

**Greenwood Place and Highgate Road
Site: Community Resource Centre,
Centre for Independent Living and
Residential Units**

Basement Impact Assessment

For



Project Number:




11167

March 2015

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Contents

Executive Summary	1
1.0 Introduction	2
2.0 Site Description.....	4
3.0 Environmental Setting	7
4.0 Screening	13
5.0 Scoping	17
6.0 Conclusions and Recommendations	22
Technical References	24
Limitations	25

Appendices

- Appendix A: Figures and Drawings
- Appendix B: Selected Desk Study Data
- Appendix C: Ground Investigation Data

Tables

Table 1-1: Existing Site Specific Information	3
Table 2-1: Summary of Surrounding Land Uses.....	5
Table 3-1: Anticipated Soil Profile in Area of Proposed Basement.....	7
Table 3-2: Generalised Soil Descriptions	7
Table 3-3: Summary of Identified Ground Hazards	9
Table 3-4: Site History	11
Table 3-5: Surrounding Land History (<100m)	11
Table 4-1: Subterranean (Groundwater) Flow)	13
Table 4-2: Slope Stability	14
Table 4-3: Surface Flow and Flooding	16
Table 5-1: Significance Matrix used within the Assessment.....	17
Table 5-2: Subterranean (Groundwater) Flow Potential Impacts	18
Table 5-3: Slope Stability: Potential Impacts	19
Table 6-1: Summary Auditable Matters.....	22

EXECUTIVE SUMMARY

Author Credentials	This report has been prepared by: Alex Dent: BSc, MSc, EurGeol, C.Geol, FGS Simon Boots: C. Eng, MICE
Data consulted	Site reconnaissance, desk study and ground investigation data has been obtained and reviewed based on the requirements of Section 7.2.1 of the Guidance for Subterranean Development (GSD) produced by the London Borough of Camden.
Development Proposal	As part of the redevelopment of the site, a part basement is to be constructed beneath the proposed Greenwood Centre. A basement finished floor slab level of 31.87m OD is proposed. Piled foundations and sheet pile basement walls are anticipated, although a limited area of reinforced concrete retaining wall is also proposed.. Plans illustrating the proposed development are given in Appendix A.
Ground Model	Available preliminary investigation data indicate, in the vicinity of the proposed basement, a ground model comprising Made Ground to 34.50m OD, over Alluvial Soils to 32.85m OD over London Clay. The upper 450mm of London Clay has been geologically reworked. The possibility of an increased thickness of Made Ground cannot be ruled out at this stage. Available data indicates an equilibrium groundwater level of around 33.85m OD or shallower in the vicinity of the proposed basement.
Screening	Screening concerning land stability, hydrogeology and hydrology was undertaken based on the flowcharts contained in 6.2.2 of the GSD. This identified potential impacts regarding the groundwater table, worked ground, the presence of London Clay, the presence of adjacent highways & associated services and neighbouring foundations.
Scoping	Scoping was undertaken in relation to the above matters. All these were considered to be of neutral or minor significance, assuming suitable engineering design.
Investigations and Assessment Methodology	Data was reviewed as outlined above, including a ground investigation report. A number of recommendations are made in Section 6 of this report, including the need to consult the owners of potentially affected assets and the excavation of foundation inspection pits. Modelling and calculations will be required as the design of the basement is developed.
Mitigation measures	A number of options for mitigation measures are given in relation to temporary works, which should be considered as the design is developed. These include, though the calculations indicated above, the possible need for temporary support and/or monitoring.
Monitoring	The need and extent of any monitoring should be considered as the design is developed.
Residual impacts	Based on the additional investigations and the design measures discussed herein it is anticipated that the matters identified in the screening exercise will be of residual neutral or minor significance .
Other	A further phase of ground investigation is required for detailed design. The basement excavations will result in a significant volume of waste soil arising, which will need disposal in accordance with current legislation.

1.0 INTRODUCTION

- 1.1. This report has been produced by Campbell Reith Hill LLP (CampbellReith) on behalf of the London Borough of Camden, ('the client'). It provides a Basement Impact Assessment (BIA) for a site known as the 'Greenwood Place and Highgate Road Site: Community Resource Centre, Centre for Independent Living and Residential Units' (referred to here after as 'the site') , where it is intended to bring forward a planning application which includes a new basement. Plans indicating the location of the site and its boundaries are given in appendix A. The references and limitations associated with this report follow the main text.
- 1.2. The report has been produced in general accordance with the policies and technical procedures for Basement Impact Assessments for the London Borough of Camden comprising:
 - Guidance for Subterranean Development (GSD). Issue 01. November 2010. Ove Arup & Partners
 - Camden Planning Guidance (CPG) 4: Basements and Lightwells
 - Camden Development Policy (DP) 27: Basements and Lightwells
- 1.3. A BIA is required with all planning applications for basements in Camden in accord with DP 27 to demonstrate that schemes:
 - a) maintain the structural stability of the building and neighbouring properties;
 - b) avoid adversely affecting drainage and run off or causing other damage to the water environment; and,
 - c) avoid cumulative impacts upon structural stability or the water environment in the local area.
- 1.4. The purpose of this report is to evaluate the impacts of the proposed basement considering the issues of hydrology, hydrogeology and land stability via the process described by the GSD and to make recommendations for the detailed design. This presents a staged methodology and tool kit which is illustrated by flow charts and checklists. This report has been structured to follow the guidance through the incremental stages of:
 - a) Screening (Section 4.0)
 - b) Scoping (Section 5.0)
 - c) Site Investigation and Study (Section 2.0/3.0)
 - d) Impact Assessment (Section 5.0/6.0)
 - e) Review and Decision Making (Section 6.0)
- 1.5. The report considers the full screening and scoping stages and available ground investigation and desk study information, sufficient to appraise the potential impacts of the proposed basements and principle mitigation measures. This is intended to support the key deliberations during the agreement of planning permission.
- 1.6. This report considers information contained within a preliminary land quality and flooding data contained within the reports produced by CampbellReith as listed in Table 1.1. Reports produced by others which are also relevant to this BIA are also listed in Table 1.1

Table 1-1: Existing Site Specific Information

Report Title	Date	Author	Type	Reference
Preliminary Land Quality Statement	July 2013	Campbell Reith	Report	1
Flood Risk Assessment	March 2015	Campbell Reith	Report	2
Tree Survey Schedule	March 2013	Simon Jones Associates	Data	3
Historic Environment Assessment	June 2010	MOLA	Report	4

- 1.7. Reference has also been made to ground investigation and desk study data contained within the CampbellReith Geographical Information System (GIS) database, publicly available information and information contained in the GSD. [Ref 1] contained a Groundsure report, which is reproduced in Appendix B for convenience, along with other desk study data relevant to this BIA. [Ref 1] also contained a site specific preliminary ground investigation report, produced by Ground Engineering Ltd, which is reproduced in Appendix C for convenience.
- 1.8. This assessment has been carried out by persons with relevant qualifications listed under the guidance comprising:

Alex Dent: BSc, MSc, EurGeol, C.Geol, FGS

Simon Boots: C. Eng, MICE

2.0 SITE DESCRIPTION

Site Location

- 2.1. The site location and boundaries are given on Figures 1 and 2 contained in Appendix A. The site is located at Greenwood Place, London, NW5, in the London Borough of Camden (NGR 528840E, 185400N), approximately 200m northwest of Kentish Town Station.
- 2.2. The site is bound to the northwest by Greenwood Place and Deane House, to the north east by Highgate Road, to the south east by Kentish Town Christ Church Apostolic Church, and to the south east and south west by Murphy's Yard. Greenwood Place and A&A Self Storage bisect the site in a north west to south east direction.

Site Layout

- 2.3. A site reconnaissance was undertaken by a representative of CampbellReith on 14th November 2012 as part of the work undertaken with respect to the preliminary Land Quality Statement. Full details of the site walkover are given in that document. An annotated site layout plan is presented in Figure 2. Given below is a synopsis of reconnaissance information relevant to this BIA, which is focused on the area of proposed basement.
- 2.4. The site, as a whole, is broadly rectangular in plan, measuring approximately 80m by 75m and comprises an area of 0.57 Ha. The site comprises two buildings, the Highgate Day Centre on the north eastern half and the Greenwood Day Centre on the south western half. The site is bisected by Greenwood Place and Lensham House, which is currently in use as A&A Self Storage. The majority of the site is currently in active use, however, the southern half of the Greenwood Day Centre is disused.
- 2.5. As illustrated on CR Drawing 11167 G100, the area of the proposed basement is located within the footprint of the existing Greenwood Day Centre. Deane House is located approximately 2.25m to the northwest of the proposed basement. The pedestrian pavement to Greenwood Place is located adjacent to the south eastern corner of the proposed basement. At its closest point Lensham House is located around 14m from the proposed basement.
- 2.6. The Greenwood Day Centre is composed of several connected structures forming a single one-storey, flat-roofed complex. The following features were identified within the building:
 - COSHH (Control of Substances Hazardous to Health) store building;
 - A below ground store, approximately 4x4m in plan and 1.00 to 1.50 m bgl;
 - Boiler Room located towards the bottom of the 'Mail Out' community space which covers part of the ground floor footprint of Deane House;
 - The building additionally contained kitchens, toilets, storage rooms and office space; and,
 - Council waste bins and wooden pallets were noted by the delivery entrance/exit of 'Mail Out'.
- 2.7. The nearest trees are located around 39m to the southeast of the proposed basement.

Topography

- 2.8. The site, as whole, has a gentle gradient up from approximately 36m above Ordnance Datum (OD) in the southwest to 39m OD in the northeast. In the southwestern corner of Deane House forms part of the site. This part of Deane House has a limited half height basement (floor level at 35.88m OD) The topography in the area of the proposed basement is essentially flat and at around 37.05 to 37.20m OD. Adjacent to the southwest of the proposed basement is a pathway between the Greenwood Centre and the (off-site) Murphy's Yard. The pathway is at around 34.00m OD and Murphy's Yard is at 33.70m. The buildings on Murphy's Yard are located approximately 2.00m from the proposed basement.

Surrounding Land-Use

- 2.9. The site is set in an area of mixed use and a description of the main surrounding land uses is summarised in Table 2.1.

Table 2-1: Summary of Surrounding Land Uses

Type	Description
In between Highgate and Greenwood Centres	A&A Self Storage, Lensham House, 19 Greenwood Place. A one to three storey brick building used as a self-storage facility.
Northwest	Converted warehouses and offices.
Northeast	Highgate Road, which is largely residential.
Southeast	Kentish Town Christ Apostolic Church and its boundary wall which are listed. Beyond this is the HMV Forum, which is also listed.
Southwest	'Murphy's Yard' is present to the south west of the site. Approximately 75m south west is a railway line.

