The Hope Lease Limited

The Hope Project

Basement Impact Assessment

371475-02 (04)

OCTOBER 2017

RSK GENERAL NOTES

Report No.: 371475-02 (04)

Title: Basement Impact Assessment for The Hope Project

Client: The Hope Lease Limited

Date: 26th October 2017

Office: RSK, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT, tel:+44 01442 437500, contact: Claire Siberry

Status: Final

Project Manager	Claire Siberry MSci FGS Senior Geotechnical Engineer	
Reviewed and Approved by	Shon Williams BSc PhD CEng MICE Director of Geotechnics	
Reviewed and Approved by	Matt Cheeseman BSc MSc MCIWEM Principal Hydrologist	
Reviewed and Approved by	Vivien Dent BSc MSc CGeol FGS Associate Technical Director - Hydrogeologist	

CONTENTS

TABLES

FIGURES

APPENDICES

NON-TECHNICAL SUMMARY

NON-TECHNICAL SUMMARY	
Site description	The site is located in Camden, London, NW1 7JE, at National Grid reference 529242, 183411. The site is occupied by Koko nightclub (formerly Camden Palace and Camden Hippodrome), the Hope and Anchor Pub and 1 Bayham Street and 64 Bayham Place. The site is bounded to the north by Bayham Place and Nos 2-4 Camden High Street, to the east by Bayham Street, Crowndale Road to the south, and Mornington Crescent LUL station to the west, with the Northern Line passing beneath Camden High Street into Eversholt Street.
Proposed development	Full planning and listed building consent is sought for the: “Demolition of 65 Bayham Place, 1 Bayham Street (retention of façade) and rebuilding to provide private members club (sui generis) with extension to the rear and basement; retention and refurbishment of the ground floor of the Hope & Anchor Public House (Use Class A4) with 1st/2nd floor internal demolition and replacement to provide restaurant and bar, minor reconfiguration to circulation space within KOKO. Use of the Flytower by the private members club with retention of original theatre equipment. Installation of fourth floor extension to provide amenity space with terrace restaurant and bar. The proposals also include for the conversion of the KOKO dome to a private bar and general refurbishment and restoration to the building, along with the installation new plant”.
Ground / Groundwater conditions	Made Ground was encountered across the site, ranging in thickness from 0.18m to 2.12m and typically comprised sandy gravelly clay with occasional brick, clinker, ash and slate, pottery, concrete and wood. The London Clay Formation was encountered beneath the Made Ground, extending to a depth of 25.40m (-2.65m AOD). The London Clay was initially encountered as firm to stiff, brown mottled grey silty clay (weathered) to depths of between 2.60m and 7.80m (14.95m to 15.05m AOD), becoming stiff to very stiff high to extremely high strength dark grey fissured silty clay, locally sandy, with depth. Hard ‘claystone’ bands were encountered locally within the London Clay. The Lambeth Group was encountered below the London Clay and extended to the full depth of the investigation of 30.00m (-7.25m AOD). The Lambeth Group comprised very stiff very high strength fissured yellowish brown, blue-grey and dark red mottled clay Observations made during the site works and the results of a groundwater monitoring programme reveal the presence of perched water within the Made Ground and shallow London Clay around foundations, and localised very slow seepages at depth within the London Clay, the latter being associated with the presence of perched water on ‘claystone’ bands.

Screening and scoping	**Subterranean (ground water):** No potential impacts identified beyond the scoping stage **Surface flow and flooding:** No potential impacts identified beyond the scoping stage **Land stability:** Potential impacts identified relate to ground movements associated with: • Shrink-swell of clay soils - no impact identified beyond the scoping stage; • Retaining wall installation and ground excavation; • Heave of the London Clay in the basement excavation; and • Site lies within LUL exclusion zone to Mornington Crescent Station.
Impact Assessment	The following nearby structures were identified as being potentially at risk from damaging ground movements: • The adjacent highways of Bayham Place and Bayham Street to the north/east • Building No's 2-4 Camden High Street, No's 48-56 Bayham Place and No 3 Bayham Street • Mornington Crescent LUL station and tunnels to the west of the site **Highway/Pedestrian Right of Way Assessment** The assessment predicts a maximum of 9mm of horizontal movement to the immediate east of the site along Bayham and 3mm to the immediate north of the site along Bayham Place, and maximum vertical movements of 1mm settlement during basement construction. It is considered the impact of such these relatively small ground movements on the adjacent highways is likely to be negligible. **Building Damage Category Assessment** The results of the assessment demonstrate that all of the adjacent properties fall into 'Category 0' defined as 'Negligible Damage'. The results therefore fulfil the requirements of CPG4 in that they do not exceed the damage category of 'slight' (Category 2). **LUL Asset Assessment** The assessment predicts ground movements at the tunnel crown are less than +/-1mm and the impact of such small ground movements are considered to be negligible.

1 INTRODUCTION

1.1 Instructions

On the instructions of Heyne Tillett Steel, on behalf of The Hope Lease Ltd (the 'Client'), RSK Environment Limited (RSK) have produced a Basement Impact Assessment for a proposed development known as The Hope Project, comprising land at Koko, The Hope and Anchor Pub and the adjacent buildings enclosed by Camden High Street, Crowndale Road, Bayham Street and Bayham Place. The site is located within the Regent's Park Ward of the London Borough of Camden.

1.2 Regulatory Context

This assessment is designed to be compliant with guidance provided by the London Borough of Camden (Camden) in their guidance document 'Camden Planning Guidance for Basements and Lightwells, CPG4' (amended July 2015) and its supporting study 'Camden Geological, Hydrogeological and Hydrological Study' produced for Camden by ARUP in November 2010. All the technical analysis and recommendations contained within the planning guidance are taken from this latter study, which is treated as the evidence base and technical advice when Camden is assessing Basement Impact Assessments.

This guidance applies to all developments in Camden that propose a new basement development, or an extension to existing basement accommodation where planning permission is required. In accordance with Camden's new Local Plan 2017 (Policy A5), Camden will only permit basement and other underground development where it can be demonstrated that it will not cause harm to the built and natural environment, including to the local water environment and ground conditions.

Addressing these issues requires the submission of a Basement Impact Assessment (BIA). A BIA will be specific to a particular site and proposed development, but includes the following stages:

- *Screening*; the identification of any matters of concern with regard to hydrogeology, hydrology or ground stability, which should be investigated.
- *Scoping*; production of a statement that defines further the matters of concern identified at the screening stage.
- *Site Investigation and Study*; undertaken to establish the baseline conditions. This can be done by utilising existing information and/or collecting new information.
- *Impact Assessment*; undertaken to determine the impact of the proposed basement on the baseline conditions, taking into account any mitigation measures proposed.
- *Review and Decision-Making*; this final stage is undertaken by Camden and consists of an audit of the information supplied and a decision on the acceptability of the impacts of the basement proposal.

The purpose of the BIA is to enable Camden Council to assess whether any predicted damage to neighbouring properties and the water environment is acceptable or can be satisfactorily ameliorated by the developer by preparing a Basement Construction Plan.

1.3 Background

By way of background to the current project, a desk study and intrusive site investigation have been undertaken at the site by RSK, as detailed in the report 'The Hope Project Geoenvironmental Site Assessment Report', reference no. 371475-01 (05), dated October 2017. The current assessment draws on the results of that report. For full details reference should be made to the original report.

1.4 Standards and Limitations

This report is subject to the RSK service constraints given in Appendix A.

This report is based on information available at the time of writing. This report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory at the time. There may be conditions pertaining to the site that have not been previously disclosed by the investigation and therefore could not be taken into account. In addition, groundwater levels may vary from those reported due to seasonal, or other, effects.

2 SITE DETAILS

2.1 Site Description

The site is located in Camden, London, NW1 7JE, at National Grid reference 529242, 183411, as shown on Figure 1. The site is occupied by Koko nightclub (formerly Camden Palace and Camden Hippodrome), the Hope and Anchor Pub, and the adjacent buildings enclosed by Camden High Street, Crowndale Road, Bayham Street and Bayham Place.

The area around the site is predominantly occupied by a mix of commercial and residential development with Regents Park and the London Zoo approximately 645m to the west of the site. The site is bounded to the north by Bayham Place and Nos 2-4 Camden High Street, to the east by Bayham Street, Crowndale Road to the south, and Mornington Crescent LUL station to the west, with the Northern Line passing beneath Camden High Street into Eversholt Street.

The site is a roughly rectangular shaped plot of land and covers approximately 0.16 hectares at an elevation of approximately 22.80m above Ordnance Datum (AOD), covered by hardstanding in its entirety. The elevation of the pavement along Crowndale Road falls from 23.5m AOD in the west to 22.5m AOD in the east, with an overall gentle slope down towards the northeast of the site.

The Grade II listed Koko (nightclub) occupies the western half of the site and comprises 5 storeys with a roof terrace, lower ground floor levels and basement, the latter of which is used for storage. Lower ground floor level is at an elevation of approximately 19.40m AOD and the basement occupies the central portion of the club at an elevation of approximately 17.65m AOD. The northern/northeastern boundary of Koko shares a party wall with Nos 2-4 Camden High Street.

The Hope and Anchor pub is situated on the southeastern corner of the site on the corner of Bayham Street and Crowndale Road, and comprises one to three storeys with a cellar.

The Bayham Street property is on the northeastern corner of the site on the corner of Bayham Place and Bayham Street. The property is two to three storeys in height with a mansard roof and comprises No 1 Bayham Street and No 65 Bayham Place.

A small courtyard is present within the Hope and Anchor pub and abuts onto Koko.

Anecdotal evidence suggests that the site has had a long history of problems associated with water entries in the basement such that a series of connected sump chambers have been installed to accommodate the water, and is regularly pumped out of the final chamber.

In addition, a blocked sewer in April 2016 within the Hope and Anchor bounds caused the sewer to fail and water to seep through the walls of the party wall shared with Koko and flood the basement. Further visits to Koko revealed further flooding events within the basement and suggest that historical problems with water ingress into the basement may be associated with leakages within the existing building drainage system.

It is understood that the Mornington Crescent station is approximately 10m west of the site at the junction of Camden High Street, Crowndale Road and Hampstead Road. The Northern Line tunnels run in a north-south orientation with the crowns understood to be at elevations of circa 12 to 13m AOD.

The current site layout is shown in Figure 2.

