Controlled Waters)	Low	Deep groundwater and no contamination recorded below 0.3m bgl – No further action required
	Direct contact	Water supply pipes	Medium	Yes - Barrier pipe recommended
Soil gas from onsite Made Ground and offsite industrial usages (methane, carbon dioxide)	Migration into buildings, service ducts, etc (inhalation/explosion)	End users	Low	No elevated ground gas or VOCs detected – No gas protection required
Elevated sulphates in Made Ground/natural soils (on site)	Direct contact	Buried concrete	Low	Made Ground is DS-2 and AC-1s and natural soils DS-1 and AC-1s. Geotechnical risks do not form part of the Remediation Strategy

* Definition of Risk Categories

Negligible - Contaminants that might have unacceptable impact on key receptors, are unlikely to be present, or, no pathway is envisaged.

Low Risk: Contaminants may be present but are unlikely to be at levels to have unacceptable impact on key receptors, or pathways are likely to be minimal.

Medium Risk: Contaminants are probably present and might have an unacceptable impact on key receptors. Pathways may also be present therefore remedial measures may be necessary to reduce the risks.

High Risk – Contaminants probably or certainly present and pathways are probably also present. Therefore, contaminants are likely to have an unacceptable impact on key receptors and remedial measures are likely to be necessary to reduce the risks to acceptable levels.

3.0 SCOPE OF REMEDIATION STRATEGY

3.1 Objectives

The objectives for the remediation strategy for the proposed care home are as follows:

- Fulfil regulatory requirements in order to satisfy Planning Conditions.
- To ensure the site condition is suitable for the proposed future use.
- To manage any remediation works such that operational risks including release of dust, odours and vapours are controlled to protect third parties and the wider environment.
- To ensure that, post-remediation, there are no residual unacceptable risks associated with the site, either to Controlled Waters or human health via future excavation or development works.

3.2 Organisations Involved

Details of organisations involved and their roles are as follows:

Landowner	Simply Develop UK Ltd
Principal Contractor	Simply Develop UK Ltd
Geo-environmental/ Geotechnical Consultant	Applied Geology Ltd
Local Authority	Gravesham Borough Council - Environmental Health team

Validation of relevant aspects of the work will need to be coordinated with relevant contractors at appropriate times as works proceed.

3.3 Discovery and Remedial Strategy Design

The previous investigations to date have identified some exceedances of PAH and TPH mainly in shallow Made Ground soils at the site of the Residential Without Plant Uptake screening criteria.

As with all previously developed sites, there is a potential for currently unidentified hotspots of contamination in areas of reduced coverage/not investigated. Applied Geology was not instructed to provide any geoenvironmental services during the groundworks or until the late stages of construction. However, it is understood that a watching brief was maintained and continues to be maintained during the construction works by the contractors. Remedial works were undertaken by a licensed contractor during the groundworks phase to remove some encountered asbestos sheeting and these works will be reported in the verification report.

Where hardstanding/building cover is proposed, this will break the dermal contact, soil ingestion, dust ingestion/inhalation pathways to end users and will also restrict future infiltration. End users will, however, still need to be protected from exposed soils in any gardens and soft landscaped areas. It is also understood that an area of cut has been undertaken across the northern/northwestern area of the site in order to achieve proposed ground levels for the semi-basement/undercroft and graded access with New House Lane. It is likely that the majority of the hydrocarbon impacted shallow Made Ground soils have been removed as part of this process although no validation works have been carried out that Applied Geology are aware of. Any evidence of contaminated soil removal will be provided in the verification report.

The proposed discovery strategy and remedial actions are discussed further below. These should be submitted to the Local Authority to confirm their agreement (or otherwise) to the proposed measures. Preliminary communication with Gravesham Council Environmental Health Officer has indicated that the proposed remedial measures are acceptable, based on the late stage of the development.

3.4 Proposed Remediation Strategy

Based on the findings of the previous site investigations, the following remedial works and subsequent validation are considered necessary which will be undertaken during the Construction Phase of the development.

In outline, the proposed strategy comprises:

- Installation of a cover layer system comprised of 'clean' imported topsoil (with or without subsoil) in gardens and other soft landscaping areas. Specific requirements of the Landscape Architect may also need to be taken into account;
- Installation of barrier pipe for proposed water supply.