Site After-Use Proposal

- 2.10. The proposed site redevelopment is shown on Figures 3a and 3b. It is proposed to demolish the existing Greenwood Day Centre and construct a new one to three storey community centre with a single storey basement beneath the north west part of the building. Available plans indicate the finish finished floor level for most of the basement to be around 32.70m OD. Locally a pool and associated balance tank are to be constructed in the basement and these features are indicated to have finished floor level the region of 31.43m OD. The location of these features is illustrated on Drawing 11167/G100, which is presented in Appendix A..
- 2.11. A piled foundation solution is currently proposed for the basement. Allowing for 100mm for the finishes and assuming a slab thickness of around 600mm, the underside of the slab to the pool and balance tank will be at around 30.73m OD. This is also the assumed maximum depth of planned excavation. For the rest of the basement planned excavation of around 32m OD is proposed, which is around 1.90m below the level of the foot path adjacent to the south western site boundary (34.07m OD) and around 4.50m below the level of the road to Greenwood Place (36.55mOD). Current proposals indicate sheet pile basement wall construction, with the sheet piles acting both in retention and as load bearing. The exception to this is being the south-western elevation to the basement, where an reinforced concrete wall is proposed.
- 2.12. As indicated on CampbellReith drawing 11167/G150 the entire area of the proposed Greenwood Centre, including the area of the basement, will be covered with impermeable materials.

- 2.13. The development is classified as Geotechnical Design Category 2 with reference to Eurocode 7.

3.0 ENVIRONMENTAL SETTING

Ground Conditions

- 3.1. Based on the findings of the preliminary intrusive investigation, as detailed in [Ref 1], the anticipated ground conditions in the area of the proposed basement are summarised in Tables 3.1 and 3.2.

Table 3-1: Anticipated Soil Profile in Area of Proposed Basement

Stratum	From		To		Thickness (m)
	(m bgl)	(m OD)	(m bgl)	(m OD)	
Made Ground	0.00	37.00	2.50	34.50	2.50
Alluvial Deposits (where encountered)	2.50	34.50	4.15	32.85	1.65
Reworked London Clay (where encountered)	4.15	32.85	4.60	32.40	0.45
London Clay	4.60	32.40	>35.00	<1.90	>30.50

Where m bgl = meters below ground level.

- 3.2. In appraising the ground conditions the following matters are of note:
- the preliminary nature of the ground investigation and the areas not accessed at the time of the investigation (including the area of worked ground discussed below);
 - an area of 'Worked Ground' is shown on geological maps [Ref 5] on the western corner of the site. . Given this and the paucity of currently available ground investigation data in the west of the site, greater thicknesses of Made Ground in the vicinity of the proposed basement could be present;
 - a tributary to the former River Fleet which crosses the site as indicate on Figure 11 of the GSD (understood to have been subsequently diverted as discussed below).
 - The presence of manmade materials in the upper parts of the Alluvium (Cable Tool Borehole (BH) 2 between 1.00 to 3.10m bgl and Dynamic Continuous Sample hole (DCS) 1 below 2.00m bgl) could be explained by such materials sinking into it or by the stratum having been reworked.

Table 3-2: Generalised Soil Descriptions

Strata	Description
Made Ground	A heterogeneous mixture of man-made soils, predominantly cohesive but locally with an upper layer of granular materials. Where cohesive the Made Ground was generally described as very soft, soft and firm brown slightly sandy gravelly clay.
Alluvium	Where encountered, the Alluvial deposits were generally described as very soft grey slightly gravelly sandy organic clay with occasional black organic patches. Locally the basal part of the Alluvium was described as medium dense brown slightly clayey very sandy gravel.
Reworked London Clay	The reworked London Clay was generally described as firm becoming stiff brown and orange brown gravelly clay. The gravel fraction comprised rounded flint and quartzite.

London Clay	Firm, becoming stiff, fissured brown and grey clay with occasional sand size selenite crystals and orange brown silt partings. With depth the stratum becomes very stiff to hard with rare gravel size pyrite nodules and an absence of visible selenite.
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- 3.3. The presence of gravel in the upper parts of the London Clay suggests reworking by either fluvial action or, possibly, solifluction, hence the designation of 'Reworked London Clay' in the above tables.

Hydrogeology

- 3.4. BH2 and DCS1 were all located close to the proposed basement and along the approximate line of the former tributary to the River Fleet. They encountered alluvial soils and also encountered groundwater around 3.10 to 3.00m bgl (33.45 to 33.85m OD) respectively. The groundwater level in the installations rose during monitoring by 1.53 to 1.21m bgl (35.02 to 35.29m OD). These observations suggest either (i) the presence of groundwater under sub-artesian pressure at the Alluvium/London Clay interface or (ii) the steady ingress of water from the overlying cohesive alluvium during the monitoring.
- 3.5. The remaining locations do not record encountering groundwater during drilling. However, during monitoring the groundwater level in BH1 rose steadily during monitoring from 3.75 to 2.56m bgl (33.15 to 34.34mOD). The remaining installations (located at DCS 2A, DCS 3 and DCS4) were dry during monitoring, however the base of these installations varied between 1 and 2m bgl (34.70 to 36.50m OD)
- 3.6. Given the nature of the observations further monitoring would be required to establish equilibrium conditions and seasonal variation. Given the natural drainage network indicated on a plan of historic rivers in London [Ref 6] groundwater flow is likely to be towards south or south-east. However, further ground investigation works and monitoring would be required to confirm.
- 3.7. Environment Agency website indicates [Ref 7] that the site is not underlain by a Superficial or a Bedrock Aquifer. It indicates that the site is underlain by Unproductive Strata. However, alluvial soils, including granular alluvial soils were locally encountered during preliminary ground investigation works.
- 3.8. The Environmental Health Officer (EHO) at London Borough of Camden (LBC) was contacted. They do not hold records of drinking water abstractions. The Environment Agency web site did not indicate any groundwater source protection zones or drinking water abstractions within 500m of the site. The British Geological Survey (BGS) GeoIndex Website (<http://mapapps2.bgs.ac.uk/geoindex/home.html>) does not record any water wells within 100m of the site

Potential Ground Hazards

- 3.9. The GroundSure Report [Ref 8] has identified a 'very low' or 'no hazard' potential for the following ground stability hazards: landslides, running sands, faults, landslips, ground dissolution of soluble rocks, compressible deposits, coal and non-coal mining & associated cavities natural cavities and brine or gypsum extraction.
- 3.10. The Groundsure Report indicates 'Moderate' hazard potential with respect to volume change potential (shrink-swell clay). With reference to Chapter 4.2 of the National House Building Council (NHBC) Standards, the ground investigation report indicates [Ref 1] that the Made

Ground and Alluvium have a medium volume change potential and that the London Clay (including the reworked London Clay) has a high volume change potential. In the vicinity of trees, limited desiccation appraisal work undertaken in connection with Ref [1], which recorded possible evidence of desiccation to relatively modest depths of around 1.1 to 1.2m bgl.

- 3.11. The Envirocheck Report maps reproduced in Appendix B of this report indicates that the site is not at risk within a 1km search radius of Coastal or Inland flooding, Groundwater Flooding Susceptibility, National Flood Risk Assessment (NaFRA) and EA historic Flood maps.
- 3.12. The Envirocheck Report map reproduced in Appendix B of this report indicates the site is located at least 1km from Flood Zones 2 & 3 and therefore low risk.
- 3.13. The Envirocheck Report map reproduced in Appendix B of this report indicates the site may be susceptible to Pluvial or Minor River Flood from 100 year and 1000 year return according to Risk Management Solutions flood maps.
- 3.14. The site is not located within the critical area for shallow or deep foundations and basements [Ref 9]. With reference to Figure 17 of the GSD, the site is not within an area of known significant landslide potential.
- 3.15. By reference to information held locally by CampbellReith [Ref 10], the site is remote from scour hollows, EDF deep cable tunnels, Royal Mail and government communication tunnels. Regulatory responses from Crossrail and London Underground (contained in Appendix B) indicate that site is remote from any of their assets and infrastructure.
- 3.16. [Ref 9] indicates that a storm relief sewer runs north to south beneath Highgate Road adjacent to the eastern site boundary and that a main sewer runs close to the western boundary of the site. Reference to the London County Council Main Drainage Plan No. 2 [11] also shows both of these sewers at the same location: a storm relief sewer beneath Highgate Road to the east of the site; and, a main sewer to the west of the site. However, the main sewer to the west of the site is labelled the 'Fleet Sewer'.
- 3.17. Statutory services plans have been obtained for the site by Engineering Land and Building Surveys Limited in January 2013. These should be referred to with regards to the proposed development. Whilst the Thames Water plans show no significant water or sewer pipes on site, it is noted that a large diameter (1.22m) storm relief sewer at approximately 10m bgl is located beneath Highgate Road, believed to be the storm relief sewer indicated in [Ref 9] and [Ref 11]. The Thames Water plans suggest that the main sewer ('Fleet Sewer') is located at least 40m to the west of the site. It is recommended that the location of this sewer is confirmed with them in due course.
- 3.18. Based on the above principle identified ground hazards in relation to the proposed basement are summarised in Table 3.3.

Table 3-3: Summary of Identified Ground Hazards

Hazard	Distance	Description
Made Ground	On site	There is a potential for a significant thickness of Worked Ground to be present on site, which may extend to the area of the proposed basement. Such materials have variable, but generally poor geotechnical properties, with associated implication for foundation design and other below ground works.

Alluvial Clay	On site	Such deposits generally have poor geotechnical properties and can be associated with long term consolidation and creep settlements upon loading.
Shallow Groundwater	On site	Perched water above the London Clay, associated with the former tributary of the River Fleet, may be present.
Volume Change Potential	On site	Whilst soils with a high volume change potential have been recorded on site, most of the site is devoid of trees and only limited depths of desiccation have been encountered to date. Whilst such matters will need to be considered in the design of foundations and in establishing heave protection measures, in this instance they are likely to be of reduced concern, especially given the depth of the proposed basement and the distance to the nearest recorded tree.
Aggressive Soil	On site	The London Clay, Alluvium and materials derived from them can naturally contain elevated concentrations of minerals that can be aggressive to buried concrete. With reference to Special Digest 1 produced the Building Research Establishment (BRE SD1), test results to date suggest an Aggressive Chemical Environment for Concrete (ACEC) Class of AC-4.
Former Structures	On site	There is the potential for obstructions, relic basements and an increased thickness of Made Ground to be present on site, which may hamper foundation construction and the formation of excavations other below ground works.

Hydrology

- 3.19. Figure 12 of the GSD, the ordnance survey plans [Ref 8], geological data consulted (as discussed above) and the site reconnaissance indicate that the site is more than 100m from surface water features, ponds and recorded spring lines.
- 3.20. Figure 11 of the GSD indicates that a historic tributary of the River Fleet passes through the site. As discussed above, available data indicates this to have been culverted into a sewer to the west of the site. Typically such culverts enter the storm drainage network and, in turn, the River Thames.