A search of publicly available planning records (from 1926 to 2016) on Camden's planning website revealed:

- a number of planning permissions for minor alterations to Koko/Camden Palace/Camden Hippodrome.
- a number of applications pertaining to No 1 Bayham Street and No 65 Bayham Place, concerning the use of the properties as an office and minor alterations and additional storeys.
- an application in 1965 pertaining to the Hope and Anchor pub, concerning the rebuilding of the ground floor extension at the rear of the Hope and Anchor Public House (conditional).
- an application in 2001 pertaining to the Hope and Anchor pub, concerning the erection of a 4-storey side extension to provide a single family house (refused).
- a number of applications pertaining to Nos 3, 5, and 7 Bayham Street, concerning change of use and erection of rear extensions, including basements / lower ground floor levels at each property.
- an application in 1979 pertaining to Nos 2-6 Camden High Street, concerning the construction of an entrance hall within the existing building (granted)
- an application in 2015 pertaining to Nos 48-56 Bayham Place concerning the change of use from office to residential comprising 25 studio flats at ground, 1st and 2nd floor level (no basement) (granted).
- Most recently, Nos 48-56 Bayham Place have been subject to a number of applications seeking a change of use from office to residential (PEX0200987). Whilst the full applications were refused on a number of grounds, planning consent was eventually granted via permitted development rights for a change from office to residential (2013/7177/P, 2014/6652/P, 2015, 2021/P and 2015/4598/P). A number of schemes were submitted, but it is understood that a scheme for 13 studio apartments has been built out (2015/4598/P). This has been supplemented by a recent planning approval for two small side and rear extensions at first and second floor level. The application was approved on the 4th October 2016.

2.2 Proposed Development

The site in question is being considered for redevelopment as a new private members club (sui generis), roof terraces and a restaurant and bar venue. The full proposal description is:

Full planning and listed building consent is sought for the:

"Demolition of 65 Bayham Place, 1 Bayham Street (retention of façade) and rebuilding to provide private members club (sui generis) with extension to the rear and basement; retention and refurbishment of the ground floor of the Hope & Anchor Public House (Use Class A4) with 1st/2nd floor internal demolition and replacement to provide restaurant and bar, minor reconfiguration to circulation space within KOKO. Use of the Flytower by the private members club with retention of original theatre equipment. Installation of fourth floor extension to provide amenity space with terrace restaurant and bar. The proposals also include for the conversion of the KOKO dome to a private bar and general refurbishment and restoration to the building, along with the installation of new plant".

The proposed redevelopment will involve the retention of Koko and the part of the facade to the middle buildings on the Bayham Street frontage, and redevelopment of the surrounding site to provide new complementary facilities, linking to the existing venue. The existing buildings at 1 Bayham Street and 65 Bayham Place (herein called the Bayham Street property) and the upper floors of the Hope and Anchor pub, will be demolished and replaced by a new building with four storeys above ground, housing the private members club and dining rooms. The facade to the Hope and Anchor pub will be retained. Development of the Grade II listed Koko club will include a number of new roof extensions, predominantly on the northern side of the building on Bayham Place. Copies of the proposed development plans are presented in Appendix B.

A new core will be constructed to provide stability to the development, envisaged to be constructed from reinforced concrete frame supported on new piled foundations. New loads from the roof top extensions will be supported on piles. The existing buildings will also be refurbished with some internal walls removed.

A new lift core will extend through the southwest corner of the existing Bayham Street property and the courtyard behind the Hope and Anchor pub, down to existing basement level in Koko at 17.65m AOD, with a central lift pit extending a further 1.40m.

It is anticipated that the new basement will be constructed in part by secant piled walls and part underpinning of existing foundations. Column loads will be supported on cantilevered pile caps, using a combination of compression and tension piles to transmit the loads.

Proposed development plans and sections are shown in Appendix A.

2.3 Ground / Groundwater Conditions

2.3.1 British Geological Survey Data

The published 1:50,000 scale (Sheet No. 256 'North London') and 1:10 000 scale (Sheet TQ38SW) geological maps of the area indicate that the site is underlain directly by "Worked Ground" over the London Clay Formation.

The map data indicates that the base of the London Clay lies at an elevation between approximately –5mAOD and –10mAOD (i.e. the London Clay may only be of the order of 30m thick) in the site area. The London Clay is indicated to be underlain by the Lambeth Group, which comprises mottled clays with interbedded sand and pebble beds, and attains a maximum thickness of 15m.

There is a single published British Geological Survey (BGS) borehole log available for the immediate site area, at Mornington Crescent LUL Station, which indicates London Clay is present beneath a moderate thickness of made ground. In addition, a number of boreholes located within approximately 250m of the site indicate that the general site area is underlain by a nominal thickness of Made Ground, with the underlying London Clay being approximately 27m thick; the base of the London Clay is indicated to lie at an elevation of approximately -2.13mAOD. Where penetrated, the upper part of the Lambeth Group is described as mottled clay (probable Upper Mottled Clay of the Reading Formation), and extended to -20.72m AOD.

The BGS records indicate a groundwater table in the order of 22.50m below ground level, with seepages of groundwater within the London Clay typically associated with bands of claystone.

2.3.2 Site Specific Intrusive Investigation Data

A full site investigation was undertaken at the site by RSK in June/July 2016, as detailed in the report 'The Hope Project, Geoenvironmental Site Assessment Report', report no. 371475-01 (04), dated October 2017. The current assessment draws on the results of that report. For full details, reference should be made to the original report.

Made Ground was encountered across the site, ranging in thickness from 0.18m to 2.12m. In general, the Made Ground comprised cohesive sandy gravelly clay, locally containing abundant reworked weathered London Clay and horizons of very gravelly sand / sandy gravel with high cobble content, and with occasional brick, clinker, ash and slate, pottery, concrete and wood. No evidence of extensive deposits of 'Worked Ground' was recorded by the investigation.

The London Clay Formation was encountered beneath the Made Ground, extending to a depth of 25.40m (-2.65m AOD). The London Clay was initially encountered as firm to stiff, brown mottled grey silty clay (weathered) to depths of between 2.60m and 7.80m (14.95m to 15.05m AOD), becoming stiff to very stiff high to extremely high strength dark grey fissured silty clay, locally sandy, with depth. The silty clay was locally thinly laminated and contained occasional partings and laminae of coarse silt/very fine sand. Hard 'claystone' bands were encountered at 11.80m bgl (10.95m AOD) and 12.80m bgl (9.95m AOD) in BH1, and 1.25m (18.15m AOD) and 3.60m (15.80m AOD) in WS1. The basal 0.40m in BH1 (below -2.25m AOD) was sandy and glauconitic, indicating the presence of the Swanscombe Member of the Harwich Formation.

The Lambeth Group was encountered below the London Clay and extended to the full depth of the investigation of 30.00m (-7.25m AOD). The Lambeth Group comprised very stiff very high strength fissured yellowish brown, blue-grey and dark red mottled clay

Observations made during the site works and the results of a groundwater monitoring programme reveal the presence of perched water seepages within the Made Ground and shallow London Clay around foundations, and localised very slow seepages at depth within the London Clay, the latter being associated with the presence of perched water on 'claystone' bands.

The locations of the RSK boreholes and trial pits are shown on Figure 2.

3 STAGE 1 - SCREENING

This section of the report provides information for the purpose of screening in accordance with CPG4 and addresses all questions raised within the relevant sections of that document. Tables summarising the screening flowcharts are shown as Tables 1 to 3. In accordance with procedure, where a ‘yes’ or ‘unknown’ response is returned, the potential issue is taken to the scoping stage in Section 4.

Table 1: Subterranean (ground water) screening

Question		Answer	Evidence/Comment
1	Is the site located directly above an aquifer?	No	The site is underlain by 0.18m to 2.12m of Made Ground and approximately 24m of the London Clay Formation and 4.6m of cohesive Lambeth Group. The London Clay is classified as non-productive strata. p.19 of the ARUP guidance document (ref: 213923) which supports CPG4, ARUP states: *"Although groundwater is contained within the microscopic pores of the clayey strata of the London Clay, it permeates so slowly, due to the narrow pores, that in practice it is generally considered a barrier to groundwater".* Therefore, the site does not lie directly above an aquifer.
1a	Will the proposed basement extend beneath the water table surface?	No	Perched water has been encountered locally within the Made Ground and shallow London Clay around foundations and during monitoring at an elevation of approximately 18.50m AOD. However, some trial pits remained dry during excavation and published boreholes within the surrounding area do not record a shallow groundwater table, which indicates that any shallow water beneath the site is localised and perched. This does not constitute a water table. Within a few metres of the ground surface the London Clay can be assumed to be saturated i.e. all available pore space within the clay filled will water. Porosity within this material is so low as to not maintain significant volumes of water and to be 'unproductive'. In this case water recorded within the London Clay records pore water pressure and the concept of a 'groundwater table' does not really apply. Therefore the proposed basement with not penetrate any water tables that might affect groundwater levels or flows.
2	Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	No	The nearest watercourse, well or potential spring line is 540m to the northeast of the site (Regent's Canal). Therefore, the site is not within 100m of such features.

Question		Answer	Evidence/Comment
3	Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site lies 3km southeast of the nearest Hampstead Heath drainage catchment and will therefore not impact any catchments.
4	Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No	The site is covered in its entirety by buildings and areas of hardstanding and remains unchanged in the proposed development plans.
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 SUDS)?	No	There are no SUDS/soakaway schemes proposed for the site that would increase discharge to the ground.
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	There are no surface water features in the vicinity of the site, the nearest is Regent's Canal 540m to the northeast of the site.

Table 2: Surface flow and flooding screening

Question		Answer	Evidence/Comment
1	Is the site within the catchment of the pond chains on Hampstead Heath?	No	The site lies 3km southeast of the nearest Hampstead Heath drainage catchment and will therefore not impact any catchments.
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 ground conditions at the site (moderate thickness of Made Ground and impermeable London Clay) are not suitable for the use of SUDS/soakaways. The site is currently hardstanding or building covered and all drainage is conveyed to the existing sewer system. Therefore, surface water flow routes will not be materially changed.
3	Will the proposed basement development result in a change in the proportion of hard surfaced / paved external	No	The site is covered in its entirety by buildings and areas of hardstanding. The

Question		Answer	Evidence/Comment
	areas?		proposed development will cover the entire site with buildings.
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 watercourses?	No	The ground conditions at the site (moderate thickness of Made Ground and impermeable London Clay) are not suitable for the use of SUDS/soakaways. The site is currently hardstanding or building covered and all drainage is conveyed to the existing sewer system. Therefore, surface water flow routes will not be materially changed. There will be no change to the profile of inflows of surface water and there are no nearby watercourses that could be affected.
5	Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	The ground conditions at the site (moderate thickness of Made Ground and impermeable London Clay) are not suitable for the use of SUDS/soakaways. The site is currently hardstanding or building covered and all drainage is conveyed to the existing sewer system. Therefore, surface water flow routes will not be materially changed. There will be no change to the profile of inflows and there are no nearby watercourses that could be affected.
6	Is the site in an area known to be at risk from surface water flooding, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?	No	Reference to the EA floodplain maps, North London Strategic Flood Assessment and The London Borough of Camden flood risk management strategy shows that the site does not lie within any known flood zones. BGS information indicates that the site does not lie within 50m of a groundwater flooding susceptibility area. The highest susceptibility to groundwater flooding, based on the underlying geological conditions, is indicated to be 'not prone'. There are no surface water features in the vicinity of the site that would pose a flood risk. Anecdotal evidence suggests that the site has suffered historical problems with water ingress into the basement, but it is considered likely these issues relate to leakages in the existing drainage on site/surrounding area and is not related to wider surface flow/flooding issues.