3.4.1 Installation of Cover Layer

An inert cover layer will be required to be imported to site for the communal gardens and any other areas of proposed soft landscaping in order to mitigate the risk to proposed end users. Given the proposed end use, it is envisaged that this would comprise a mixture of subsoil & topsoil to support plant growth. Imported clean soils will act as barrier to break the pathway to proposed end users from identified contamination. Imported soils will need to be tested to ensure they are free from contamination and suitable for use. This may comprise only Topsoil or a mixture of Topsoil and other inert material (subsoil).

A minimum thickness of 300mm of clean Topsoil/Subsoil is recommended in areas of communal soft landscaping. This may need to be increased (added to or with some subsoil included below) in areas of shrub and tree planting, in accordance with the landscape architect/Client requirements or alternative requirements of the Local Authority.

Any imported cover layer material or Topsoil imported for general growing purposes used in the landscaped areas will need to be tested for an appropriate suite of contaminants depending on the nature of the donor site, to determine its suitability for use (testing requirements are set out in Section 4.1 below).

3.4.2 Installation of Barrier Pipe for Water Supply

Due to elevated hydrocarbon compounds in soils which exceed the threshold for Polyurethane pipes, the previous ground investigation report recommended that barrier pipes are installed to protect the new water supply as usually required by the Local Authority. It is understood that this has already been carried out by the Contractor and details will be provided in the Verification Report.

4.0 VERIFICATION

4.1 Testing of Imported Topsoil

All imported topsoil and subsoil, if required, should meet the requirements of BS3882:2016 and BS8601:2013 with regard to nutrient content and phytotoxic contamination or criteria specifically set out by the Landscape architect. In addition, it should also be tested for contaminants that are considered to pose a risk to human health to ensure they are suitable for their intended use. A range of Subsoil/Topsoil types may be suitable, including those from greenfield sources, manufactured, brownfield, recycled or screened, though extreme caution should be given to importing material from brownfield, screened or recycled sources as there is a higher risk of unsuitable materials or elevated concentrations of contaminants being present in such soils. The topsoil should be visually inspected to confirm it is free from

- Any obvious visual and olfactory contamination;
- Unsuitable material e.g. brick, glass (ie sharps), timber etc;
- It is visibly free from asbestos containing materials.

The topsoil/subsoil used to fill the landscaped areas will be tested for an appropriate suite of contaminants depending on the nature of the donor site. As a minimum, the topsoil/subsoil will be tested for the following contaminants: arsenic, cadmium, chromium (trivalent and hexavalent), copper, lead, mercury, nickel, selenium, zinc, phenols (total), pH, speciated Polyaromatic Hydrocarbons (PAH), TPH (CWG ali/aro split), asbestos screen and organic matter.

The results from the topsoil/subsoil testing will be compared to the topsoil import criteria presented in Appendix B, based on generic screening criteria for a residential with plant uptake end use and BS3882. The screening values are based on 6% Soil Organic Matter (SOM). Should the SOM of the topsoil imported be below 6%, the screening values may need to be altered.

The topsoil/subsoil should be tested at a frequency of 1 sample per 50m³ assuming a greenfield source and that the source of the topsoil is well documented. A greater frequency of testing may be required for other sources, dependent on source specific information. Testing regimes should be agreed with the Consultant where non-greenfield sources are proposed. To minimise the contractor risk of imported topsoils/subsoils failing import criteria following placement, it is recommended that testing is undertaken prior to import and placement, though ultimately testing in the placed condition will be required.

If all concentrations are less than the criteria, the topsoil/subsoil will 'pass'. If any of the concentrations are above the criteria, the soil will be rejected or, if marginal, the results will be discussed with the Local Authority to agree the required action.

The thickness of clean topsoil actually placed will need verifying. This potentially could be achieved by undertaking detailed before and after topographic surveys supported by photographs. Alternatively, hand dug pits could be undertaken in the areas of soft landscaping after the topsoil has been placed. Such pits would need to be measured and photographed and a minimum of 10 pits are recommended based on the extent of the communal gardens/soft landscaping currently proposed. This may need to be undertaken in Phases as development proceeds and plots are released for occupation to achieve partial discharge of Planning Conditions.

4.2 Verification of Barrier Pipe Installation

Evidence of the installation of barrier pipe should be provided by the Contractor to confirm use and should be presented in the verification report. Evidence may include as-built drawings, photographs of installation works, inspection by a Geo-environmental Engineer and/or supply invoice/delivery tickets of barrier pipe to the site.