Flooding

- 3.21. A flood risk assessment report has been prepared for the site as referred to in Table 1.1. Reference should be made to that report in relation to flooding matters.
- 3.22. Greenwood Place is not listed as having flooded in CPG4 whereas Highgate Road did in 1975. This is indicated on Fig 5 of GSD, which shows flooding risk in relation to the lower lying former cutting to the south west.
- 3.23. The London Borough of Camden has produced a Strategic Flood Risk Assessment (SFRA) as part of the North London study report. The report confirms the site at Greenwood Place to be situated within Flood Zone 1, and at low risk of all forms of flood risk.
- 3.24. The Flood Zone Maps, which are available on the Environment Agency's website indicate the site to be located within Flood Zone 1, denoted by white shading, and therefore unlikely to be affected by fluvial flooding.
- 3.25. The site is outside of the 1 in 1000 year fluvial flood zone. Therefore there is a low risk of flooding from this source.

Site History

- 3.26. [Ref 4] indicates that the site was originally subject to residential development around 1800. More recent information relating to the site history has been obtained by reference to historic maps contained within [Ref 8], including plans at 1:1000, 1:1250, 1:2500 and 1:10,000 scale and dated 1872 through to 2012. This data is summarised for the site in Table 3.4 and for a 100m buffer zone in Table 3.5.

Table 3-4: Site History

Date	Development
1872	The north eastern half of the site comprises terraced housing (fronting onto Highgate Road). A number of buildings labelled Prospect Place are present in the south west and a number of unidentified buildings are located in the north west. The rest of the site comprises soft landscaping/ communal gardens/ allotments.
1894-1896	Site layout largely unchanged. The buildings in the north west are no longer shown.
1915-1916	A 'Bottling Store' to the north has been extended southwards into the north west quadrant of the site. Prospect Place is no longer shown and a new building is shown in its place in the south west.
1936	Site layout remains unchanged.
1952	The 'Bottling Store' is now labelled a 'Heavy Chemicals Warehouse' on site. A platform is indicated in connection with this. The footprint of the building in the south west has been extended north west.
1963-1968	The 'Heavy Chemicals Warehouse' is now only labelled as a 'Warehouse'. Part of the building in the south west of the site has been demolished.
1973-2012	The site layout is as existing with the two day care centres and an area of soft landscaping in the north east of the site.

Table 3-5: Surrounding Land History (<100m)

Date	Development
1872	St John the Baptist's Church and Prospect Place bound the site to the south. Housing is shown to the immediate north west and north east of the site. Railway sidings are shown 25m south west.
1894-1896	Two 'Bottling Stores' are shown 20 and 70m north west. A 'Coal Shed' is labelled 40m south west. Slopes are shown down to the railway sidings to the south west adjacent to the south western site boundary. A 'Smithy' and a 'Laundry' are shown 45m north and 55m north west of the site respectively. An 'Omnibus Company's Stables' are labelled 75m south east. A 'Tramway' is shown along Highgate Road adjacent to the north eastern site boundary.
1915-1916	The railway sidings have now been extended towards the site and now bound the site to the south west. The 'Omnibus Company's Stables' and 'Smithy' are no longer labelled.
1936	The area bisecting the site now houses a number of unmarked buildings. A 'Depository' and 'Warehouse' are labelled 25m north west. The 'Laundry' 45m north is now labelled a 'Warehouse'. A 'Wallpaper Factory' and 'Warehouse' are labelled 80m north west, and 90m east of the site respectively.
1952	The tramway is no longer shown. The buildings bisecting the site are now labelled as 'Coach Building Works'. The 'Bottling Stores' to the north west are now labelled as a 'Garage' and 'Wallpaper Factory' and the 'Warehouse' 25m north west is now labelled a 'Cabinet Works'. 'Welding Works' are shown 100m south east.
1963-1968	A large amount of the railway sidings to the south west are no longer shown and the area is now labelled a 'Civil Engineering Depot'. The remaining railway lines are labelled 'Dismantled Railway'. The 'Wallpaper Factory' to the north west is now only labelled a 'Factory'. The 'Depository' and 'Cabinet Works' are now labelled as a 'Clothing Factory' and 'Exhibition Works' respectively. The 'Coachbuilding Works' in the centre of the site is also labelled as an

	'Exhibition Works'. The buildings adjacent to the south western site boundary are no longer shown. Vacant land is shown on the northern side of Highgate Road to the immediate north east of the site.
1973-1977	A new building has been constructed bisecting the site, which is labelled a 'Warehouse'. The area of land to the south west of the site is now labelled as a 'Depot' and only the area to the north west is labelled as a 'Civil Engineering Depot'. All the industries previously mentioned are now labelled as 'Works'.
1981-2012	Surrounding land use largely unchanged.

4.0 SCREENING

- 4.1. In accordance with the GSD, an initial screening exercise has been undertaken of Subterranean Flow (Table 4.1) Slope Stability (Table 4.2) and Surface Flow and Flooding (Table 4.3). These tables follow the form of the BIA screening flowcharts which are presented in Appendix E of the GSD.

Table 4-1: Subterranean (Groundwater) Flow

No.	Question	Answer	Justification
1a	Is the site located directly above an aquifer?	No	Refer to Section 3.7
1b	Will the proposed basement extend beneath the water table surface?	Possibly	Available investigation data suggests a groundwater level of around 33.45 to 33.85m OD (possibly shallower) vs. a finished floor slab level of 31.43m OD
2	Is the site within 100m of a watercourse, well (used/disused) or potential spring line.	No	No such features recorded within 100m of the site on Figures 2 or 12 of the GSD, aerial photography (Google Earth), ordnance survey maps (section 3), geological information (see section 3), Environment Agency website (see section 3). Nor were such features noted during the site reconnaissance (see section 2). Whilst a tributary to the former River Fleet once crossed the site, this is understood have since been diverted and culverted.
3	Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site is not located within the areas indicated on Figure 14 of the GSD.
4	Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No	Refer to CampbellReith (CR) Drawing 11167/G150 in Appendix A.
5	As part of the site drainage will more surface water (e.g. Rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and / or Sustainable Urban Drainage)?	No	Drainage to be by piped network. The proposed basement area is covered. For the proposed development there is no net increase in hardstanding; volumes and peak flow rates will not be materially changed (CampbellReith drawing 11167/G150).
6	Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just the pond chains on Hampstead Heath) or spring line?	No	No such features are within 100m of the site as discussed above.

Table 4-2: Slope Stability

No	Question	Answer	Justification
1	Does the existing site include slopes, natural or manmade, greater than 7o?	No	Figure 16 of the GSD indicates that the site is not in an area where the slope angle exceeds 7o. No such slopes were noted during the site reconnaissance [Section 2]. No slopes areas were recorded on the topographical survey information [CR Drawing 11167/G100].
2	Will the proposed re-profiling of the landscape at the site change slopes at the property boundary to more than 7o?	No	Development proposal plans.
3	Does the development neighbour land, including railway cuttings and the like, that slope greater than 7o?	No	Figure 16 of the GSD indicates that the site is close to an area where the slope angle may exceed 7o. However, more detailed consideration of the site reconnaissance [Section 2] and ordnance survey maps indicate that such a feature, if present, is located at least 45m to the southwest of the site
4	Is the site in a wider hillside setting with a slope of more than 7o?	No	Site reconnaissance, ordnance survey data and Figure 10 of the GSD indicated the area around the site has a modest gradient of around 1 to 2o down to the south-west. However, as discussed in question 3, with reference to Figure 16 of the GSD there could be a localised area at least 45m to the south-west of the site where gradient exceeds 7o.
5	Is the London Clay the shallowest strata at the site?	Yes	Geological and ground investigation data as discussed in Section 3, although the London Clay is overlain by and Made Ground and, locally, by Alluvium.
6	Will any tree(s) be felled as part of the proposed development and/or any works proposed within any tree protection zones where trees are to be retained?	No	Refer to development proposals plans. No trees are indicated to be removed as part of basement construction, although trees may be felled as part of the wider site development works. [Ref 12] indicates that the basement is outside proposed root protection areas.
7	Is there a history of shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	No	Whilst the site is underlain by clays with a high-shrink swell potential, there is a relative paucity of trees on site. Limited assessment in the vicinity of these recorded possible depths of desiccation of only 1.10 and 1.20. The proposed basement is located 39m from the nearest tree. No evidence of shrink-swell subsidence was noted in the site walk over. Limited data indicates that the site may have a relatively shallow groundwater level.
8	Is the site within 100m of a watercourse or potential spring line?	No	See answer to question 2 of Table 4.1
9	Is the site in an area of previously worked ground?	Possibly	As discussed in Section 3, existing ground investigation data indicates that Made Ground may extend to 2.50m bgl. The

			possibility of a greater thicknesses cannot be discounted due to the limitations of the preliminary ground investigation and the findings of the desk study.
10	Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No	By reference to the Environment Agency website site is not underlain by an aquifer. Whilst the London clay is overlain by water bearing strata, it is anticipated that this will be largely controlled by the installation of sheet sheet piles toeing into the London Clay. Significant dewatering is therefore not anticipated.
11	Is the site within 50m of the Hampstead Ponds?	No	Figure 14 of the GSD indicates that site is considerably greater than 50m from the Hampstead Ponds.
12	Is the site within 5m of a highway or pedestrian right of way?	Yes	The pedestrian pavement to Greenwood Place is adjacent to the south eastern corner of the excavation.
13	Will the proposed basement significantly increase the differential depth of the foundations relative to neighbouring properties?	Possibly	The excavation is 2.25m from the wall of Deane House. The foundation depth for Deane House is not known at this stage, although part of this building is understood to have a basement (floor level 35.88m OD).
14	Is the site over (or within the exclusion zone of) any tunnels?	No	Evidence of recorded tunnels was not established in the desk study research outlined in section 3.12.

Table 4-3: Surface Flow and Flooding

No	Question	Answer	Justification
1	Is the site within the catchment of the ponds on Hampstead Heath?	No	Refer to Table 4.2.
2	As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No	The part of site associated with the proposed basement is entirely covered with buildings and/or hard standings as will the proposed development; the volume and peak surface water run-off will be materially unchanged (CampbellReith drawing 11167/G150).
3	Will the proposed basement development result in a change in the proportion of hard surfaced/paved external areas?	No	See answer to question 4 in table 4.1
4	Will the proposed basement result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream water courses?	No	The status quo will be maintained: the proportion of existing site buildings and/or hard-standings remain unchanged. (CampbellReith drawing 11167/G150). The site is remote from existing watercourses.
5	Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream water courses?	No	The status quo will be maintained: for the site as a whole the proportion of existing site buildings and/or hard-standings to the proposed remain the same. The site is remote from existing watercourses.
6	Is the site in an area known to be at risk from surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and King's Cross, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water features?	No	The site is not within an area of known high surface water flood risk (see Section 3.20). The site is remote from existing water features. Refer to the Flood Risk Assessment report for the site produced by CampbellReith for more details.