Table 3: Land Stability Screening

Question	Answer	Evidence/Comment
Does the existing site include slopes, natural or manmade, greater than 7°?	No	The site is essentially level, with a very gentle slope downwards of <1% towards the northeast. Observations made at the site have not revealed any issues associated with the stability of slopes.
Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No	The site will be underlain in the majority by the basement and no re-grading of the site is proposed.
Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	No	The surrounding area is essentially level.
Is the site within a wider hillside setting in which the general slope is greater than 7°?	No	Reference to the site plans, ordnance survey mapping and the slope angle map produced as figure 16 of the ARUP report indicates that slope angles in the site vicinity are less than 7°. The 1:50,000 scale geological map for the area indicates that the site does not lie within an 'Area of Significant Landslide Potential'. The BGS landslide potential map is reproduced as figure 17 of the ARUP report.
Is the London Clay the shallowest stratum at the site?	Yes	See Section 4 (Scoping)
Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained?	No	There are no soft landscaped areas or trees present on site and none are proposed. Two small trees are located in the pavement of Crowndale Road adjacent to the existing Koko building, but these are not to be removed as part of the development.
Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	No	There is no evidence of seasonal shrink-swell effects on site. Given that the underlying natural ground is high volume change potential London Clay there is potential for such effects but it is not known whether there are any structures that have been affected in the wider area, and in any case, these would be unrelated to the subject site and proposed development.
Is the site within 100m of a watercourse or a potential spring line?	No	The nearest watercourse, well or potential spring line is 540m to the northeast of the site (Regent's Canal). Therefore, the site is not within 100m of such features.

Question	Answer	Evidence/Comment
Is the site within an area of previously worked ground?	No	The published BGS geological maps of the area indicate that the site is underlain directly by “Worked Ground”. However, a natural ground stability hazard dataset supplied by the BGS and historical and geological mapping (included in the previous RSK desk study and site investigation report) reveal that there are no recorded hazards associated with previously worked ground, landfilling or compressible and collapsible ground at the site that could lead to stability issues. The site investigations undertaken at the site confirm these ground conditions. Although between 0.18m and 2.12m of Made Ground have been recorded on the site, these soils appear to comprise reworked materials associated with previous development of the land and are not considered to present a risk with regard to land stability, particularly as much of this material will be removed as part of the development and the new structure will be supported on piled foundations. In addition, significantly thick deposits of worked ground were not encountered across the site which suggests that the deposits were either removed during a previous phase of construction or were not present.
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	The site is underlain by non-productive strata. Perched water has been encountered locally within the Made Ground and shallow London Clay around foundations and during monitoring at an elevation of approximately 18.50m AOD. However, some trial pits remained dry during excavation and published boreholes within the surrounding area do not record a shallow groundwater table, which indicates that any shallow water beneath the site is localised and perched. This does not constitute a water table. Although seepage of this perched water is likely to require controlling (probably sump pumping) during the temporary works, this water does not constitute ground water with a ‘water table’, and its temporary exclusion from the basement excavation will have no effect on the groundwater regime or ground stability.

Question	Answer	Evidence/Comment
Is the site within 50m of the Hampstead Heath ponds?	No	The site lies 3km southeast of the nearest Hampstead Heath drainage catchment
Is the site within 5m of a highway or pedestrian right of way?	Yes	See Section 4 (Scoping)
Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	Yes	The current building on site and that proposed will be attached to Nos 2-4 Camden High Street at the western end of the development, and immediately adjacent to Mornington Crescent LUL Station to the west. Nos 48-56 Bayham Place and No 3 Bayham Street are considered to be near to the structure on the other side of Bayham Place. It is probable that nearby structures are founded on shallow foundations, with the exception of the LUL station box that will be supported on piles. The boundaries for the remainder of the building are adjacent to highways and widely separated from nearby structures. Notwithstanding the above, potential damaging movements could occur due to basement construction associated with retaining walls and excavation. See Section 4 (Scoping)
Is the site over (or within the exclusion zone of) any tunnels?	Yes	Enquiries have been made in relation to buried services at the site, including consultation with London Underground, whose responses are included as Appendix B. Mornington Crescent LUL station is located approximately 10.0m west of the site at the junction of Camden High Street, Crowndale Road and Hampstead Road. The northern tunnels enter the station from the north under Camden High Street and exits to the south beneath Crowndale Road. It is assumed that the tunnel exclusion zone is 15.0m wide and as such could be affected by the proposed redevelopment of the site.

4 STAGE 2 – SCOPING

As defined in CPG4, the scoping stage is used to identify the potential impacts of the proposed scheme for each of the matters of concern identified in the previous screening stage (i.e. those questions answered with a “yes” or “unknown” response). The sections below present statements that define further the matters of concern identified at the screening stage. The data summarised in Section 2 has been used to develop a conceptual ground model to carry out the scoping stage.

4.1 Subterranean (Ground water) Scoping

No potential impacts were identified as part of the subterranean (groundwater) screening stage.

4.2 Surface Flow and Flooding Scoping

No potential impacts were identified as part of the surface flow and flooding screening stage.

4.3 Land stability Scoping

4.3.1 QUESTION: Is the London Clay the shallowest stratum at the site?

POTENTIAL IMPACT: The London Clay is prone to seasonal shrink-swell (subsidence and heave)

The site is essentially fully occupied with buildings/hardcover with no vegetation/trees on site at present or proposed. The immediate surroundings are also covered by buildings/hard cover and also generally free from any significant vegetation/trees. Notwithstanding this, two small trees are located in the pavement of Crowndale Road adjacent to the existing Koko building, but these are not to be removed as part of the development and foundations to the building are located below basement level and at such a depth as not to be influenced by any seasonal shrinkage/swell movement that could arise from the influence of these trees.

Therefore seasonal shrink-swell effects are not considered to present a significant risk to the development.

4.3.2 Is the site within 5m of a highway or pedestrian right of way?

POTENTIAL IMPACT: Excavation for a basement may result in damage to the road, pavement or any underground services buried in trenches beneath the road or pavement.

Bayham Place, Crowndale Road, Bayham Street and Camden High Street and are located to the immediate north, south, east and west of the site, respectively.

There is the potential for ground movements associated with basement piled wall installation and basement excavation to impact the adjacent highways to Bayham Place and Bayham Street.

An impact assessment addressing this issue is reported in Section 6.

4.3.3 QUESTION: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?

POTENTIAL IMPACT: Excavation for a basement may result in structural damage to neighbouring properties/structures if there is a significant differential depth between adjacent foundations.

It is probable that nearby structures (Nos 2-4 Camden High Street, Nos 48-56 Bayham Place and No 3 Bayham Street) are founded on relatively shallow foundations. As noted above, Koko shares a party wall with Nos 2-4 Camden High Street, whilst the remaining current buildings on site and that proposed, are detached from the remaining nearby structures and do not share any party walls. It should be noted that Nos 48-56 Bayham Place and No 3 Bayham Street are only approximately 6.5m from the site.

Where the site shares a party wall with Nos 2-4 Camden High Street, it is not proposed to lower the existing lower ground floor level; the proposed basement development is located on the eastern half of the site beneath Bayham Street property and The Hope and Anchor pub only.

Notwithstanding the above, potential damaging movements could occur due to basement construction. The identified hazards are associated with ground movements from perimeter retaining wall installation and ground excavation, and swelling of the London Clay in the basement excavation associated with stress release.

An impact assessment addressing this issue is reported in Section 6.

4.3.4 QUESTION: Is the site over (or within the exclusion zone of) any tunnels?

POTENTIAL IMPACT: Increased loading on existing buildings may result in structural damage to neighbouring tunnels and tube stations if there is significant lateral ground movements associated with the increased loading.

Mornington Crescent LUL station is located approximately 10.0m west of the site at the junction of Camden High Street, Crowndale Road and Hampstead Road. The northern line tunnels enter the station from the north under Camden High Street and exits to the south beneath Crowndale Road, as shown in Appendix C. It is assumed that the tunnel exclusion zone is 15.0m wide and as such, could be affected by the proposed redevelopment of the site.

However, the proposed basement construction is located at the opposing end of the site (east), such that it will be outside the limits of the tunnel exclusion zone. Additional loading to the Koko club, which is closer to the LUL infrastructure is anticipated to be towards the middle and north of the site and supported on piles, such that any associated settlement from the additional load on the LUL infrastructure is likely to be minimal.

An impact assessment is reported in Section 6 to confirm the above.

5 STAGE 3 – SITE INVESTIGATION AND STUDY

As previously noted, a full desk study, intrusive site investigation and monitoring programme was undertaken at the site by RSK in June/July 2016, as detailed in the report 'The Hope Project, Geoenvironmental Site Assessment Report', report no. 371475-01 (05), dated October 2017. The investigation was designed to be compliant with the data requirements as set out in Appendix G of 'Camden Geological, Hydrogeological and Hydrological Study' produced for Camden by ARUP in November 2010.

The results of report 371475-01 (05) have been utilised to inform the scoping stage of the BIA and the current assessment draws on the results of that report. For full details, reference should be made to the original report.

6 STAGE 4 - IMPACT ASSESSMENT

This stage is concerned with evaluating the direct and indirect implications of the proposed basement development. It involved describing, quantifying and aggregating the effects of the development on those attributes or features which have been identified in the scoping stage as being potentially affected.

The only potential impacts that have been identified by this assessment relate to ground stability hazards associated with:

- Retaining wall installation and ground excavation;
- Elastic heave of the London Clay in the basement excavation associated with stress release; and
- Elastic and longer term consolidation settlement of the London Clay across the site associated with additional loading on existing and from new buildings.

As part of this assessment the following nearby structures have been identified as being potentially at risk from damaging ground movements:

- Nos 2-4 Camden High Street
- Nos 48-56 Bayham Place
- No 3 Bayham Street
- Highways and public footpaths to Bayham Place and Bayham Street
- Mornington Crescent LUL tube station and tunnels to the west of the site beneath Camden High Street.

6.1 Ground Movement Assessment

The ground movement assessment has been carried out to determine whether the movements resulting from the demolition, piled wall installation, basement excavation and support, and the subsequent structural loading will have any adverse effects on the neighbouring properties or infrastructure.

Ground movements in the vicinity of the basement development of the type proposed at the site arise for a number of reasons including;

- Heave due to removal of load during part-demolition of the existing development;
- Lateral and vertical ground movements due to secant pile walls installation to facilitate the basement excavation for the new lift core and basement;
- Heave due to removal of overburden pressure by the basement excavation beneath the southwest corner of the Bayham Street property;
- Ground settlement due to loading from the new loadings within Koko and new superstructure to the Bayham Street property and Hope and Anchor pub;

The assessment of vertical ground movements (heave and settlement due to unloading and loading construction stages) has been carried out by numerical modelling using OASYS PDISP 19.3, while ground movements (vertical and lateral) resulting from installation of the secant piled walls and subsequent excavation have been obtained by reference to published empirical data within CIRIA C580 using the OASYS XDISP 19.4 software. The results of the analyses for the various stages of construction have been combined to estimate the resultant ground movements. In relation to the latter, it is worth noting at this stage that the magnitude of ground movements depends to a great extent upon the quality of workmanship. As such, large local ground movements may occur where construction problems are encountered. Such movements have not been predicted by this work.