4.3 Soil Reuse and Waste Soil Disposal

Any re-use of soils should be undertaken by the earthworks contractor in accordance with the CL:AIRE Definition of Waste Code of Practice.

Any excavated soil material and excess spoil disposed of off-site should be treated as Waste and classified as Inert, Non-hazardous or Hazardous for off-site disposal prior to removal from site as required by the "Duty of Care" (Environmental Protection Act, 1990) legislation together with Annex II of Directive 1999/31/EC ("Landfill Directive").

All waste soils should be sorted to prevent mixtures of waste types. Where possible, any waste soil should be recycled and the volume of soil to be disposed of should be minimised. Initially, Basic Characterisation of the waste is required whereby the material should be described and its source of origin recorded (the site plan, exploratory hole records and the certificates of chemical analysis in the Ground Investigation Report should be included). This should also include data on its composition and leaching behaviour, its European Waste Catalogue (EWC) code, and where relevant any hazardous properties according to Annex III of Directive 91/689/EEC. This information should be provided to the licensed waste contractor.

Soils excavated are anticipated to fall under the EWC description "Soil and Stones", with EWC codes 17 05 03 (hazardous) and 17 05 04 (not hazardous). Waste Acceptance Criteria (WAC) testing is required for all Inert wastes and Hazardous Waste but not for non-hazardous waste. Limited WAC testing was undertaken as part of the ground investigation on the natural soils and the results showed compliance with the inert limits, however, it is envisaged that landfill operators will require further testing on the actual waste stream.

Some pre-treatment of the waste soils arisings will be required prior to disposal. This could range from simple sorting on site to off-site stabilisation prior to disposal.

Any asbestos must be disposed of by suitably licensed contractors to a suitably licensed facility.

Details of the waste haulier(s), copies of all consignment notes etc will be included in the Verification report and need to be maintained by the producer in accordance with current legislation.

5.0 REPORTING

A Verification Report(s) will be produced following completion of the above-described works.

Laboratory results for imported soils will be assessed as part of the verification and included in the Verification Report, along with site diaries (or before and after surveys) and relevant photographs demonstrating sufficient thickness of topsoil has been placed. Consignment and waste carrier notes etc will be included in the Verification Report.

Evidence of any contamination removal such as waste tickets will be provided and reported in the verification report.

Evidence of the installation of barrier pipe for water supply will be included in the verification report.

The Verification Report will need to be supplied to the Local Authority for approval to discharge Conditions 7e and 23 of the Planning Permission. Verification of the various elements of remedial works will be undertaken by different professionals and at different times during the construction of the development. Therefore, verification information could be submitted in batches or a combined Verification Report be produced at the end of the final activity (likely to be placement of clean topsoil towards the end of construction).

6.0 THIRD PARTY CONTACTS

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Tel: 02476 511822

GENERAL NOTES

- A) The assessment made in this report is based on the site terrain and ground conditions revealed by the various field investigations undertaken and also any other relevant data for the site including previous site investigation reports (if available) and desk study data. There may be special conditions appertaining to the site, however, which have not been revealed by the investigation and which have not, therefore, been taken into account in the report. The assessment may be subject to amendment in the light of additional information becoming available. It must be recognised that many of the Environmental Searches obtained during the course of the desk study are often lengthy. Applied Geology have, where appropriate and in the interests of simplicity, only reproduced the summary of the searches within the report. A full copy of all the search data is held at the Applied Geology office and is available for inspection if required.
- B) Where any data supplied by the Client or other external source, including that from previous site investigations, has been used it has been assumed that the information is correct. No responsibility can be accepted by Applied Geology for inaccuracies within this data.
- C) Whilst the report may express an opinion on possible configurations of strata between or beyond the exploratory locations, or on the possible presence of features based on either visual, verbal or published evidence this is for guidance only and no liability can be accepted for the accuracy.
- D) Comments on groundwater (and landfill gas) conditions are based on observations made during the course of the present and past investigations or with reference to published data unless otherwise stated. It should be noted, however, that groundwater (and landfill gas) levels vary due to seasonal (or atmospheric conditions) or other effects.
- E) The copyright of this report and other plans and documents prepared by Applied Geology is owned by Applied Geology and no such report, plan or document may be reproduced, published or adapted without the written consent of Applied Geology. Complete copies of the report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its submission.
- F) This report is prepared and written in the context of the proposals stated in the introduction to the report and should not be used in a differing context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore with any change in circumstances or after the expiry of one year from the date of the report, the report should be referred to Applied Geology for re-assessment and if necessary, re-appraisal.
- G) The survey was conducted and this report was prepared for the sole internal use and reliance of the Client. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Applied Geology. If an unauthorised third party comes into possession of this report they rely on it at their peril and Applied Geology owes them no duty of care and skill.
- H) Ground conditions should be monitored during the construction of the works and the recommendations of the report re-evaluated in the light of this data by the supervising geotechnical or geo-environmental engineers.
- I) Unless specifically stated, the investigation has not taken into account the possible effects of mineral extraction.
- J) The economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, depends on very many factors in addition to geotechnical considerations and hence its evaluation is outside the scope of this report.
- K) Applied Geology operates as a Consultancy and does not operate its own laboratory for soil testing, this work being sub contracted to known and respected, generally UKAS accredited, laboratories. Applied Geology can therefore not be held responsible for the testing carried out.