5.0 SCOPING

- 5.1. This scoping study incorporates a site walkover, desk study data and ground investigation data as discussed in sections 2 and 3 of this report. It considers the findings of the screening exercise presented in section 4 where either 'yes' or 'unknown' or 'possibly' responses have flagged a potential issue.

Ground Model

- 5.2. The ground conditions established in the preliminary investigation are presented in Table 3.1, however the potential for an increased thickness of Made Ground to be present cannot be discounted. An equilibrium groundwater level of around 33.85m OD or more is currently anticipated in the vicinity of the basement, however, further monitoring is recommended so as to confirm matters. At its lowest point an underside of slab/excavation level of 30.73m OD is anticipated.
- 5.3. The proposed excavation is close to Deane House to the northwest and to the pedestrian pavement to Greenwood Place to the northeast. Lensham House is located 14m from the proposed basement.

Potential Impacts and Possible Control Measures

- 5.4. With due consideration of the ground model, the potential impacts in relation to the matters requiring further consideration from the screening stage are discussed in Tables 5.2 and 5.3 below. For each matter discussed the potential impact is defined in terms significance based on EIA terminology as defined in Table 5.1 below. Tables 5.2 and 5.3 also consider the potential residual significance assuming the suggested mitigation measures are taken forward. For each potential impact a comment is presented on the pertinent matters and a concluding discussion is presented in Section 6.0.

Table 5-1: Significance Matrix used within the Assessment

MAGNITUDE OF EFFECT	SENSITIVITY OF RECEPTOR				
	Very high	High	Medium	Low	Negligible
Very large	Substantial Significance	Substantial Significance	Moderate Significance	Moderate Significance	[1]
Large	Substantial Significance	Moderate Significance	Moderate Significance	Minor Significance	[2]
Medium	Moderate Significance	Moderate Significant	Minor Significance	[2]	Neutral Significance
Small	Moderate Significance	Minor Significance	[2]	Neutral Significance	Neutral Significance
Negligible	[1]	[2]	Neutral Significance	Neutral Significance	Neutral Significance
[1] The choice between 'Moderate Significance', 'Minor Significance' and 'Neutral Significance' will depend on the specifics of the impact and will be down to professional judgement and reasoning.					
[2] The choice between 'Minor Significance' and 'Neutral Significance' will depend on the specifics of the impact and will be down to professional judgement and reasoning.					

Table 5-2: Subterranean (Groundwater) Flow Potential Impacts

No	Question	Potential Impact
Q1a	Is the site located directly above an aquifer?	<p>Whilst available information indicates that the basement will extend below the water level and below the level of the granular alluvium recorded in BH2, its limited size an isolated nature (compared to the development of the site as a whole) will mean that the potential for any off-site impacts on groundwater levels is limited.</p> <p>Assuming groundwater flows to the southeast (i.e normal to the long axis of the basement), then based on paragraph 171 of the GSD document, the groundwater level behind the proposed basement may rise by around 60 to 120mm. Such a change in level is unlikely to have a notable effect on the foundations to Deane House, assuming these to be founded in the London Clay. Although these assumptions would need to be confirmed through ground investigation. Given the existing groundwater level, such rise this likely to have a significant effect on the existing basement at Deane House and in any case this existing basement forms part of the client's site. Given the anticipated flow direction this matter is unlikely to affect the buildings on Murphy's Yard to the southwest. Given the size of site of the site relative to the size of the basement, no significant off site affects are anticipated to southeast or northeast.</p> <p>Consequently this matter is considered to be of minor significance, although further investigation is recommended to confirm matters.</p> <p>Water ingress could affect the proposed basement, which is potentially of moderate significance. However, assuming the basement is designed to address hydrostatic pressures as required in British Standard (BS) 8102 'Protection of Structures against Water from the Ground', the matter is of residual neutral significance.</p>
Q1B	Will the proposed basement extend beneath the water table surface?	

Table 5-3: Slope Stability: Potential Impacts

No	Question	Potential Impact
5	Is the London Clay the shallowest strata at the site?	<p>The London Clay can be associated (i) ground movements associated with volume change, (ii) ground movements associated with stress relief occurring as a result of basement excavation and (iii) ground conditions aggressive to buried concrete.</p> <p>In relation to item (i) the preliminary ground investigation was not suggestive of desiccation to significant depths, the basement is relatively remote from trees and the underside of basement slab is comparatively deep.</p> <p>In relation to item (ii) it is recommended that the proposed basement slab is designed to withstand the associated post construction soil heave pressure (likely to be in the region of 70kN/m²). Alternatively consideration should be given to a suspended floor slab underlain by a suitable void former.</p> <p>In relation to item (iii) current investigation data suggests that this could be addressed by adopting a BRE SD1 (2005ed) ACEC Class of AC-4, although this could be modified by additional testing in the next phase of ground investigation works.</p> <p>On the above basis this matter is considered to be of minor significance.</p>
9	Is the site in an area of previously worked ground ?	<p>Available ground investigation suggests up to 2.50m of Made Ground could present in the area of the basement, although the possibility of greater thicknesses cannot be discounted at this stage. The presence of such materials could present an issue for the stability and settlement of shallow foundations. A piled foundation solution is therefore proposed. In routine pile design no positive contribution towards pile capacity would be assumed in relation to the Made Ground, with the pile gaining its capacity from the underlying undisturbed strata.</p> <p>On the above basis this matter is considered to be of neutral significance.</p>
12	Is the site within 5m of a highway or pedestrian right of way ?	<p>Excavations could result in ground movements detrimental to adjacent Greenwood Place road and any infrastructure contained therein. Statutory undertakers should be consulted, so as establish if any buried utilities are present and the owners of these assets, along with the owner of highway consulted, so as to determine any constraints to design, for example, easements, surcharge loadings on the walls, and limiting values on ground movement. This matter is considered to be of substantial significance. It is noted that a sewer and a water supply pipe, both operated by Thames Water utilities limited, are present beneath the road pavement to Greenwood Place.</p> <p>The part of the basement excavation to the highway is to be supported by sheet piles. The matters outlined above will need to be modelled in the design of the relevant walls. They may result in a need for additional support to the excavation, such as propping and/or monitoring. On such a basis the residual risk is considered to be of minor significance.</p>

13	Will the proposed basement significantly increase the differential depth of the foundations relative to neighbouring properties?	<p>Excavations could result in ground movements, resulting in damage to neighbouring buildings which is of potential major significance.</p> <p>The proposed basement around 2.25m from Deane House and around 2.00m from buildings on 'Murphy's Yard' to the southwest. In the first instance it is recommended that foundations to these buildings are established through the excavation of foundation inspection pits. Subsequent to such an investigation such matters should be reappraised. If the nature of the foundations are such that they would be at risk from the basement excavation, then consideration should be given to mitigation measures such as underpinning or to ensuring that ground movements are kept to within tolerable limits by modelling, supporting the excavation/basement wall and monitoring.</p> <p>In theory such matters may require consideration in relation to Lensham House, however, if given the location of this building it is unlikely to experience significant strains (although this should be confirmed by calculation in due course).</p> <p>Consideration may also be needed in relation to the method of basement wall construction, for example by considering 'silent' sheet piling methods or by considering alternative forms of wall construction, such as bored pile wall, so as to limit ground movements and vibration.</p> <p>Therefore, subject to suitable engineering design, this matter can be considered to have a residual minor significance.</p>
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- 5.5. The extent and nature of any underpinning to Deane House and the buildings on Murphy's Yard would need to consider the potential for differential movement between the new, stiffer, foundations and the parts of the buildings on original foundations. Conventional underpinning would need to be undertaken in an appropriate and controlled 'hit and miss' sequence to minimise the risk of movement. Conventional underpinning could be hampered by the presence of groundwater or excessive thicknesses of Made Ground, which may require consideration of alternatives such as piling.
- 5.6. The current proposals indicate that the basement walls are to be of main of load bearing sheet pile construction. A small section of the basement wall, the south-western elevation is indicated to be of reinforced concrete construction. Currently it is anticipated that the associated excavation will be supported in the temporary case by a sheet pile wall which may also be required to prevent groundwater ingress into the investigation. This will be reviewed as part of detailed design and once the depth to the foundations to the buildings on Murphy's Yard have been established and additional groundwater monitoring undertaken.
- 5.7. It is noted that sewer and a water supply pipework are present beneath Greenwood Place, both operated by Thames Water Utilities Limited. At its closest point the sewer is at around 7.50m from the northeastern part of the proposed basement and is understood to have an invert level of around 35m OD. In the relevant part of the basement a planned dig depth of around 32m OD is anticipated. Upon excavation of the soil, assuming a low wall stiffness (i.e. a pure cantilever wall), CIRIA Report C580 indicates horizontal and vertical deflections of around 5 and 2mm respectively at the invert level of the sewer. The water supply pipework is anticipated to

be at a depth of around 35.50m OD is located around 10.50m from the proposed basement. Based on the same assumptions horizontal and vertical deflections of around 3.5 and 1.6mm respectively are anticipated for this feature upon excavation of the soil.

- 5.8. In addition to the above deflections due to installation of the wall would need to be considered, which could be minimised if the sheet piles were pressed in using 'silent' piling techniques.
- 5.9. Given the above it is also assumed that during detailed design the installation technique, modelling and monitoring programme will be developed such that the risks of ground movement will be sufficiently reduced.
- 5.10. The existing information indicates that the basement requires detailed engineering design, but subject to appropriate design and construction, it should be possible to address the potential issues identified in Tables 5.2 and 5.3.

6.0 CONCLUSIONS AND RECOMMENDATIONS

- 6.1. The existing information and assessment suggests that, subject to supplementary investigations and detailed design, the proposed basement at the site is unlikely to :
- cause harm to the built and natural environment and local amenity;
 - result in flooding; or
 - lead to ground instability.
- 6.2. For ease of auditing against section 8.1 of the Guidance for Subterranean Development (GSD) key aspects of this report are summarised in Table 6.1 below.