6.1.1 Information on applied loadings

Information on the existing and new building loads has been provided by HTS and is included within Appendix B.

The loading information for the existing building has been used to assess ground movements resulting from the removal of load following demolition of the existing eastern portion of the site; No 1 Bayham Street, No 65 Bayham Place and the Hope and Anchor Public House. In considering the loads from these existing buildings the load applied on both the columns and walls has been spread assuming a 1.0m wide strip footing and 2.0m wide pad footings.

The excavation of the new basement level and lift pit to existing basement level (approximately 17.50m AOD) will result in a reduction in vertical stress at the base of the excavations of approximately 28kN/m^2 to 100kN/m^2 (assuming unit weight of 20kN/m^3).

The SLS column loadings provided for the roof top extensions to Koko and new superstructure to the Bayham Street property are indicated to range from 120kN to 1010kN. Tension piles have been omitted from the assessment. In order to model the transfer of load from the proposed piles to the soil a load spread of 1 in 4 from the vertical has been assumed around the pile perimeter, to a depth of two thirds of the length of the pile. This method has also been adopted for the piled wall that is present within the southwest corner of the Bayham Street property, with the total of the column loads distributed over the length of the wall. The pile lengths were estimated from the preliminary working loads provided in the previous report (ref 371475-01 (04)).

6.1.2 Ground Model

The ground profile and soil parameters adopted for use in the ground movement assessment are summarised in the following sections.

6.1.2.1 Ground Profile

Table 4 below summarises the simplified ground profile assumed for the purposes of the ground movement analysis. As all former and proposed basement excavations will only directly impact the London Clay Formation the properties of the overlying soils will have a limiting influence. A rigid boundary layer has been assumed within the Lambeth

Group at an elevation of -10mAOD below which movement is considered to be negligible.

Table 4: Ground Profile

Material	Top of Stratum (mAOD)	Thickness (m)
Made Ground	22.50	1.00
London Clay Formation	21.50	24.20
Lambeth Group	-2.70	>4.60

6.1.2.2 Soil Parameters

The distribution of Young's modulus and other soil parameters with depth have been based on the results of the site investigations previously undertaken, as detailed in Section 3.0.

A Young's modulus increasing with depth has been assumed for the purpose of this analysis. This has been calculated from the measured shear strength results using the correlation presented by Jamiolkowski, et al, contained within CIRIA Special Publication 27, Settlement of Structures on Clay Soils, 1983.

Jamiolkowski, et al, considered that for undrained soils of a known plasticity and over-consolidation ratio the following correlations with undrained shear strength could be adopted for estimating undrained soil stiffness:

$$E_u = 500\ c_u \text{ (U100 Samples)}$$

In the undrained condition Jamiolkowski recommended using the following equation to derive drained soil stiffness for the London Clay Formation:

$$E' = 0.6\ E_u$$

The resulting distribution of undrained and drained modulus values are presented in Figures 4 and 5.

The soil parameters adopted for the analysis are outlined in Table 5.

Table 5: Soil parameters

Material	Bulk Unit Weight (kN/m^3)	Young's Modulus (kN/m^2)	Young's Modulus – Increase with Depth ($kN/m^2/m$)	Poisson's Ratio
Made Ground – Drained	Not Considered			
London Clay Formation – Undrained	19	30,000	1,700	0.5
London Clay Formation – Drained	19	16,000	2,700	0.2
Lambeth Group – Undrained	19	100,000	0	0.5

Material	Bulk Unit Weight (kN/m^3)	Young's Modulus (kN/m^2)	Young's Modulus – Increase with Depth ($kN/m^2/m$)	Poisson's Ratio
Lambeth Group – Drained	19	60,000	0	0.2

6.1.2.3 Neighbouring Properties

The neighbouring properties include; 2 – 4 Camden High Street to the north west and 48 - 56 Bayham Place and 3 Bayham Street to the north / north east. Information assumed for the neighbouring properties is summarised in Table 6 below and shown on Figure 3.

Table 6: General details on construction/sub-structure to neighbouring properties

Property	Construction/Sub-structure Details	Underside of sub-structure (mAOD)
No 2-4 Camden High Street	Assumed masonry building.	22.50*
No 48-56 Bayham Place	Assumed masonry building.	22.50*
No 3 Bayham Street	Assumed masonry building.	22.50*
Notes: * Conservative assumption in the absence of detailed information		

A summary of the specific dimensions used for the purposes of the ground movement analyses are presented in Table 7.

Table 7: Specific dimensions used for analyses

Adjacent Property	Existing Wall Depth (m)	Existing Excavation Depth (m.bgl)	Proposed Wall Depth (m)	Proposed Excavation Depth (m.bgl)	Approximate Distance to Face of Property (m)	Approximate Length of Property Perpendicular to Basement (m)
No 2-4 Camden High Street	0.00	0.00	0.00	0.00	0.00	11.00
No 48-56 Bayham Place	0.00	0.00	Up to 10.00	Up to 3.20	7.00	23.00
No 3 Bayham Street	0.00	0.00	Up to 10.00	Up to 3.20	7.00	7.50

6.1.3 Method of Analysis

6.1.3.1 Numerical Modelling of Heave/Settlement from applied loadings

The calculations were carried out using the PDISP Version 19.3 computer package supplied by Oasys Ltd. adopting the Boussinesq method of elastic analysis. This

calculates the stresses and strains within the ground due to applied loads and then determines the displacements by integrating the vertical and horizontal strains. This package could not be used to consider the influence of piles, as the increased stiffness at each location could not be incorporated into the model.

The analyses have been undertaken to determine the conditions at key stages in the construction process as detailed in Table 8:

Table 8: Ground movement stages

No.	Construction Stage	Short term/Long term
1	Demolition of existing structure	Undrained – Short term
2	Demolition of existing structure	Drained – Long term
3	New basement excavation	Undrained – Short term
4	New basement excavation	Drained – Long term
5	Loading of new structure	Undrained – Short term
6	Loading of new structure	Drained – Long term

The vertical movements, as well as the vertical stresses, have been calculated at a level of 17.50mAOD.

6.1.3.2 Empirical assessment of ground movements from wall installation and basement excavation

The empirical approach adopted is well described in CIRIA C580 "*Embedded Retaining Walls – Guidance for Economic Design*". This document provides charts of vertical and horizontal ground movements resulting from installation of embedded retaining walls and excavation in front of the walls. These charts have been normalised with wall length and excavation depth to facilitate their use for new development.

The assessment of ground movements associated with basement wall construction and basement excavation were carried out using the XDISP computer package supplied by Oasys Ltd, which references the CIRIA 580 charts.

For the purposes of the analyses, a high stiffness retaining system, considered appropriate on basis that high level propping is to be installed as excavation progresses.

6.1.3.3 Assessment of combined movements

The results of the analyses outlined above have been combined in XDISP in order to estimate the resultant ground movements for the key stages of construction, i.e. demolition, basement excavation and final construction. The analyses adopted for each stage and how they have been combined for the purposes of this ground movement assessment is outlined below:

- **Demolition** – Short term heave movements estimated using PDISP;
- **Basement construction** – Short term heave movements determined above combined with the lateral and vertical ground movements estimated by XDISP using the C580 curves for wall installation and basement excavation;

- **Final construction** – Combination of short term heave movements from demolition, the lateral and vertical wall movements estimated in XDISP using C580 and long term heave/settlement movements estimated using PDISP;

Notwithstanding the above, 48 - 56 Bayham Place and 3 Bayham Street to the north / north east are understood to have been constructed prior to or at the same time as the existing development. It is therefore considered that ground movements associated with loading following original construction and subsequent unloading following demolition will essentially counteract each other. On this basis, the ground movements estimated for the demolition stage have been omitted when determining the resultant ground movements beneath both these properties.

6.1.4 Summary of ground movements

A summary of the resultant ground movements for the key stages of construction (i.e. demolition, basement excavation and final construction) are outlined in the following sections.

6.1.4.1 Demolition

The estimated short term and long term heave movements resulting from the demolition of No 1 Bayham Street, No 65 Bayham Place and the Hope and Anchor Public House are summarised below in Table 9 and contour plots provided in Appendix D. Settlements are defined as positive movements and heave as negative movements.

Table 9: Heave Movements - PDISP

Construction Stage	No 2-4 Camden High Street	No 48-56 Bayham Place	No 3 Bayham Street	Western Site Boundary	Northern Site Boundary	Eastern Site Boundary	Southern Site Boundary
Short Term (Undrained)	0	0	-1	0	-2	-3	-2
Long Term (Drained)	0	-1	-2	0	-5	-7	-5

The long term movements indicated above for the demolition stages would only arise if the construction works stalled for a number of years following the initial demolition. It is therefore considered extremely unlikely that this condition would ever arise in this instance

A summary of the estimated ground movements likely to be experienced during the demolition stage following combination with XDISP are presented in Table 10. The full results are provided in Appendix E. Only the displacement resulting from the short term or undrained condition have been imported as this is the considered to be the most realistic situation given the proposed construction sequence.

Table 10: Short Term (Undrained) Ground Movements - XDISP

Adjacent Property	Ground Movement at Front of Adjacent Property		Ground Movement at Rear of Adjacent Property	
	Lateral (mm)	Vertical (mm)	Lateral (mm)	Vertical (mm)
No 2-4 Camden High Street	0	0	0	0
No 48-56 Bayham Place	NA	NA	NA	NA
No 3 Bayham Street	NA	NA	NA	NA

Notes:

- Lateral displacement recorded as movement along the line.
- Positive lateral displacement values indicate ground movement towards the excavation.
- Negative vertical displacement values indicate ground heave.

6.1.4.2 Basement Construction

The estimated short term and long term heave movements resulting from proposed basement excavation are summarised in Table 11 and contour plots provided in Appendix D. Settlements are defined as positive movements and heave as negative movements.

It should be noted that wall installation movements have not been assessed using the PDISP software and will be considered following the combination of displacements within the XDISP software.

Table 11: Heave Movements - PDISP

Construction Stage	No 2-4 Camden High Street	No 48-56 Bayham Place	No 3 Bayham Street	Western Site Boundary	Northern Site Boundary	Eastern Site Boundary	Southern Site Boundary
Short Term (Undrained)	0	0	0	0	0	-2	0
Long Term (Drained)	0	0	0	0	-1	-3	0

As noted previously the long term movements indicated above for the basement excavation stages would only arise if the construction works stalled for a number of years following the initial excavation stages.