APPENDIX A



Reproduced from the Ordnance Survey Map with permission of the Controller of His Majesty's Stationery Office, Crown Copyright* LICENCE No: AC0000850102

APPLIED GEOLOGY

The Old Barn, Church Farm
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CV35 8AR
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Client:

SIMPLY DEVELOP (UK) LTD

Project:

COLDHARBOUR ROAD, NORTHFLEET,
GRAVESEND

Drawn By:

KM

Checked By:

TL

Paper Size:

A4

Scale:

NTS

Date:

18.01.2024

NGR:

563646 172297

Title:

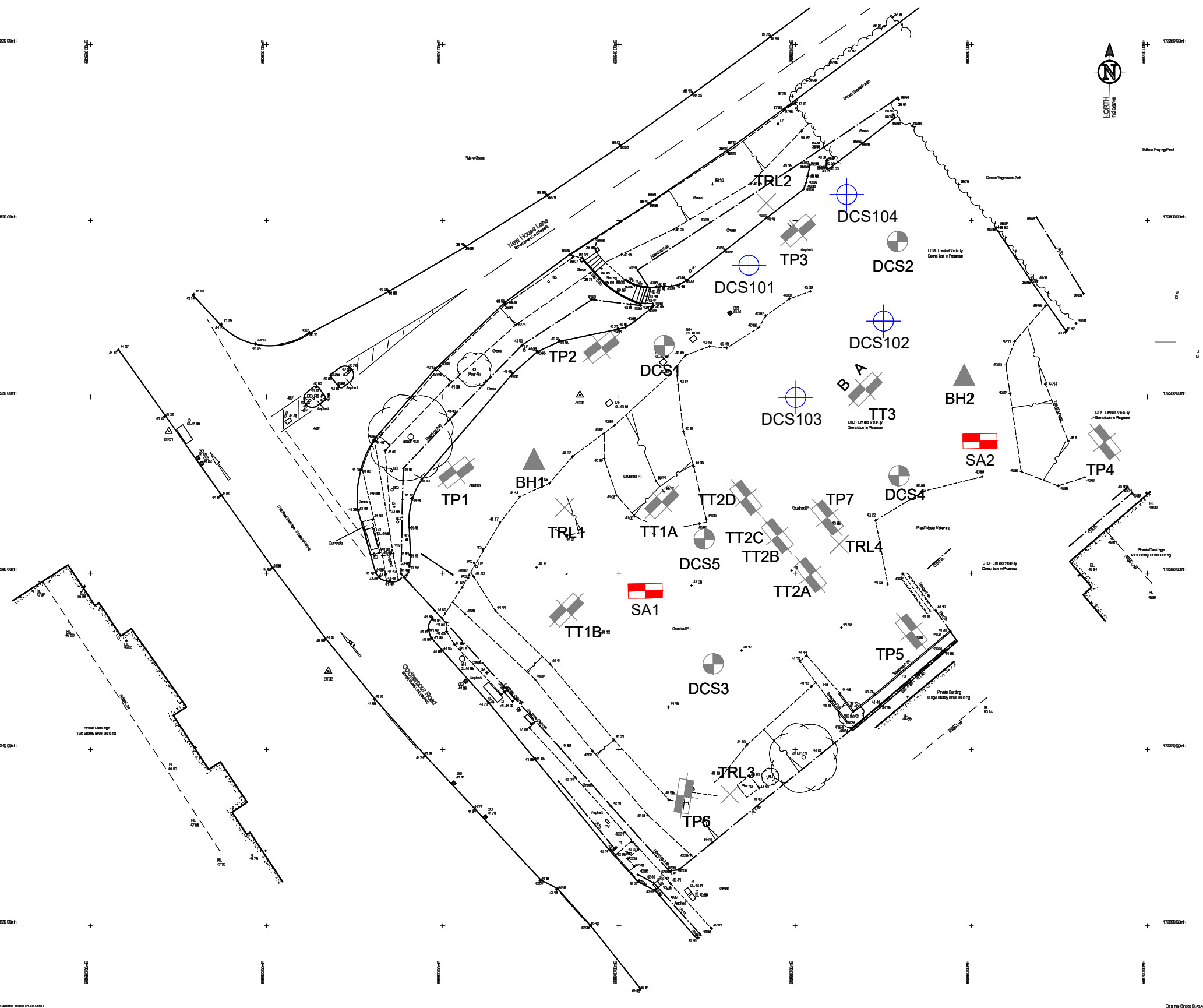
SITE LOCATION PLAN

Drawing No:

AG3571-23-01

Revision:

0



Key:

Investigation by Applied Geology 2024:

Driven Continuous Sampling Borehole