Table 6-1: Summary Auditable Matters

Issue	Comment
Author credentials	Given Section 1.10
BIA Flowcharts	Used in Section 4.0
Temporary and Permanent Works that may impact geology, hydrogeology and hydrology	Discussed in Section 5 and in the remainder of Section 6.
Investigation of issues associated with impacts on land stability, hydrogeology and hydrology	This report is based on a site walkover and existing ground investigation and desk study data (Section 2 and 3). Potential impacts are identified in Section 4 and discussed in Section 5. Recommendations for further work in relation to detailed design are given in section 5 and below.
Presentation of Maps	See Appendix A
Assessment Methodology	A desk study, based on the requirements of 7.2.1 of the GSD, is presented in Sections 2 and 3 and is considered in sections 4 and 5. Other matters relating to the assessment methodology are discussed in 6.3 below.
Has the need for mitigation been considered and included in the scheme	Mitigation measures are discussed in section 5 and in the remainder of Section 6. It is anticipated that these measures are taken forward as the design is developed.
Has the need for monitoring been addressed and is the proposed monitoring sufficient and adequate.	The need for monitoring is discussed in section 5 and below. Such matters will need to be given due consideration in design development to enable suitable schemes to be established.
Residual impacts	As discussed in Section 5 residual impacts are likely to be of only neutral or minor significance.

- 6.3. This report is based on a site reconnaissance, desk study data, ground investigation and data held in the CampbellReith GIS database.
- 6.4. The need and extent of any monitoring and the presentation of calculations are matters that can be addressed through design development.
- 6.5. The client will be required to seek party wall awards for the proposed works which comply with current legislation.

Further Site Investigation and Study:

- 6.6. To address the potential impacts discussed in Section 5 of this report the following further investigations are recommended during the detailed design stage:
- further phase of ground investigation is required for detailed design;
 - this investigation should include the construction of additional groundwater monitoring points closer to the proposed basements and to include additional monitoring of groundwater levels;
 - the investigation should also include additional foundation inspection pits on the south eastern elevation of Deane House and the northeastern elevation of the buildings on Murphy's Yard, so as to establish the possible need for underpinning and to provide data in any ground movement analysis to be undertaken as part of detailed design;
 - the Client undertakes consultation with local residents to establish local concerns;
 - statutory undertakers, including utility operators, are to be consulted to establish if any such assets could be affected by the works and associated constraints; and
 - the owners of Greenwood Place road and associated footpaths (understood to be London Borough Camden) should be consulted to establish associated constraints.

Other Matters

- 6.7. The design and construction of the basements will need to be undertaken under CDM Regulations 2015. In relation to this the contents of the appended UXO Risk Assessment should be noted.
- 6.8. The basement floor slabs should be designed to address hydrostatic pressures as required in BS8102 'Protection of Structures against Water from the Ground'.

TECHNICAL REFERENCES

No *	Reference Title	Type	Section
5	British Geological Survey. North London. England and Wales Sheet 256. Solid and Drift Edition.	Map	3
6	Lost Rivers of London, NJ Barton	Reference Book	3
7	Environment Agency Website (http://www.environment-agency.gov.uk)	Website	
8	EMapSite GroundSure, EnviroInsight, GeoInsight and MapInsight report packages Ref: EMS-184935_271161 dated 8 th November 2012	Desk Study Data	3
9	The Engineering Implications of Rising Groundwater Levels in the Deep Aquifer Beneath London. CIRIA Report SP69	Technical Report	3
10	CampbellReith GIS Database	Database	3
11	London County Council Main Drainage Map 2: Main, Intercepting, Storm Relief, and Outfall Sewers. Pumping Stations and Outfall Works. November 1930.	Map	3
12	Simon Jones Associates Drawing SJA TCP 13043-01, dated April 2013, and associated letter report.	Map & Report	4

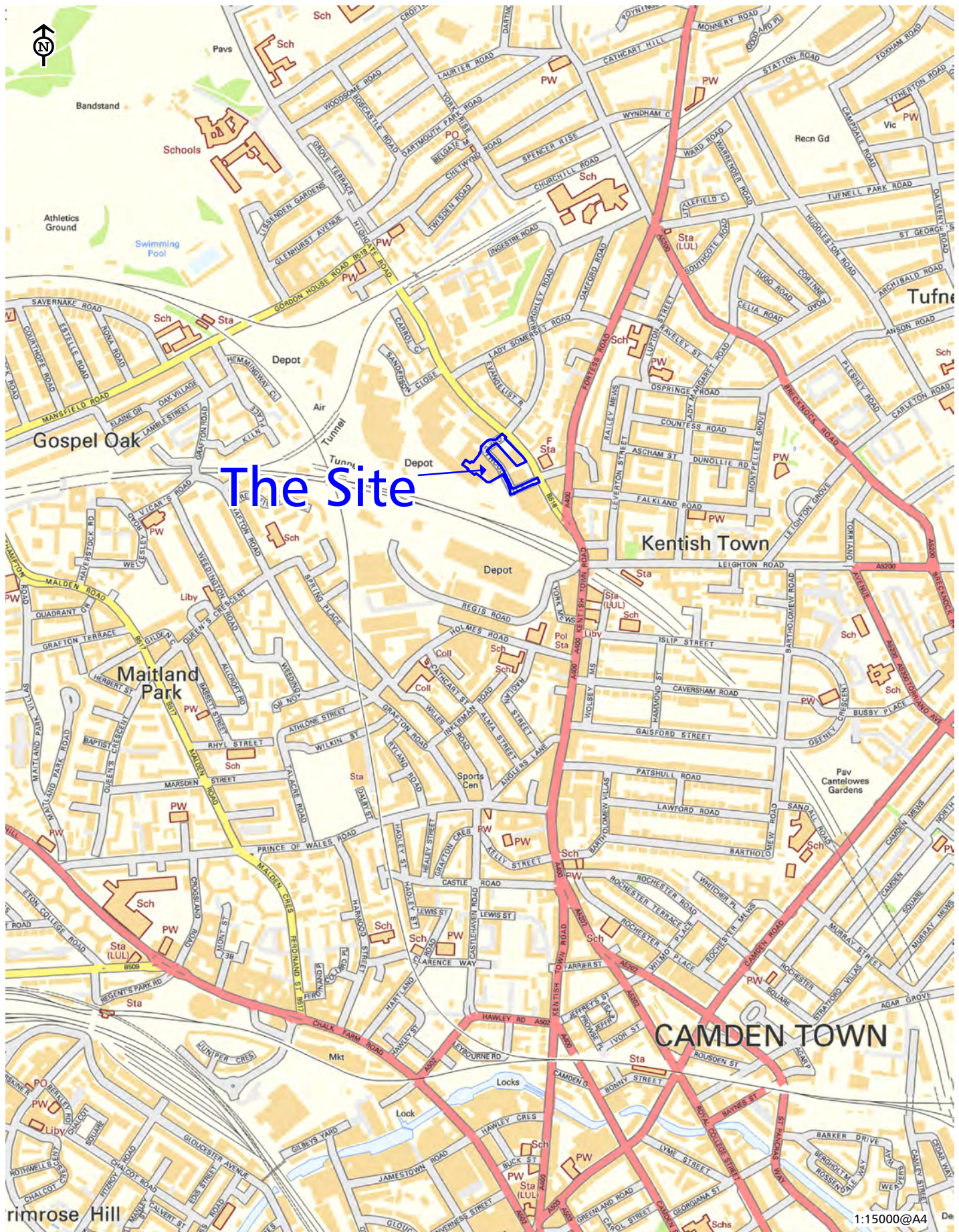
* Note numbering continues from Table 1.1

LIMITATIONS

Environmental & Geotechnical Interpretative Reports

1. This report provides available factual data for the site obtained only from the sources described in the text and related to the site on the basis of the location information provided by the client.
2. Where any data or information supplied by the client or other external source, including that from previous studies, has been used, it has been assumed that the information is correct. No responsibility can be accepted by CampbellReith for inaccuracies within this data or information. In relation to historic maps the accuracy of maps cannot be guaranteed and it should be recognized that different conditions on site may have existed between and subsequent to the various map surveys.
3. This report is limited to those aspects of historical land use and enquiries related to environmental matters reported on and no liability is accepted for any other aspects. The opinions expressed cannot be absolute due to the limit of time and resources implicit within the agreed brief and the possibility of unrecorded previous uses of the site and adjacent land.
4. The material encountered and samples obtained during on-site investigations represent only a small proportion of the materials present on the site. There may be other conditions prevailing at the site which have not been revealed and which have therefore not been taken into account in this report. These risks can be minimised and reduced by additional investigations. If significant variations become evident, additional specialist advice should be sought to assess the implications of these few findings.
5. The generalised soil conditions described in the text are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and have been developed on interpretations of the exploration locations and samples collected.
6. Water level and gas readings have been taken at times and under conditions stated on the exploration logs. It must be noted that fluctuations in the level of groundwater or gas may occur due to a variety of factors which may differ from those prevailing at the time the measurements were taken.
7. Please note that CampbellReith cannot accept any liability for observations or opinions expressed regarding the absence or presence of asbestos or on any product or waste that may contain asbestos. We recommend that an asbestos specialist, with appropriate professional indemnity insurance, is employed directly by the client in every case where asbestos may be present on the site or within the buildings or installations. Any comments made in this report with respect to asbestos, or asbestos containing materials, are only included to assist the client with the initial appraisal of the project and should not be relied upon in any way.
8. The findings and opinions expressed are relevant to those dates of the reported site work and should not be relied upon to represent conditions at substantially later dates.
9. This report is produced solely for the benefit of the client, and no liability is accepted for any reliance placed upon it by any other party unless specifically agreed in writing.