A summary of the estimated ground movements likely to be experienced during the basement construction stage following combination with XDISP are presented in Table 12. The full results are provided in Appendix E. The displacement resulting from the short term or undrained condition only have been imported as this is the considered to be the most realistic situation given the proposed construction sequence.

Table 12: Short Term (Undrained) Ground Movements - XDISP

Adjacent Property	Ground Movement at Front of Adjacent Property		Ground Movement at Rear of Adjacent Property	
	Lateral (mm)	Vertical (mm)	Lateral (mm)	Vertical (mm)
No 2-4 Camden High Street	0	0	0	0
No 48-56 Bayham Place	0	0	0	0
No 3 Bayham Street	0	0	0	0

Notes:

- Lateral displacement recorded as movement along the line.
- Positive lateral displacement values indicate ground movement towards the excavation.
- Negative vertical displacement values indicate ground heave.

6.1.4.3 Final Construction

The estimated short term and long term heave movements resulting from the final development construction are summarised below in Table 13 and contour plots provided in Appendix D. Settlements are defined as positive movements and heave as negative movements.

Table 13: Settlement / Heave Movements - PDISP

Construction Stage	No 2-4 Camden High Street	No 48-56 Bayham Place	No 3 Bayham Street	Western Site Boundary	Northern Site Boundary	Eastern Site Boundary	Southern Site Boundary
Short Term (Undrained)	0	0	0	0	1	4	1
Long Term (Drained)	1	0	1	0	3	9	2

A summary of the estimated ground movements likely to be experienced following the completion of the proposed development once combined with the displacement in XDISP are presented in Table 14. The full results are provided in Appendix E. The displacement resulting from the long term or drained condition only have been imported as this is the considered to be the most realistic situation given the proposed construction sequence.

Table 14: Long Term (Drained) Ground Movements - XDISP

Adjacent Property	Ground Movement at Front of Adjacent Property		Ground Movement at Rear of Adjacent Property	
	Lateral (mm)	Vertical (mm)	Lateral (mm)	Vertical (mm)
No 2-4 Camden High Street	0	1	0	0
No 48-56 Bayham Place	1	0	0	0
No 3 Bayham Street	1	1	0	0

Adjacent Property	Ground Movement at Front of Adjacent Property		Ground Movement at Rear of Adjacent Property	
	Lateral (mm)	Vertical (mm)	Lateral (mm)	Vertical (mm)
Notes: • Lateral displacement recorded as movement along the line. • Positive lateral displacement values indicate ground movement towards the excavation. • Negative vertical displacement values indicate ground heave.				

6.2 Highway or Pedestrian Right of Way Assessment

An assessment of the horizontal and vertical ground movements that could impact on the highways to Bayham Place and Bayham Street to the north/east of the site has been undertaken. This assessment predicts a maximum of 9mm of horizontal movement to the immediate east of the site along Bayham Street and 3mm to the immediate north of the site along Bayham Place, and maximum vertical movements of 1mm settlement along Bayham Place during basement construction. It is considered the impact of these relatively small ground movements on the adjacent highways is likely to be negligible.

6.3 Building Damage Category Assessment

Following the combination of the displacements resulting from applied loading obtained from PDISP and those resulting from wall installation and basement excavation obtained from XDISP it is possible to undertake a building damage assessment using the methodology provided within CIRIA C580.

This guidance provides a methodology for assessing the potential damage to properties within the zone of influence of the basement excavation as summarised in Figures 2.16 and 2.18 of the document. This methodology uses the relationship between Damage Category, lateral strain and deflection ratio developed by Boscardin and Cording (1989) and Burland (2001). The definition of the categories given in C580 is reproduced in Table 15.

Table 15: Classification of damage category (from Table 2.5, CIRIA C580)

Category of damage	Description of typical damage	Approximate crack width (mm)	Limiting tensile strain ε_{lim} (%)
0 Negligible	Hairline cracks of less than about 0.1mm are classed as negligible.	<0.1	0.0- 0.05
1 Very slight	Fine cracks that can easily be treated during normal decoration. Cracks in external brickwork visible on inspection.	<1	0.05–0.075
2 Slight	Cracks easily filled. Redecoration probably required. Cracks are visible externally and some repointing may be required externally to ensure watertightness. Doors and windows may stick slightly.	<5	0.075 – 0.15

Category of damage	Description of typical damage	Approximate crack width (mm)	Limiting tensile strain ε_{lim} (%)
3 Moderate	The cracks require some opening up and can be patched by a mason. Repointing of external brickwork and possibly a small amount of brickwork to be replaced. Doors and windows sticking. Service pipes may fracture. Weathertightness often impaired.	5 – 15 or a number of cracks >3	0.15 – 0.3
4 Severe	Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Windows and frames distorted, floor sloping noticeably. Walls leaning or bulging noticeably, some loss of bearing in beams. Service pipes disrupted.	15 – 25 but also depends on number of cracks	>0.3
5 Very severe	This requires a major repair involving partial or complete rebuilding. Beams lose bearings, walls lean badly and require shoring. Windows broken with distortion. Danger of instability.	Usually >25 but depends on number of cracks	

The maximum horizontal strains and deflection ratios calculated from the ground movements outlined in the previous section are presented in Table 16, along with the corresponding damage category.

Table 16: Maximum Calculated Horizontal Strains and Deflection Ratios

Adjacent Building	Horizontal Strain (%)	Deflection Ratio (%)	Damage Category
Demolition			
No 2-4 Camden High Street	NA	NA	NA
No 48-56 Bayham Place	NA	NA	NA
No 3 Bayham Street	0.000	440.19×10^{-6}	Negligible
Basement Construction			
No 2-4 Camden High Street	NA	NA	NA
No 48-56 Bayham Place	NA	NA	NA
No 3 Bayham Street	-281.55×10^{-6}	475.48×10^{-6}	Negligible
Final Construction			
No 2-4 Camden High Street	0.000	0.0015	Negligible
No 48-56 Bayham Place	0.009	125.52×10^{-6}	Negligible
No 3 Bayham Street	-0.0056	0.0019	Negligible

In summary, all of the adjacent properties fall into 'Category 0' defined as 'Negligible Damage'. The results therefore fulfil the requirements of CPG4 in that they do not

exceed the damage category of 'very slight' (Category 1) and reflect categories of slight cosmetic rather than structural damage.

6.4 LUL Asset Assessment

The predicted ground movements at tunnel crown level (indicated to be at circa 10.80m.bgl or 12.70mAOD) for the various phases of the development are detailed in the Table 17. Displacement graphs which detail the distinct phases of works and the potential movements at the closest LUL tunnel are also presented in Appendix F.

Table 17: PDISP Ground Movement Results

Stage	Assessment Methodology	Maximum Ground Movement at LUL Tunnel (mm)	Maximum Displacement Ratio of LUL Asset
Demolition	Immediate Undrained	0.03	1 in 2701214
Demolition	Long Term Drained	0.02	1 in 9243462
Basement Excavation	Immediate Undrained	0.02	1 in 5630159
Basement Excavation	Long Term Drained	0.01	1 in 16109446
Final Construction	Immediate Undrained	-0.05	1 in 1002169
Final Construction	Long Term Drained	-0.03	1 in 2733165
Final Construction	Net Loading	-0.04	1 in 2192196
Note:	Movements with a '–' prefix indicate positive or heave movement, those movements without a prefix indicate a downwards movement or settlement		

In summary, the impact of such small ground movements on the adjacent LUL infrastructure will be negligible.

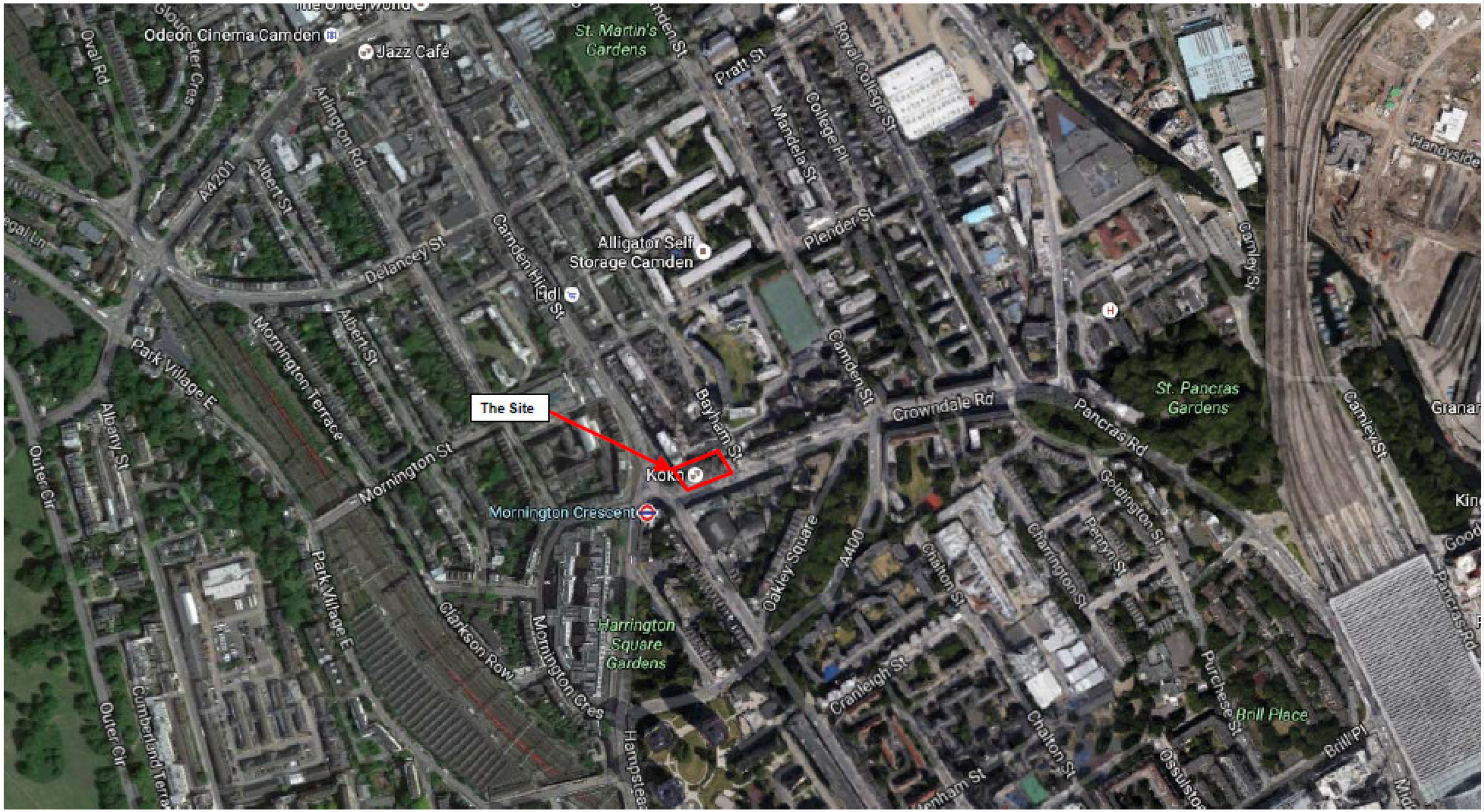
6.5 Control of Ground Movements and Monitoring