DCS101

Historical Investigation by Applied Geology 2022:

Trial Pit Soakaway

SA1

Historical Investigation by Applied Geology 2021:

Trial Pit

TP1

Driven Continuous Sampling Borehole

DCS1

Cone Penetration Test

BH1

Transport Research Laboratory
Dynamic Cone Penetrometer

TRL1

Trial Trenches

A, B
TT1

Drawing based on Survey Solutions drawing No: 18496se01 dated 26/10/2016.

APPLIED GEOLOGY

The Old Barn
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Fulbrook Lane
Sherbourne
Warwick
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Tel: 02476 511822
email: admin@appliedgeology.co.uk

Client:

SIMPLY DEVELOP (UK) LTD

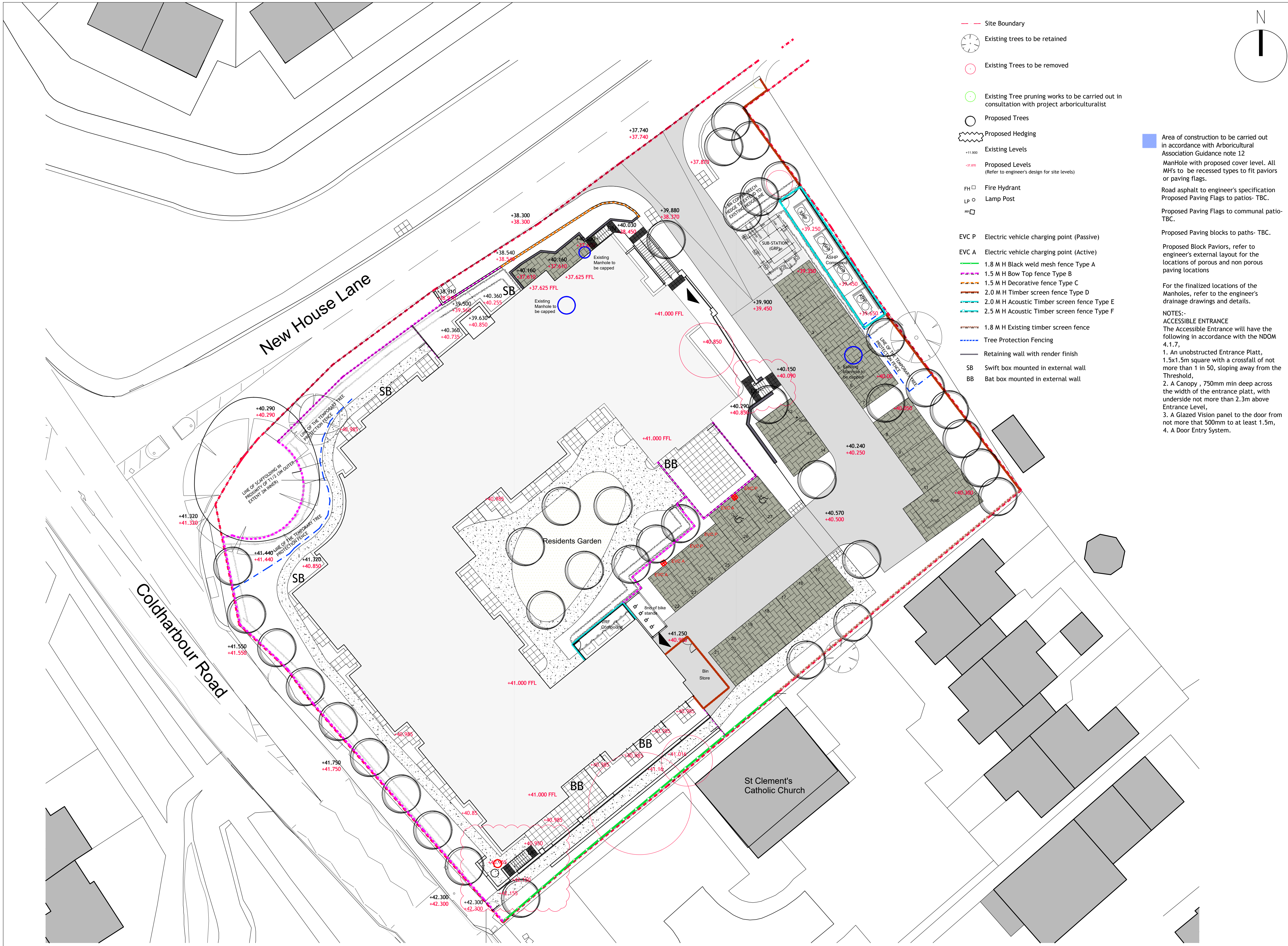
Project:

COLDHARBOUR ROAD, NORTHFLEET,
GRAVESEND

Title:

EXPLORATORY HOLE LOCATION PLAN

Drawn by:	Checked by:	Paper Size:
KM	TL	A3
Scale:	Date:	
1:500	18/01/2024	
Drawing No:		Revision:
AG3571-23-02		0



- Site Boundary
- Existing trees to be retained
- Existing Trees to be removed
- Existing Tree pruning works to be carried out in consultation with project arboriculturalist
- Proposed Trees
- Proposed Hedging
- Existing Levels
- Proposed Levels (Refer to engineer's design for site levels)
- Fire Hydrant
- Lamp Post
- EVC P Electric vehicle charging point (Passive)
- EVC A Electric vehicle charging point (Active)
 - 1.8 M H Black weld mesh fence Type A
 - 1.5 M H Bow Top fence Type B
 - 1.5 M H Decorative fence Type C
 - 2.0 M H Timber screen fence Type D
 - 2.0 M H Acoustic Timber screen fence Type E
 - 2.5 M H Acoustic Timber screen fence Type F
- 1.8 M H Existing timber screen fence
- Tree Protection Fencing
- Retaining wall with render finish
- SB Swift box mounted in external wall
- BB Bat box mounted in external wall

Area of construction to be carried out in accordance with Arboricultural Association Guidance note 12

ManHole with proposed cover level. All MH's to be recessed types to fit paviors or paving flags.

Road asphalt to engineer's specification

Proposed Paving Flags to communal patio- TBC.

Proposed Paving blocks to paths- TBC.

Proposed Block Paviors, refer to engineer's external layout for the locations of porous and non porous paving locations

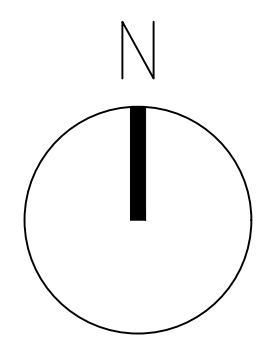
For the finalized locations of the Manholes, refer to the engineer's drainage drawings and details.

NOTES:-

ACCESSIBLE ENTRANCE

The Accessible Entrance will have the following in accordance with the NDM 4.1.7,

1. An unobstructed Entrance Platt, 1.5x1.5m square with a crossfall of not more than 1 in 50, sloping away from the Threshold,
2. A Canopy , 750mm min deep across the width of the entrance platt, with underside not more than 2.3m above Entrance Level,
3. A Glazed Vision panel to the door from not more that 500mm to at least 1.5m,
4. A Door Entry System.