Appendix A: Figures and Drawings

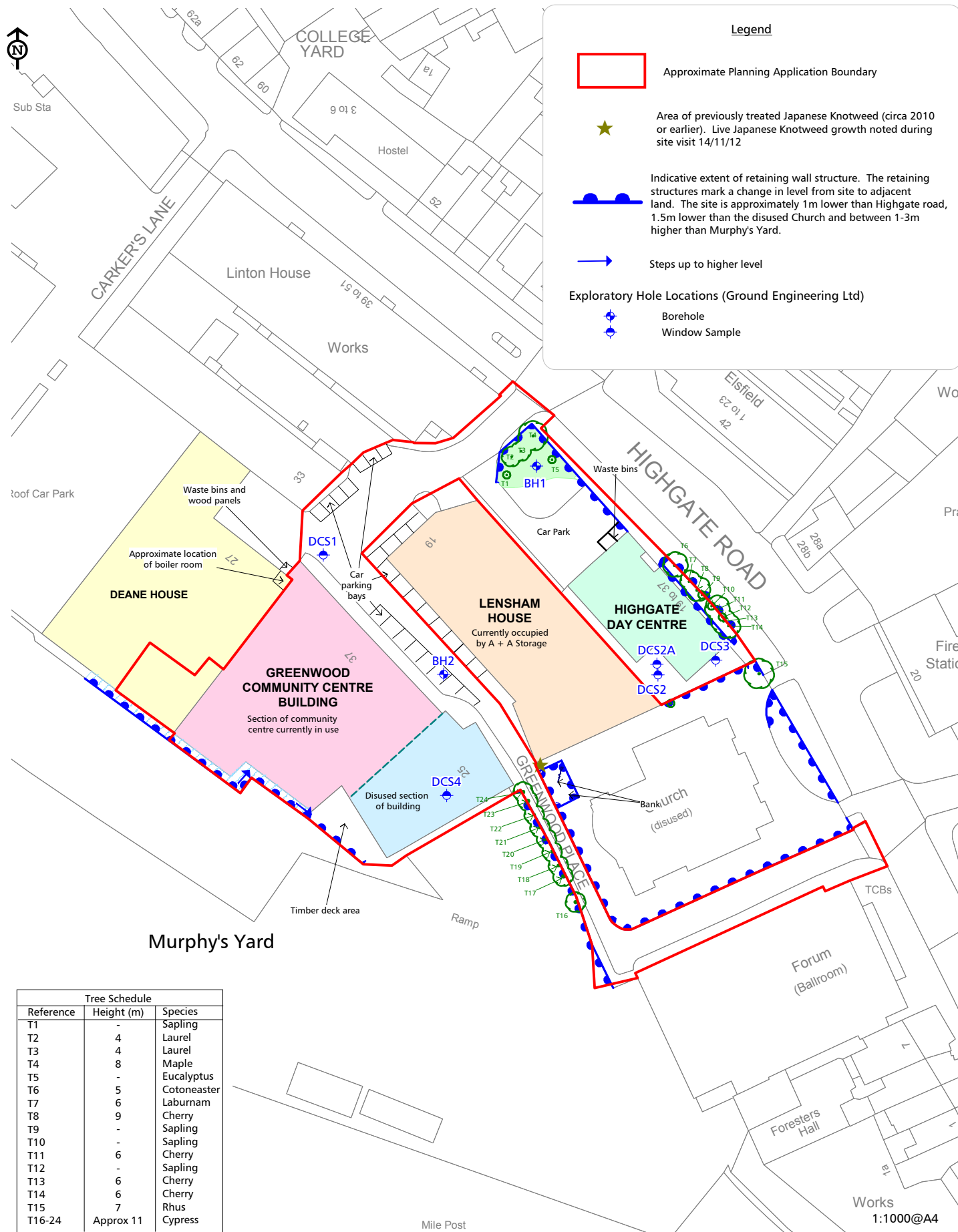


Greenwood Place Community Centre
Client: London Borough of Camden

Figure 1:
Site Location Plan

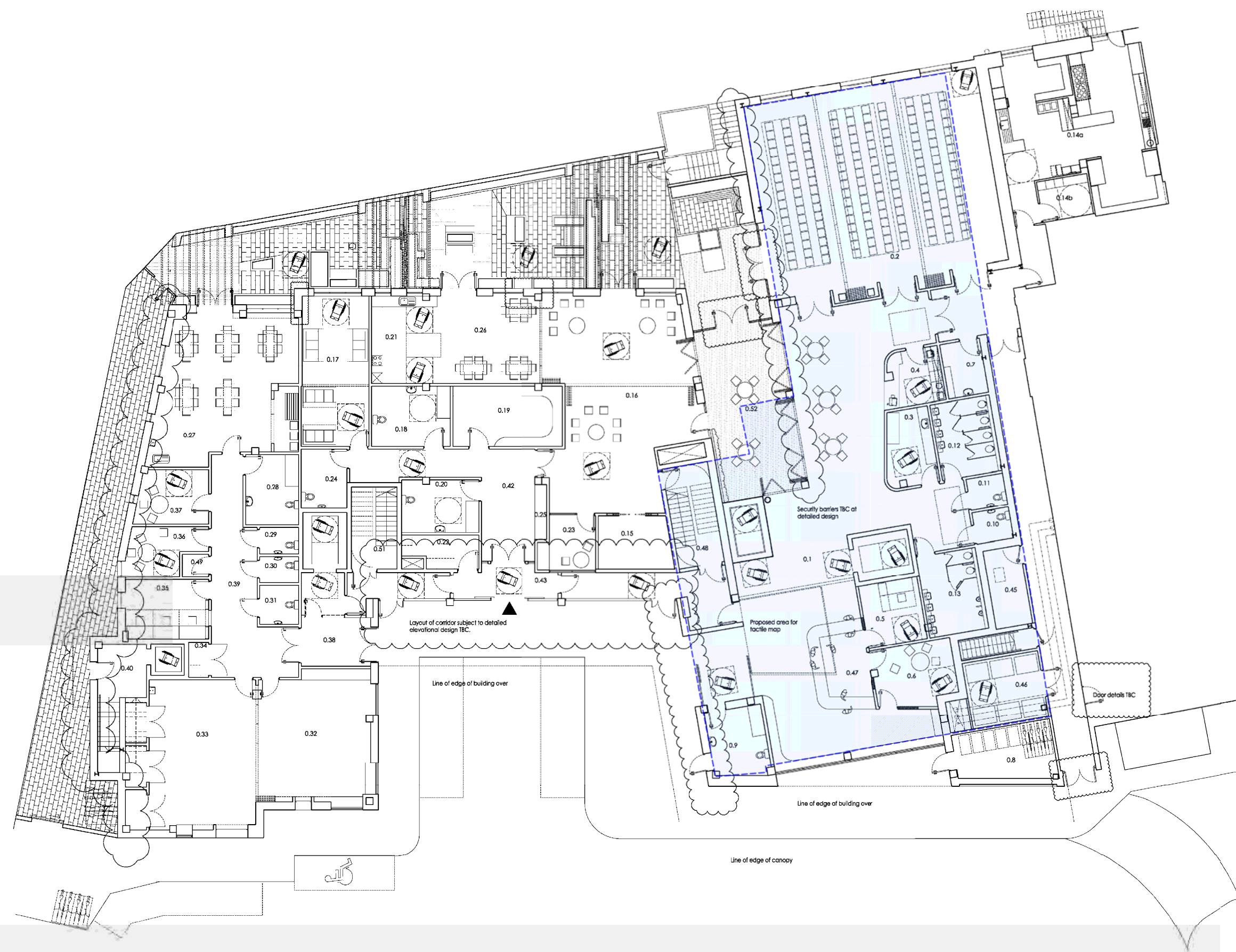
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CampbellReith OS Copyright: © Crown copyright. All rights reserved. Licence number 100020027
Contains Ordnance Survey data © Crown copyright and database right 2013.
Job Number: 11167
Drawn by - Checked by: SC - MJ
Drg No - Status/Revision: G1012 - A
File location: O:\11000 - 11249\11167 - Greenwood Place Community Centre\Workspaces\Transportation (pdf in Outputs)
Date (Revision History): 19/07/2013 (updating boundary 13/08/13, KM)

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Greenwood Place Community Centre
Client: London Borough of Camden

Figure 2:
Annotated Site Layout and
Exploratory Hole Location Plan



Greenwood Place Community Centre

Client: London Borough of Camden

Figure 3a:
Greenwood Centre: Proposed Development Plan

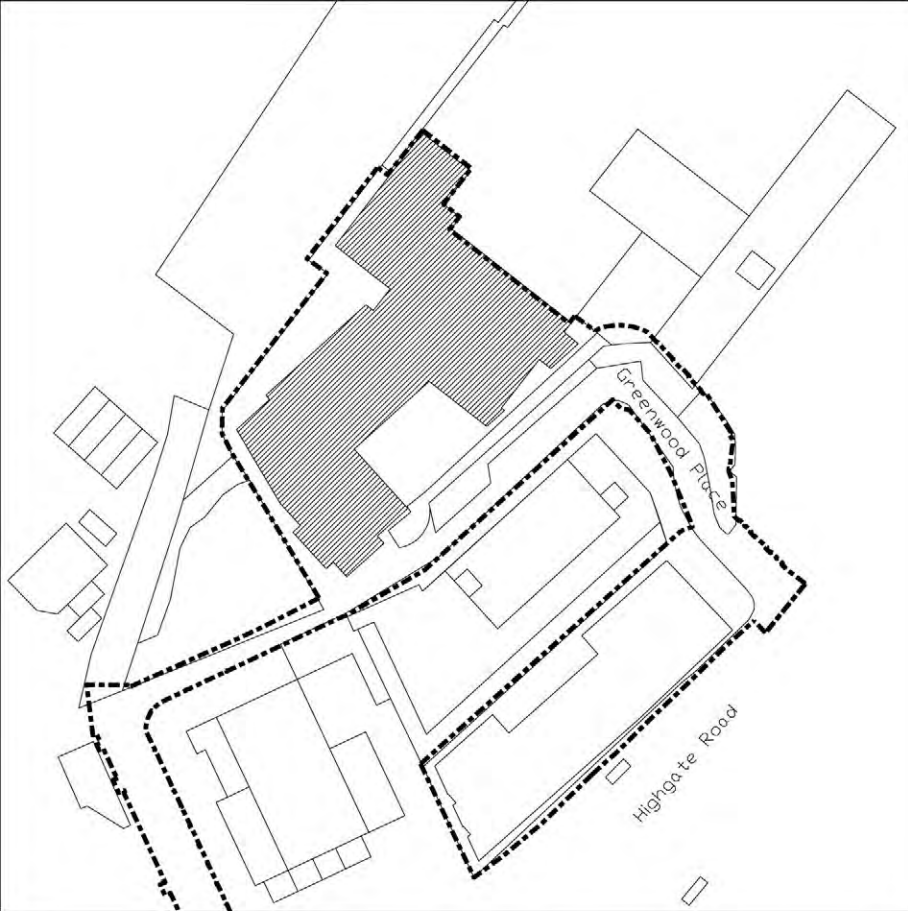
NTS

Scale: NTS
Copyright: © Crown copyright. All rights reserved. Licence number 100020027
Based on drawing no. SK160 (Aug 2013), PCK Architects
Job Number: 11167
Drawn by - Checked by: LB - AD
GIS014 - B
O:\11000 - 11249\11167 - Greenwood Pl. Commu\Workspaces\LOM (pdf in Outputs)
File location: 23/03/2015 (First Issue, 13/08/2013, KM; Second Issue, 23/03/15, LB)
Date (Revision History):