In order to reduce the potential for any movement over and above that expected, the following methods of safe practice should be considered prior to and during construction:

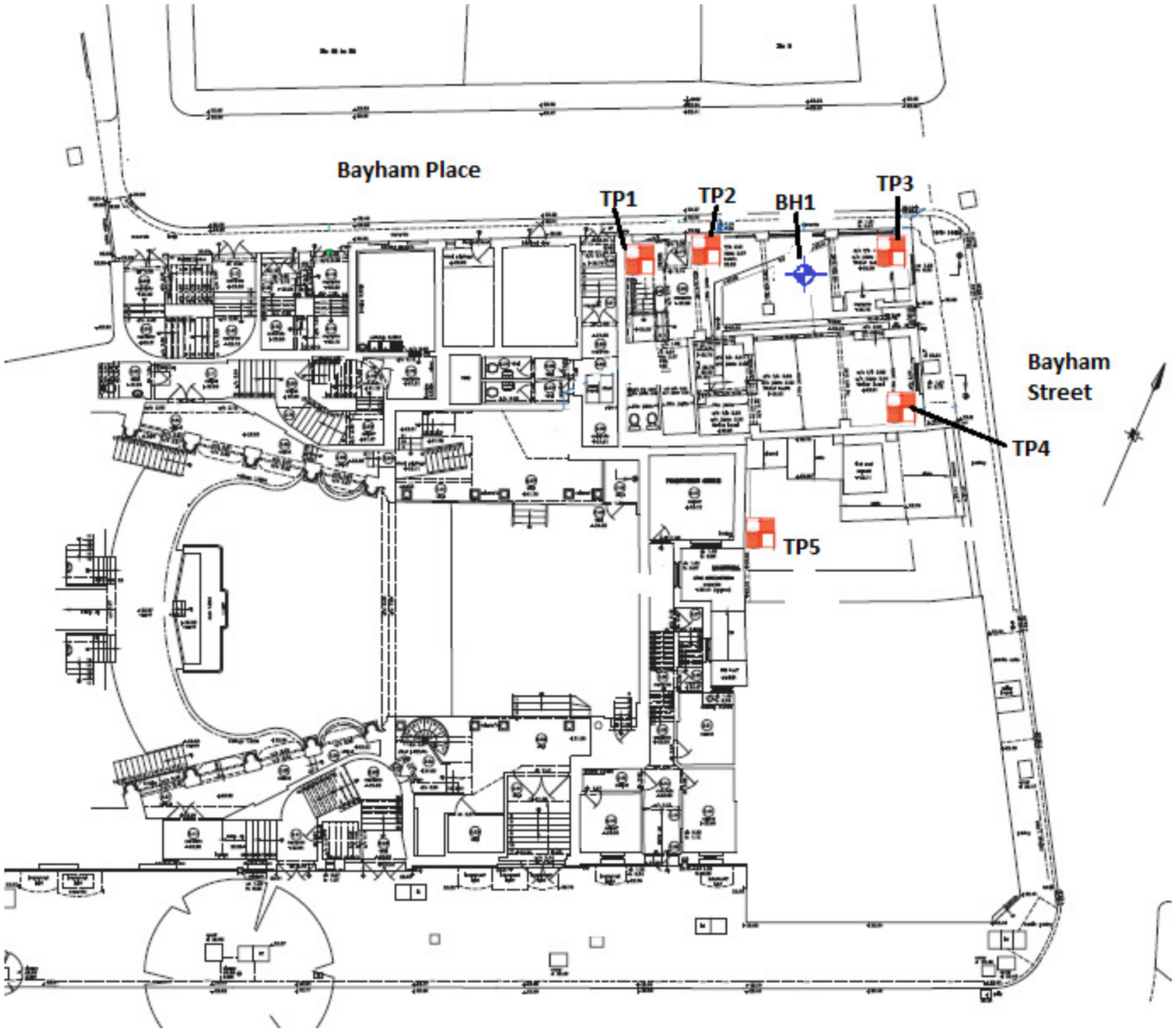
- Good workmanship will be required to ensure that pile installation induced settlements are kept to a minimum. It will be essential to ensure that the made ground is not destabilised during casting of the secant piled wall;
- The secant piled wall should be installed to a suitable depth and have adequate embedment in stiff strata for satisfactory vertical and lateral stability;
- It should be ensured that basement slab is cast as early as possible and tight to the piled retaining wall. Sufficient time should be given for the slab to cure and gain strength prior to continuation of excavation below;
- Where temporary props are required they should be designed to provide adequate restraint to limit lateral ground movements. Walings should be tied in so they do not rely on friction or adhesion between the prop end and waling to be held in place;

- The first stage of excavation should be minimised and the first (stiff) support should be installed as early as possible in the construction sequence;
- The construction of the wall and its support systems should not be delayed;
- Over-excavation should be avoided;
- Monitoring both above and below ground should be carried out to ensure that the expected displacements are not exceeded. Limits of lateral and vertical displacement should be set beyond which the method of construction should be re assessed.

FIGURES

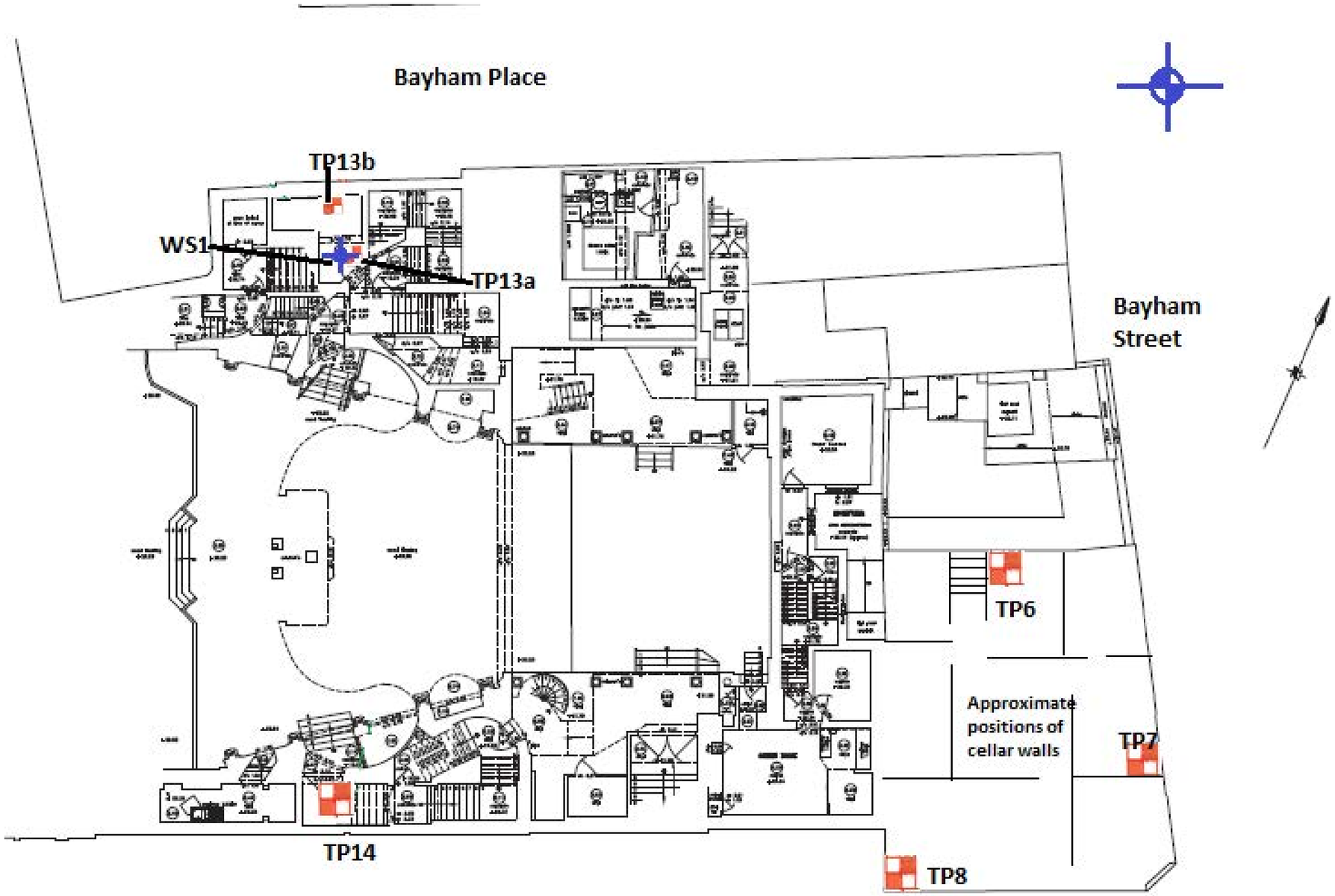


RSK	**SITE LOCATION PLAN**	**Client:**	The Hope Lease Limited	**Figure No:**	1
		Site:	The Hope Project, Camden, London	**Job No:**	371475
		Scale:	NTS	**Source:**	Google