General Notes:		
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Revision	Initials	Date
F	BL	19.06.24
1. Substation and kiosk updated following discussions with UKP		
2. Stairs at car park amended to reflect proposed levels		
3. Tree protection area of construction hatch added		
G	BL	01.07.24
1. Stairs adjusted for 150mm risers		
2. VRF relocated to paved area adjacent to Stair 4		
H	BL	02.08.24
1. VRF fencing extended between bike store		
2. Masonry Kiosk removed		
3. Beech hedge added to other side of substation		
4. Noise assessment note added to substation		
I	BL	06.08.24
1. Retaining walls adjusted to engineer's extent and curves		
J	BL	19.08.24
1. Fire hydrants location and distance notes added		
K	BL	28.08.24
1. Min 2050 clearance to substation added		
2. EV provision updated to HE design		
3. Fence type A and C amended colours		
L	BL	01.10.24
1. Retaining walls updated to match engineers layout		
2. Levels adjusted at SW of site to engineers sketch		
M	BL	28.10.24
1. Revised path and retaining walls at SW corner including removal of TW10		
2. Tree protection at NE boundary amended for removal of vegetation		
3. Trees added to resident's garden and NE boundary for loss of TW10		
N	BL	11.12.24
1. Revised path and retaining walls at SW corner with moving of steps		
P	WG	19.12.24
1. Sub station updated to show doors facing west.		
2. VRF compound increased in size to accommodate 2 No. additional units.		
3. ASHP compound relocated to the corner of the resident's garden further to the response from the Planning Authority.		
R	WG	13.01.25
1. ASHP compound relocated to the northern boundary adjacent to the sub station.		
2. Existing timber screen fence shown retained to 1-2 St Clements Close		
S	WG	23.01.25
1. Substation shown as per original orientation.		
2. ASHP compound updated.		
T	WG	04.02.25
1. Timber fence shown to entire north boundary to incorporate ASHP compound.		
U	WG	25.02.25
1. Construction Issue		
V	WG	06.03.25
1. Acoustic Fencing shown to ASHP & VRF Compounds.		
2. Fencing details updated.		
W	WG	29.04.25
1. Fence type A colour changed to black.		
2. Proposed tree locations updated as per landscaping proposals.		
X	WG	02.05.25
1. Retaining wall at playroom added.		
Y	WG	19.05.25
1. Locations for wall mounted bat & swift boxes added.		
Z	WG	23.05.25
1. Locations for wall mounted bat & swift boxes updated.		
AA	WG	20.06.25
1. Path alignment along Coldharbour Road elevation updated to suit proposed levels.		
AB	WG	25.09.25
1. Patios to rooms G-10- G-13 updated to make them self contained to coordinate with the latest retaining wall design.		
AC	WG	15.10.25
1. External stair details added.		
2. Retaining wall at NW elevation added.		
AD	WG	02.12.25
1. External stair at grid 79 redesigned to avoid clash with manholes.		

0m4m8m12m16m20m

SCALE 1:200 @ A1

F02

C.L. 40.85m

I.L. 39.50m

SW05

CL: 41.25m

IL: 39.00m

CONSTRUCTION

ConveryPrentyShields

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CLIENT

Simply Construct Ltd

PROJECT

Proposed Care Home
Former Battle of Britain Site,
Coldharbour Road,
Northfleet, Gravesend,
DA11 8NT

DRAWING

Site Plan as proposed

PAPER SIZE

A1

SCALE

1:200

DATE

20.12.23

DRAWING NUMBER

2271_00_005

REVISION

AD

APPENDIX B

Imported Topsoil/Subsoil Acceptance Criteria

Site: Former Battle of Britain Site, Coldharbour Road, Northfleet
Job No: AG3571A-25
Land Use: Residential without plant uptake