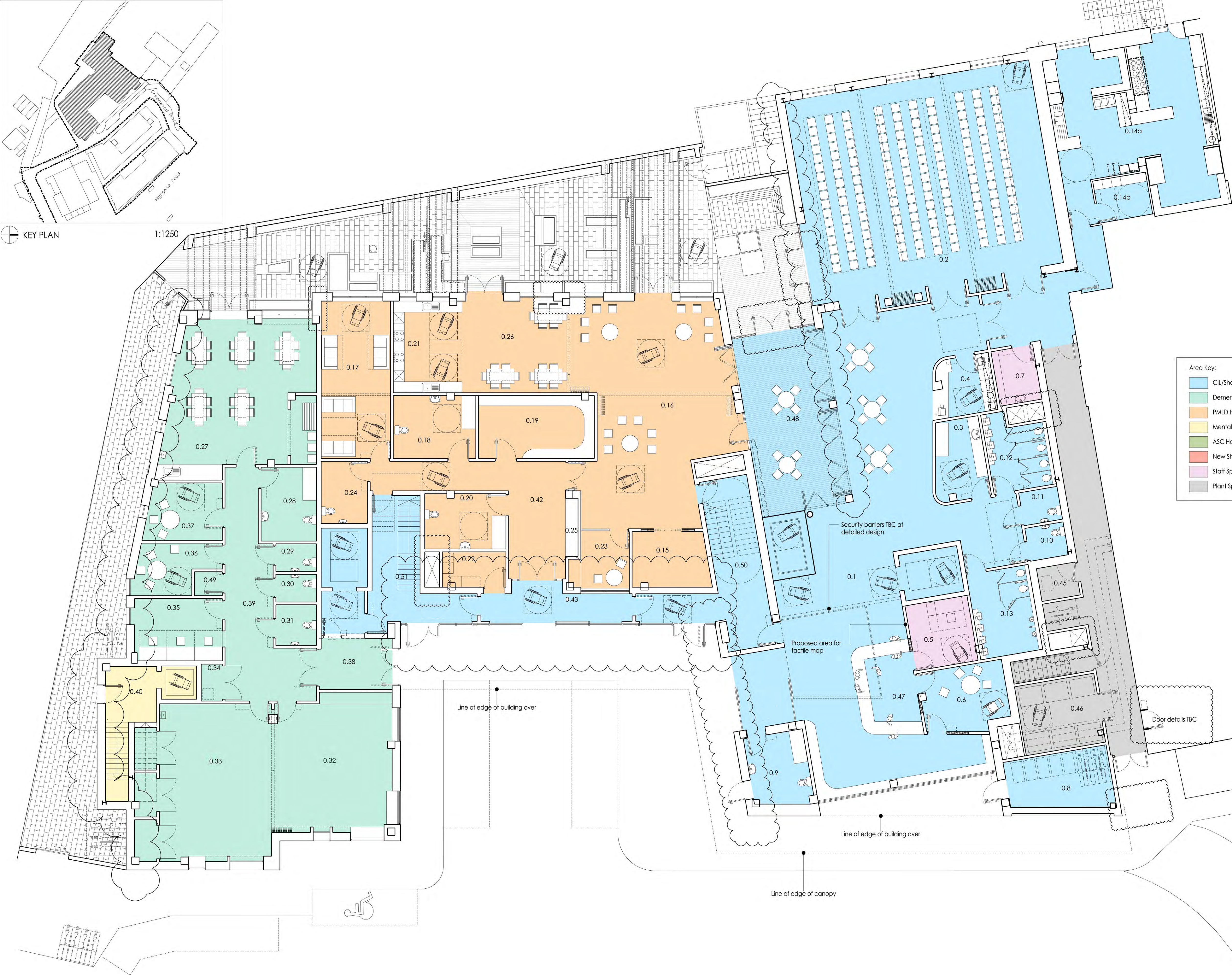
Approximate location of proposed basement

CampbellReith
consulting engineers
LONDON 020 7340 1700 MANCHESTER 0161 819 3060
REDHILL 01737 784 500 BIRMINGHAM 01675 467 484
BRISTOL 0117 916 1066 DUBAI 00 971 4453 4735
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KEY PLAN

1:1250



Area Key:

- CIL/Shared Space
- Dementia Home Space
- PMLD Home Space
- Mental Health Home Space
- ASC Home Space
- New Shoots Home Space
- Staff Space
- Plant Space

GENERAL NOTES

FIGURED DIMENSIONS ARE GIVEN TO STRUCTURE UNLESS INDICATED OTHERWISE.

ALL DIMENSIONS TO BE CHECKED ON THE PRIOR TO COMMENCEMENT OF WORK.

DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER ARCHITECTS DRAWINGS, CONSULTANTS AND SPECIALIST SERVICES, CONSTRUCTION WORK, SPECIFICATIONS AND SUPPLIERS REQUIREMENTS WHERE APPLICABLE.

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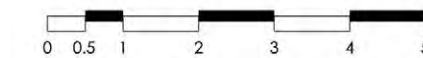
WHERE METHODS OF CONSTRUCTION INCORPORATE THROUGHOUT GAUGE STEEL FRAME ALL ELEMENTS OF FRAME INCLUDING STEEL LOCATIONS, NOGGIN, SPEAKING, LINTLS, TRUSSES AND WIND BRACING TO BE TO FRAME MANUFACTURER'S DESIGN, DETAIL AND SPECIFICATION.

ALL STRUCTURAL ELEMENTS ARE SHOWN INDICATIVELY. FOR ALL ELEMENTS OF STRUCTURE REFER TO STRUCTURAL ENGINEER AND SPECIALIST SUB-CONTRACTOR FOR CONSTRUCTION, DETAIL AND SPECIFICATION.

ALL MECHANICAL AND ELECTRICAL ELEMENTS ARE SHOWN INDICATIVELY. FOR ALL INSTALLATIONS REFER TO BUILDING SERVICES ENGINEERS AND SPECIALIST SUB-CONTRACTORS DESIGN, DETAIL AND SPECIFICATION.

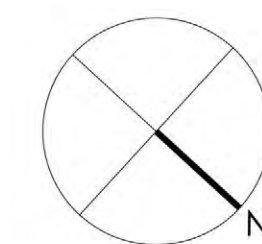
LEGEND:

- 0.1. CIL Foyer
- 0.2. Multipurpose Room
- 0.3. First Aid Room
- 0.4. Kiosk
- 0.5. Office
- 0.6. Meeting Room
- 0.7. Cleaners Cupboard
- 0.8. Wheelchair/Prism Store
- 0.9. Changing Places WC
- 0.10. Accessible WC provision
- 0.11. Accessible WC provision
- 0.12. Male WC provision
- 0.13. Female WC provision
- 0.14.
- a. Kitchen
- b. Kitchen Staff Changing
- 0.15. PMLD Storage
- 0.16. PMLD Common/Day Room
- 0.17. PMLD Activity Room
- 0.18. PMLD Changing Places
- 0.19. PMLD Sensory Room
- 0.20. PMLD Changing Places WC
- 0.21. PMLD Kitchen
- 0.22. Laundry
- 0.23. PMLD Meeting Room/Quiet Room
- 0.24. PMLD Accessible WC Provision
- 0.25. PMLD Coats/Lockers
- 0.26. PMLD Dining
- 0.27. Dementia Dining Room
- 0.28. Dementia Changing Places WC
- 0.29. Dementia Accessible WC Provision
- 0.30. Dementia Accessible WC Provision
- 0.31. Dementia Accessible WC Provision
- 0.32. Dementia Common/Day Room
- 0.33. Dementia Common/Day Room
- 0.34. Dementia Storage/Domestic w/machine
- 0.35. Dementia Office
- 0.36. Dementia Meeting Room
- 0.37. Dementia Meeting Room
- 0.38. Dementia Main Entrance/Access Lift
- 0.39. Dementia Lobby
- 0.40. Mental Health Entrance
- 0.42. PMLD Entrance Lobby
- 0.43. Glazed Access Link
- 0.44. Riser Cupboard/Storage
- 0.45. Chemical Store
- 0.46. Bin Store
- 0.47. Reception Desk
- 0.48. Lightwell
- 0.49. Dementia Store
- 0.50. Stair Core
- 0.51. Stair Core



Entrance-Group Space

Public Entrance-CIL



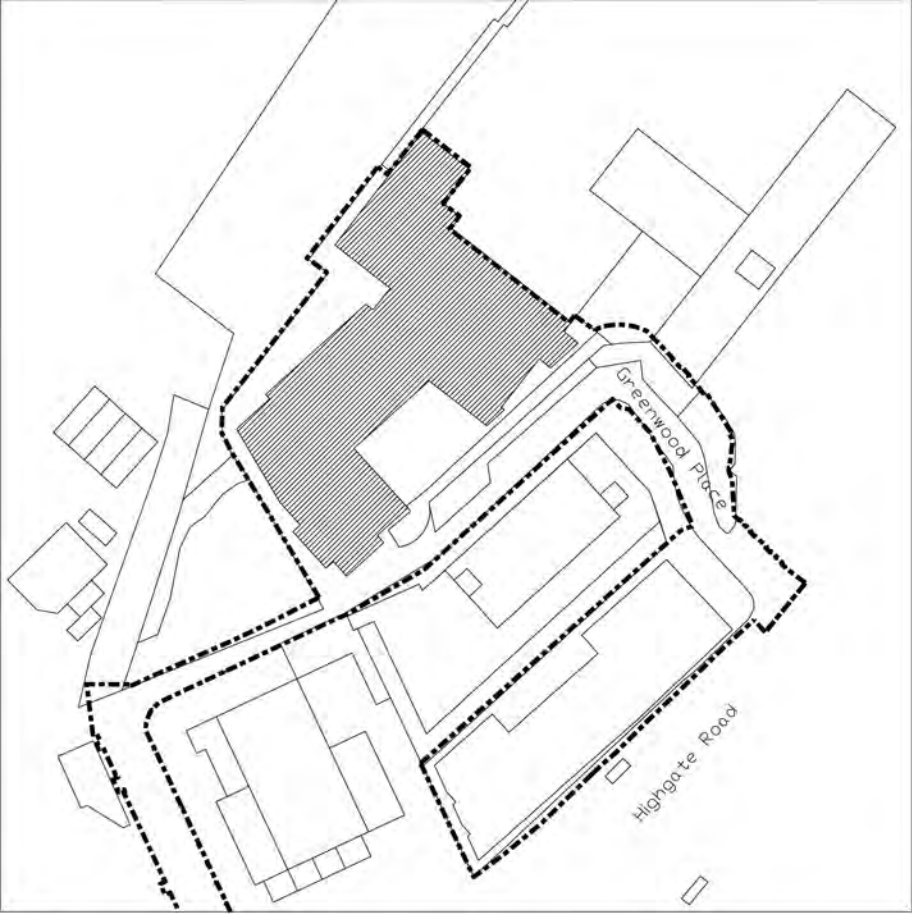
DATE	REV.	DESCRIPTION	BY	CHECKED
2013.08	B	General	PH	PW
2013.12	A	Canopy line to Cycle Store adjacent to Mental Health Entrance. 4 No. Cycles added to Buggy Store. Sheffield Stands added to Bike Store.	TM	PW