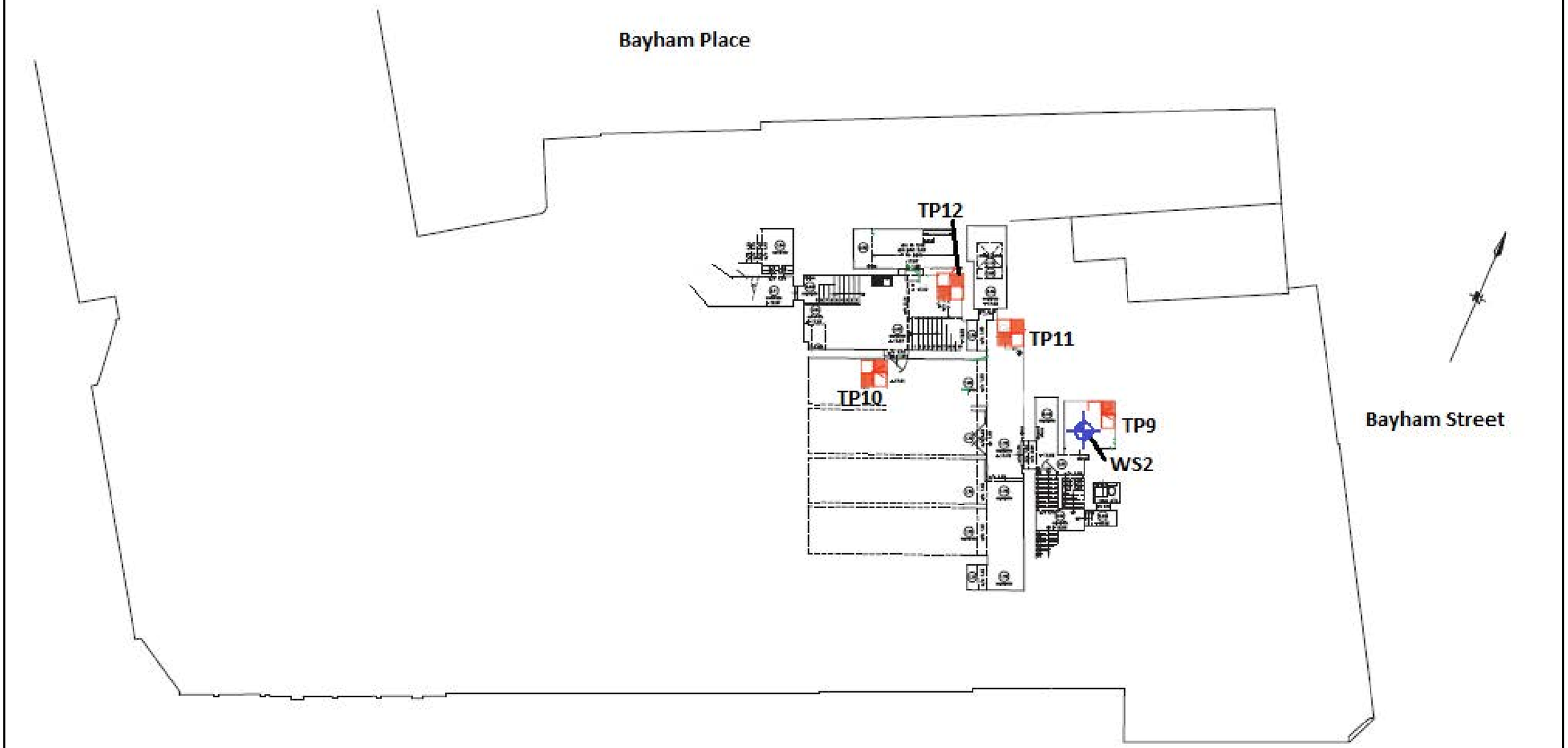
Ground floor level

RSK	**EXPLORATORY HOLE LOCATION PLAN**	**Client:**	The Hope Lease Limited	**Figure No:**	2a
		Site:	The Hope Project, Camden, London	**Job No:**	371475
		Scale:	NTS	**Source:**	Heyne Tillett Steel, The Hope Project, Geotechnical Investigations, Sk04 A



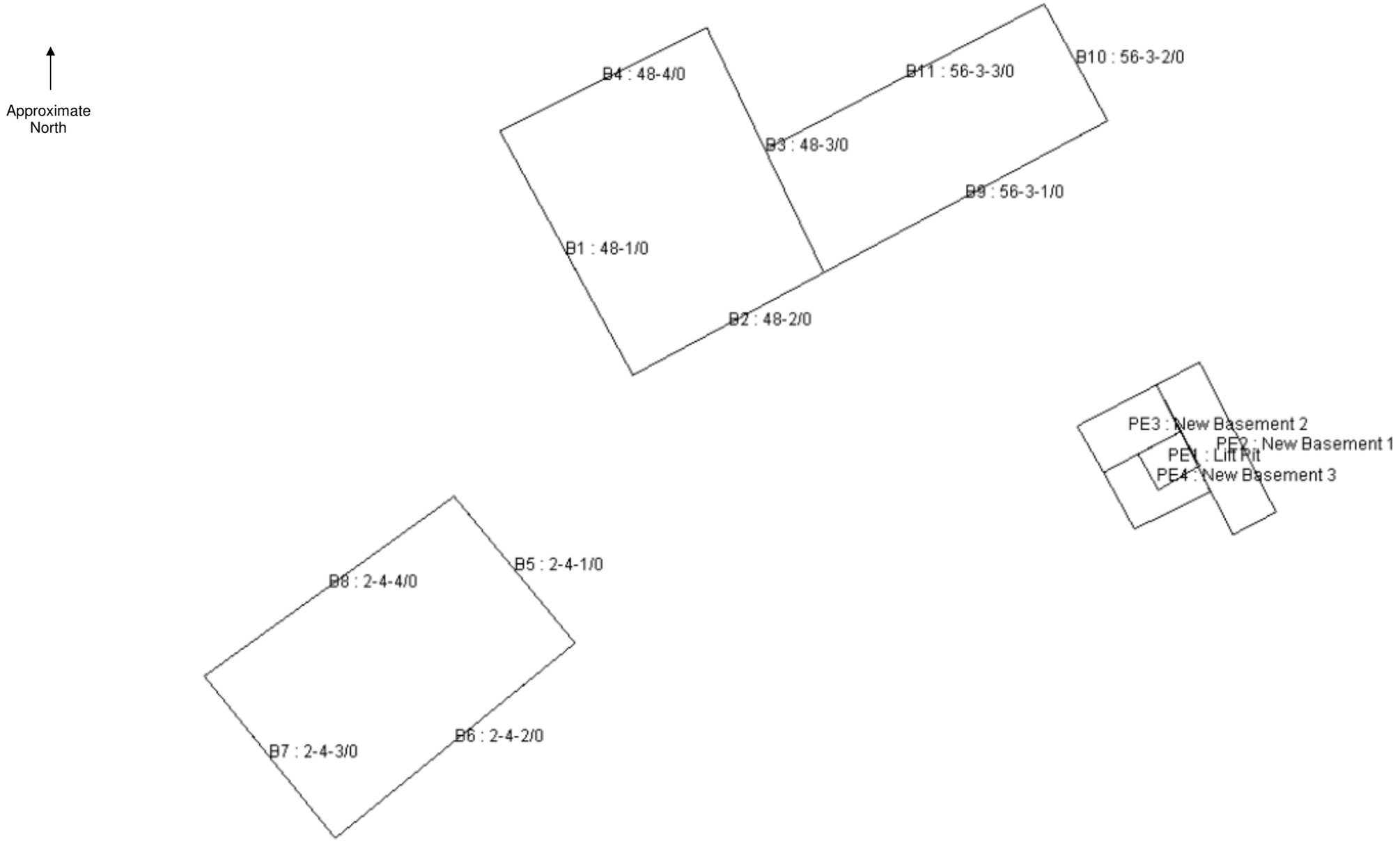
Lower ground floor level

RSK	**EXPLORATORY HOLE LOCATION PLAN**	**Client:**	The Hope Lease Limited	**Figure No:**	2b
		Site:	The Hope Project, Camden, London	**Job No:**	371475
		Scale:	NTS	**Source:**	Heyne Tillett Steel, The Hope Project, Geotechnical Investigations, Sk04 A



Koko Club Basement Level

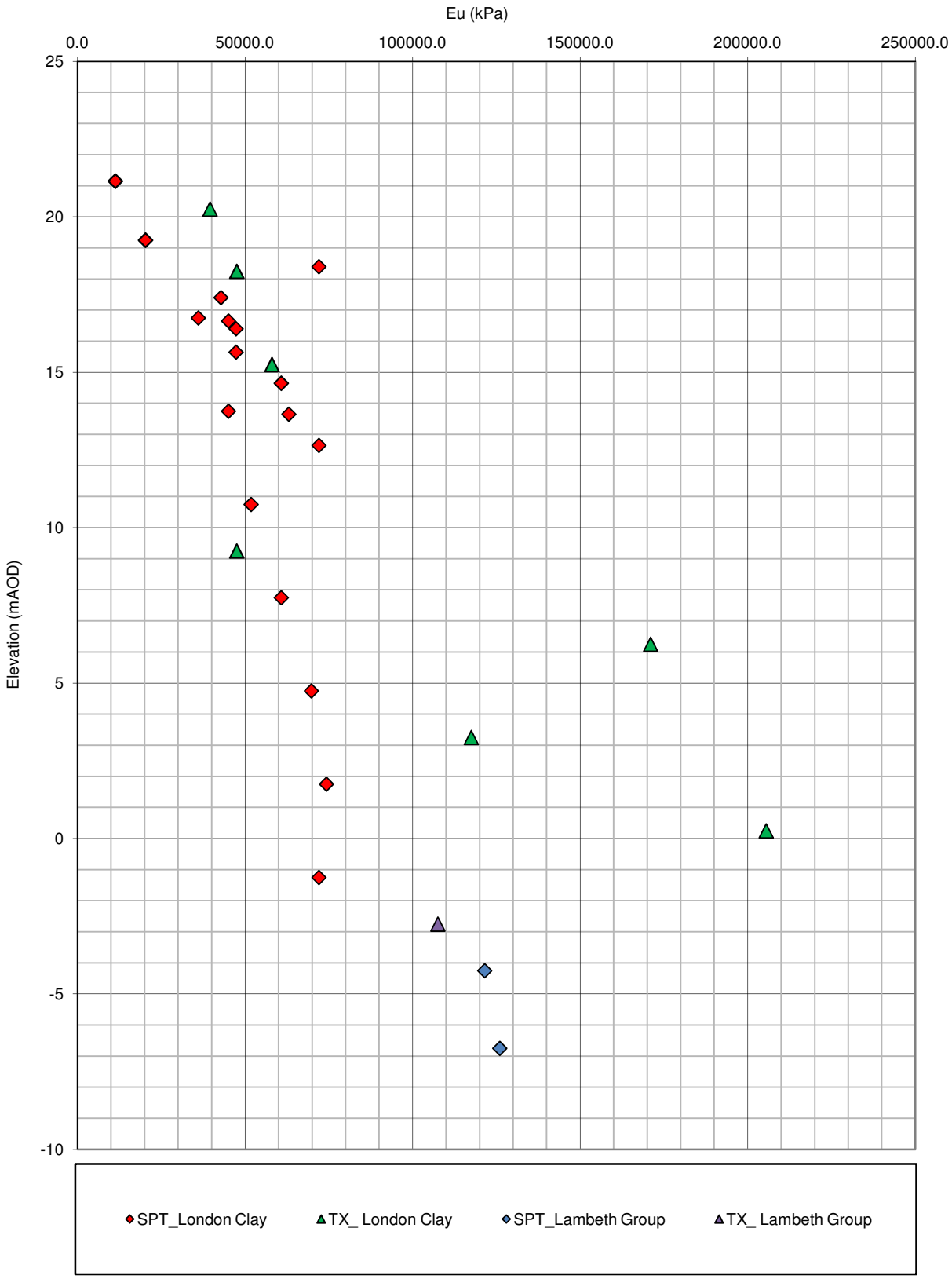
RSK	**EXPLORATORY HOLE LOCATION PLAN**	**Client:**	The Hope Lease Limited	**Figure No:**	2c
		Site:	The Hope Project, Camden, London	**Job No:**	371475
		Scale:	NTS	**Source:**	Heyne Tillett Steel, The Hope Project, Geotechnical Investigations, Sk04 A