Exploratory Hole Reference Depth (m) Strata		Soil Screening Value (6% SOM)	Source/Justification
	Units		
Arsenic	mg/kg	40	LQM/CIEH S4UL (2015)
Boron	mg/kg	11000	LQM/CIEH S4UL (2015)
Cadmium	mg/kg	85	LQM/CIEH S4UL (2015)
Chromium	mg/kg	910	LQM/CIEH S4UL (2015)
Chromium (Hexavalent)	mg/kg	6	LQM/CIEH S4UL (2015)
Copper	mg/kg	200	LQM/CIEH S4UL (2015) + BS3882: 2015
Lead	mg/kg	200	C4SL (2014)
Mercury	mg/kg	1	LQM/CIEH S4UL (2015)
Nickel	mg/kg	110	LQM/CIEH S4UL (2015) + BS3882: 2015
Selenium	mg/kg	430	LQM/CIEH S4UL (2015)
Vanadium	mg/kg	1200	LQM/CIEH S4UL (2015)
Zinc	mg/kg	300	LQM/CIEH S4UL (2015) + BS3882: 2015
Naphthalene	mg/kg	13	LQM/CIEH S4UL (2015)
Acenaphthylene	mg/kg	*	LQM/CIEH S4UL (2015)
Acenaphthene	mg/kg	*	LQM/CIEH S4UL (2015)
Fluorene	mg/kg	*	LQM/CIEH S4UL (2015)
Phenanthrene	mg/kg	*	LQM/CIEH S4UL (2015)
Anthracene	mg/kg	*	-
Fluoranthene	mg/kg	*	LQM/CIEH S4UL (2015)
Pyrene	mg/kg	*	LQM/CIEH S4UL (2015)
Benzo[a]anthracene	mg/kg	15	LQM/CIEH S4UL (2015)
Chrysene	mg/kg	32	LQM/CIEH S4UL (2015)
Benzo[b]fluoranthene	mg/kg	4.0	LQM/CIEH S4UL (2015)
Benzo[k]fluoranthene	mg/kg	110	LQM/CIEH S4UL (2015)
Benzo[a]pyrene	mg/kg	3	LQM/CIEH S4UL (2015)
Dibenzo[a,h]anthracene	mg/kg	0.32	LQM/CIEH S4UL (2015)
Indeno[1,2,3-cd]pyrene	mg/kg	46	LQM/CIEH S4UL (2015)
Benzo[g,h,i]perylene	mg/kg	360	LQM/CIEH S4UL (2015)
Total PAH	mg/kg	1000	-
Phenols	mg/kg	1200	LQM/CIEH S4UL (2015)
Benzene	mg/kg	1.40	LQM/CIEH S4UL (2015)
Toluene	mg/kg	*	LQM/CIEH S4UL (2015)
Ethylbenzene	mg/kg	440	LQM/CIEH S4UL (2015)
m&p Xylene	mg/kg	430	LQM/CIEH S4UL (2015)
o-Xylene	mg/kg	480	LQM/CIEH S4UL (2015)
Aliphatic TPH >C5-C6	mg/kg	160	LQM/CIEH S4UL (2015)
Aliphatic TPH >C6-C8	mg/kg	530	LQM/CIEH S4UL (2015)
Aliphatic TPH >C8-C10	mg/kg	150	LQM/CIEH S4UL (2015)
Aliphatic TPH >C10-C12	mg/kg	770	LQM/CIEH S4UL (2015)
Aliphatic TPH >C12-C16	mg/kg	*	-
Aliphatic TPH >C16-C21	mg/kg	*	-
Aliphatic TPH >C21-C35	mg/kg	*	-
Aliphatic TPH >C35-C44	mg/kg	*	-
Aromatic TPH >C5-C7	mg/kg	*	LQM/CIEH S4UL (2015)
Aromatic TPH >C7-C8	mg/kg	*	LQM/CIEH S4UL (2015)
Aromatic TPH >C8-C10	mg/kg	270	LQM/CIEH S4UL (2015)
Aromatic TPH >C10-C12	mg/kg	*	LQM/CIEH S4UL (2015)
Aromatic TPH >C12-C16	mg/kg	*	LQM/CIEH S4UL (2015)
Aromatic TPH >C16-C21	mg/kg	*	LQM/CIEH S4UL (2015)
Aromatic TPH >C21-C35	mg/kg	*	-
Aromatic TPH >C35-C44	mg/kg	*	-
Total Petroleum Hydrocarbons	mg/kg	1000	-
Asbestos		None present/identified	-
VOCs (other than BTEX)	µg/kg		Any values above detection to be assessed in more detail to determine suitability for end use. Ideally VOCs to be below detection.

Testing should be based on the donor site and its historical use.

* Individual PAH compounds and TPH fractions have S4UL's in excess of 1000mg/kg, therefore no specific limits are proposed as overall limits of 1000mg/kg TPH and 1000mg/kg PAH are to be adhered to.

LQM/CIEH S4UL Reference No. S4UL3159 (2015)