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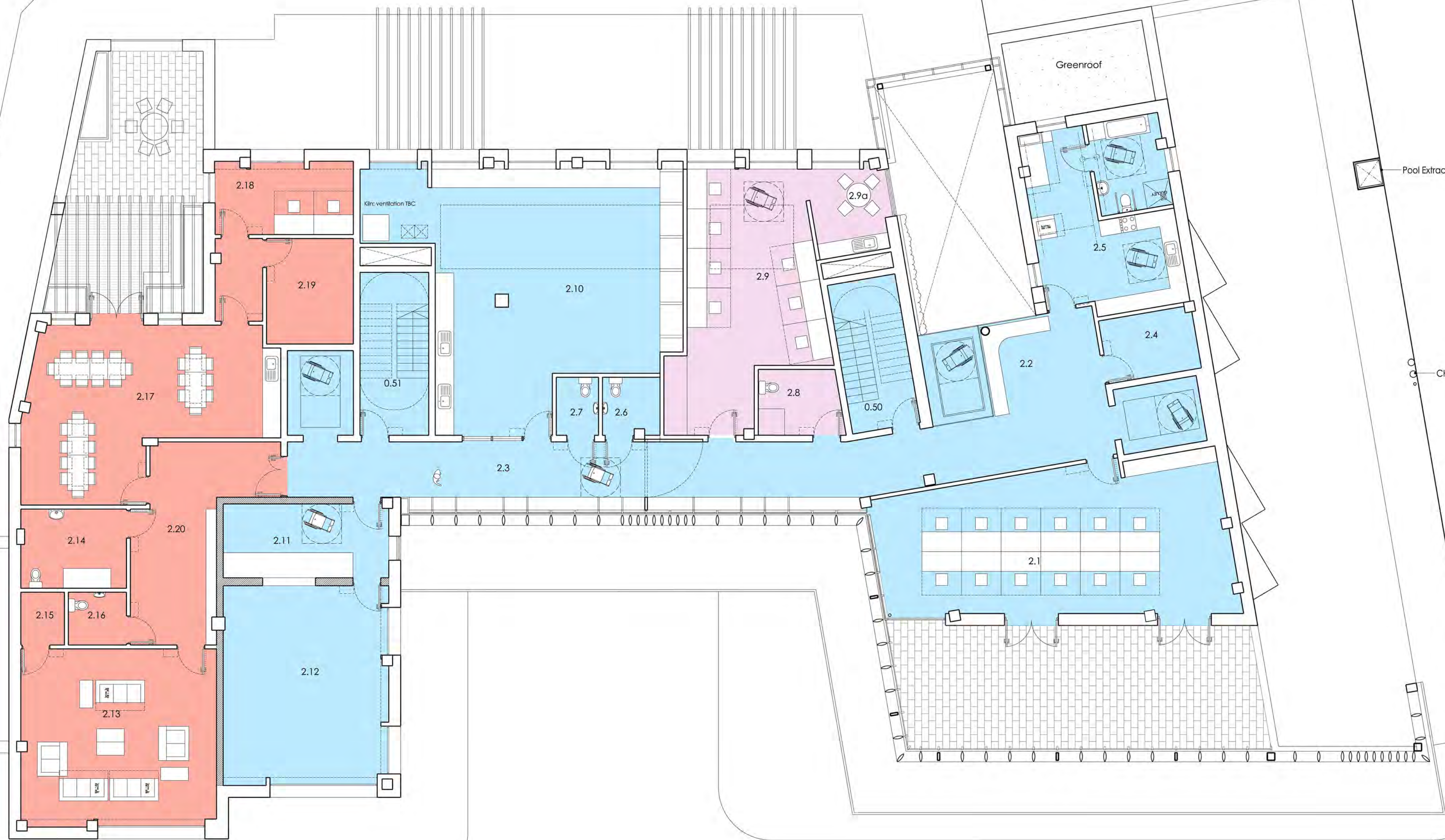
CLIENT	LB Camden
PROJECT	Greenwood Place
DRAWING TITLE	Ground Floor Plan Greenwood Centre
STATUS	SKETCH
SCALE: 1:100@A1 1:200@A3	DRAWN BY: TM
DATE: 2013.08	CHECKED BY: PH
DRAWING NO.	REVISION
SK 160	A





KEY PLAN

1:1250



Area Key:

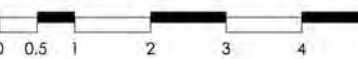
- CIL/Shared Space
- Dementia Home Space
- PMLD Home Space
- Mental Health Home Space
- ASC Home Space
- New Shoots Home Space
- Staff Space
- Plant Space

GENERAL NOTES

PROVIDE DIMENSIONS ARE TAKEN TO STRUCTURE UNLESS INDICATED OTHERWISE.
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DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER ARCHITECT'S DRAWINGS, CONSULTANTS AND SPECIALIST DRAWINGS, CONSTRUCTION NOTES, SPECIFICATIONS AND EMPLOYER REQUIREMENTS WHERE APPLICABLE.
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LEGEND:

- 2.1. IT Room
- 2.2. Waiting Area/Breakout Space
- 2.3. Access Gallery
- 2.4. Store
- 2.5. Demonstration Flat
- 2.6. Accessible WC
- 2.7. Accessible WC
- 2.8. Staff Shower / WC
- 2.9. Office
- 2.9a. Kitchen
- 2.10. Art Room
- 2.11. Music Studio
- 2.12. Music Room
- 2.13. New Shoots Space
- 2.14. New Shoots Changing Places WC
- 2.15. New Shoots Store
- 2.16. New Shoots Accessible WC
- 2.17. New Shoots Space
- 2.18. New Shoots Office
- 2.19. Sensory Room
- 2.20. New Shoots Entrance
- 0.50. Stair Core
- 0.51. Stair Core

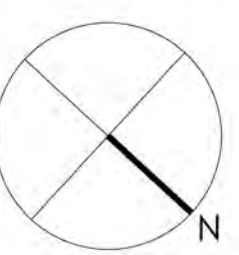


Entrance-Group Space

Public Entrance-CIL

Partition system (refer to data sheets)

Very high level of acoustic separation, requirements TBC by acoustician.



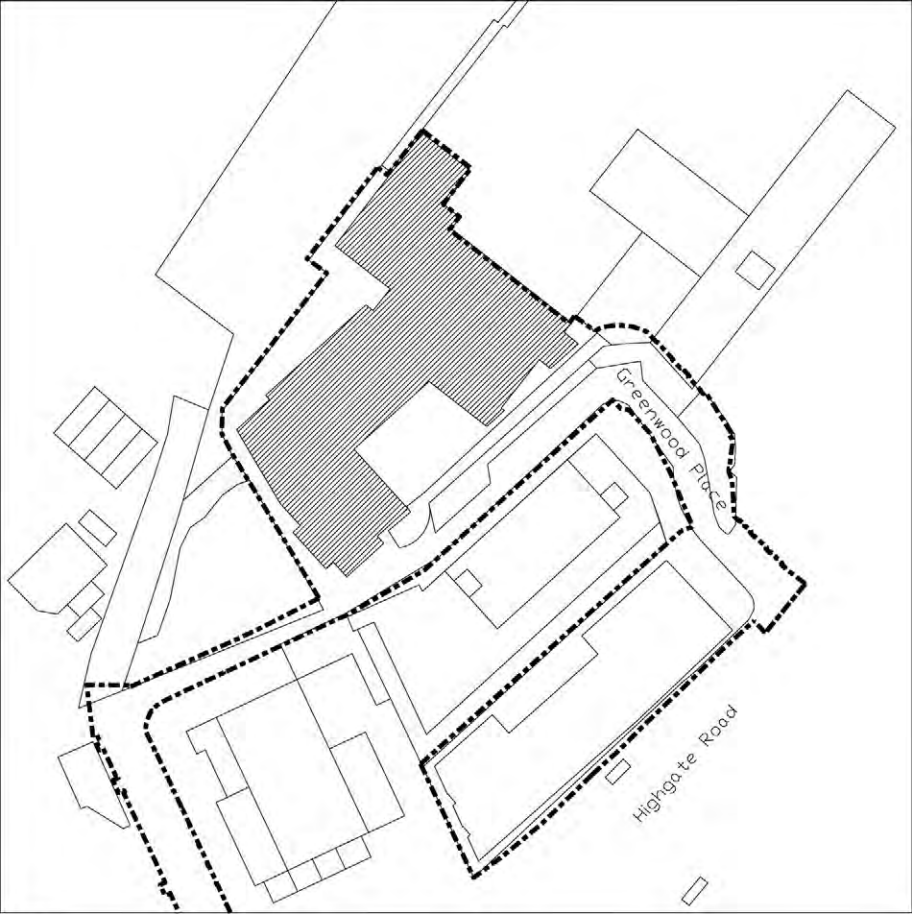
20150504	A	General Amendments	PH	PH
DATE	REV	DESCRIPTION	BY	CHECKED



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CLIENT	LB Camden
PROJECT	Greenwood Place
DRAWING TITLE	Second Floor Plan Greenwood Centre
STATUS	COMMENT
SCALE: 1:100@A1 1:200@A3	DRAWN BY TM
DATE 2012.08	CHECKED BY PH
DRAWING NO. SK 162	REVISION A



KEY PLAN

1:1250

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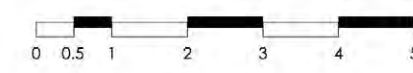
ALL MECHANICAL AND ELECTRICAL ELEMENTS ARE SHOWN INDICATIVELY FOR ALL ELEMENTS OF MECHANICAL AND ELECTRICAL REFER TO BUILDING SERVICES ENGINEER AND SPECIALIST SUB CONTRACTOR FOR DESIGN, DETAIL AND SPECIFICATION.

LEGEND:

- 3.0. Garden Area
- 3.1. Photovoltaics
- 3.2. Storage areas
- 0.50. Stair Core
- 0.51. Stair Core

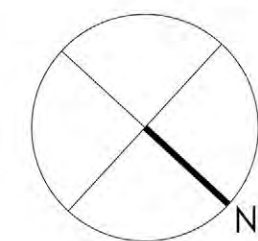
Area Key:

- CIL/Shared Space
- Dementia Home Space
- PMLD Home Space
- Mental Health Home Space
- ASC Home Space
- New Shoots Home Space
- Staff Space
- Plant Space



Entrance

Indicative extent of PV (including glass integrated)



DATE	REV	DESCRIPTION	BY	CHECKED
2015.08	A	general	PH	PH

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CLIENT	LB Camden
PROJECT	Greenwood Place
DRAWING TITLE	Roof Plan Greenwood Centre
STATUS	PLANNING
SCALE: 1:100@A1 1:200@A3	DRAWN BY TM
DATE 2013.08	CHECKED BY PH
DRAWING NO. SK 163	REVISION A

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