RSK	**ADJACENT PROPERTIES PLAN**	**Client:**	The Hope Lease Ltd	**Figure No:**	3
		Site:	The Hope Project	**Job No:**	371475
		Scale:	Not to scale	**Source:**	Client

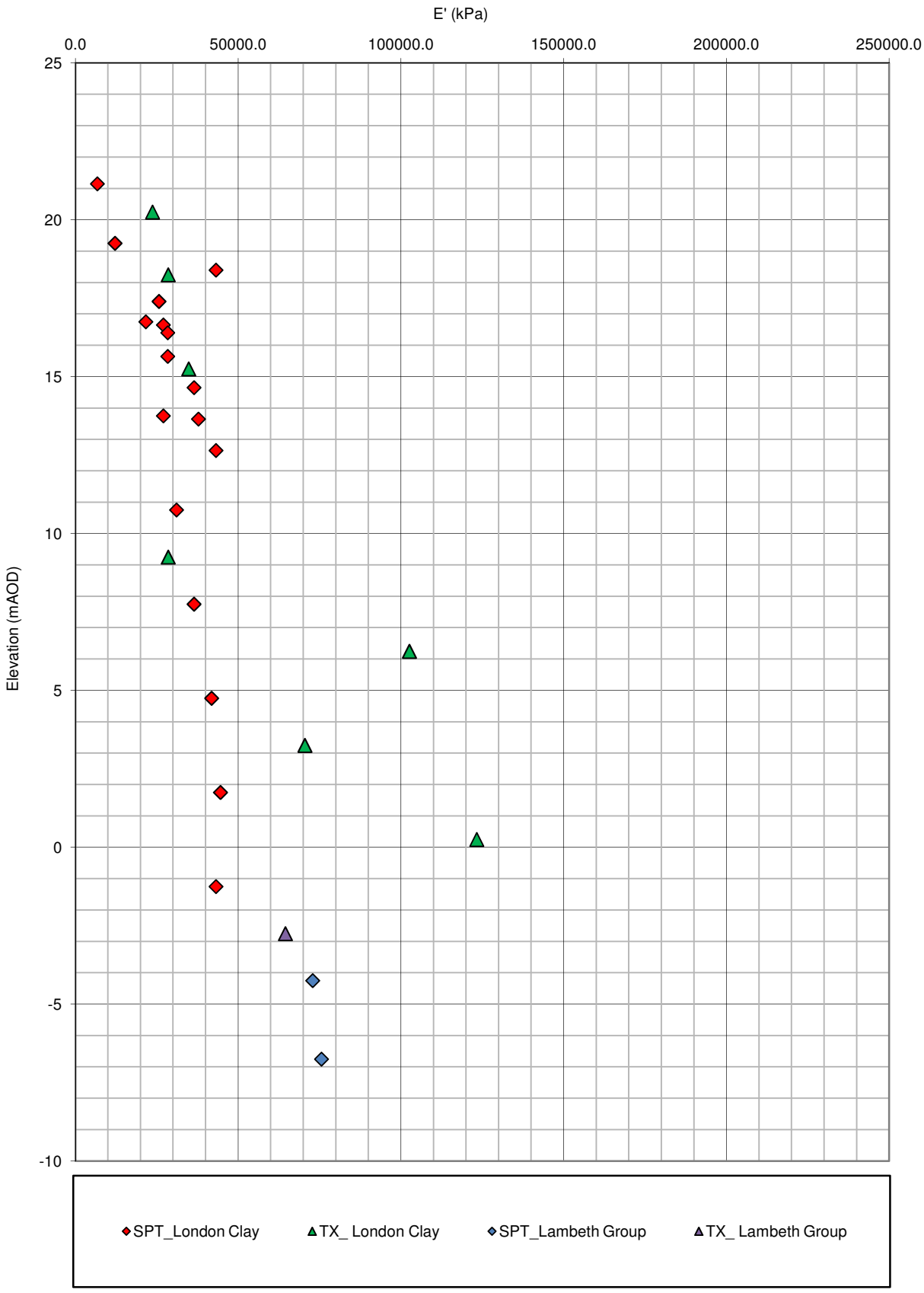
UNDRAINED YOUNGS MODULUS vs ELEVATION

Site:	Client:	Job Number:	371475
The Hope Project	The Hope Lease Limited	Figure:	4



DRAINED YOUNGS MODULUS vs ELEVATION

Site:	Client:	Job Number:	371475
Hope Project	The Hope Lease Limited	Figure:	5



APPENDIX A
SERVICE CONSTRAINTS

1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for The Hope Lease Ltd (the "client") in accordance with the terms of a contract between RSK and the "client". The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.

2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.

3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. **Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.**

4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.

5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.

6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.

7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.

8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.

9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.

APPENDIX B
PROPOSED DEVELOPMENT PLANS AND LOADING INFORMATION

BAYHAM STREET - EXISTING LOAD TAKEDOWN
SHEET 1/3

BAYHAM PLACE

DL = 33 kN/m
LL = 14 kN/m
ELEVATION (A)

TP1 TP2 TP3

65 BAYHAM PLACE

DL = 14 kN
LL = 44 kN
COLUMN (A)

DL = 14 kN
LL = 44 kN
COLUMN (B)

ELEVATION (B)
DL = 31 kN/m
LL = 9 kN/m

ELEVATION (C)
DL = 97 kN/m
LL = 11 kN/m

WALL (D)
DL = 165 kN/m
LL = 18 kN/m

WALL (E)
DL = 58 kN/m
LL = 29 kN/m

1 BAYHAM STREET

ELEVATION (F)
DL = 88 kN/m
LL = 14 kN/m

ELEVATION (G)
DL = 18 kN/m
LL = 11 kN/m

TP4

WALL (H)
DL = 51 kN/m
LL = 9 kN/m

WALL (J)
DL = 104 kN/m
LL = 19 kN/m

WALL (K)
DL = 106 kN/m
LL = 28 kN/m

TP5

THE HOPE & ANCHOR PUB - YARD

ELEVATION (L)
DL = 48 kN/m
LL = 2 kN/m

SEE 1CO1CO LOAD TAKE DOWN

SEE BAYHAM STREET LOWER GROUND FLOOR LOAD TAKEDOWN

BAYHAM STREET

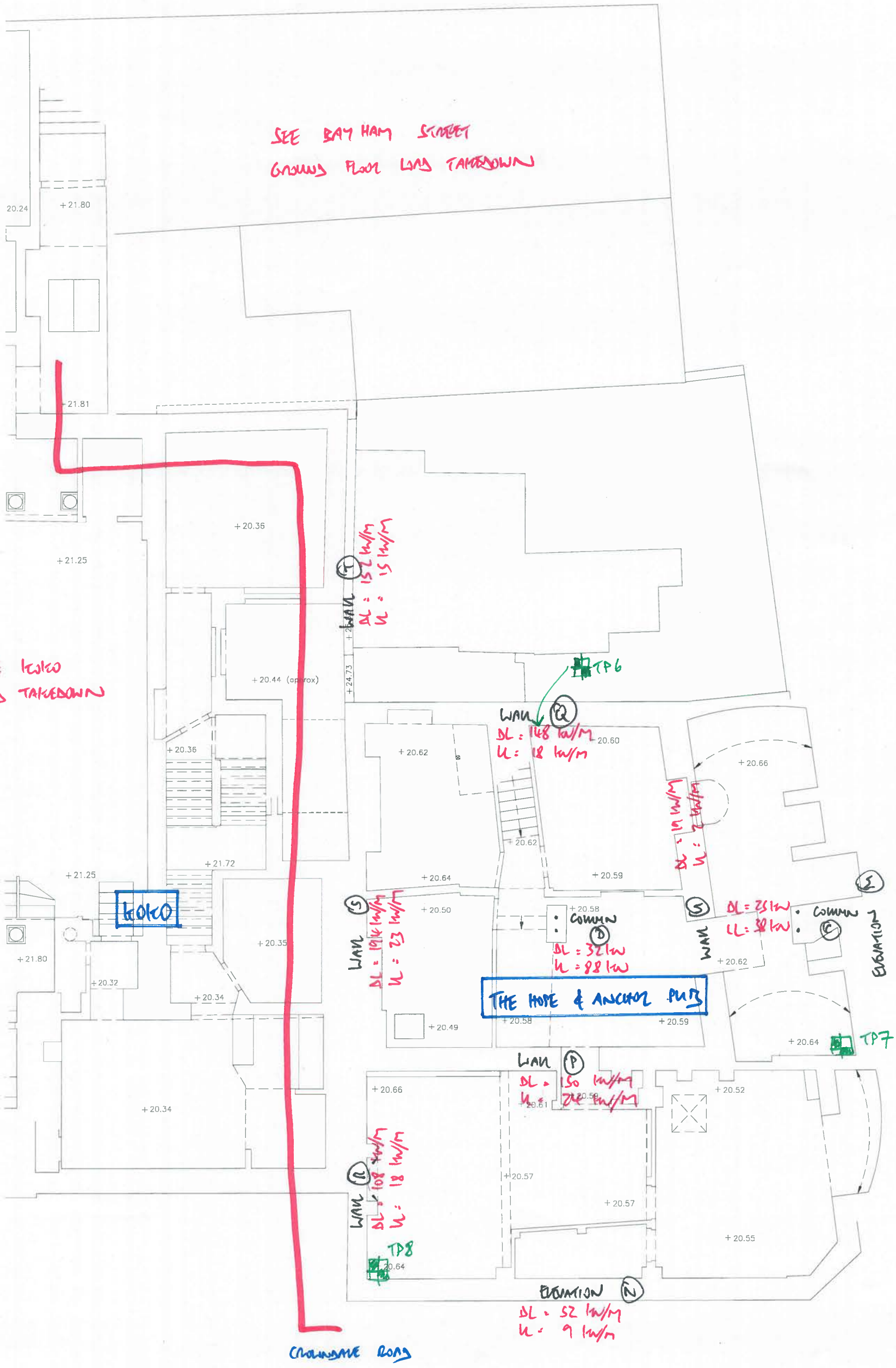
NOTE:
ALL LOADS ARE UNFACTORED.
DL = DEAD LOAD
LL = IMPOSED LOAD

EXISTING LOAD TAKEDOWN - GROUND FLOOR
1:100 @ A3

HEYNE TILLETT STEEL

THE HOPE PROJECT
EXISTING LOAD TAKEDOWN
14444 AUG 2016 MST

BAYHAM STREET - EXISTING LOAD TAKEDOWN
SHEET 2/3



EXISTING LOAD TAKEDOWN - LOWER GROUND FLOOR

1:100 @A3

HEYNE TILLETT STEEL

THE HOPE PROJECT
EXISTING LOAD TAKEDOWN
1444 AUG 2016 MJT

NOTE:
ALL LOADS ARE UNFACTORED.
DL = DEAD LOAD
LL = IMPOSED LOAD

KOKO - EXISTING LOAD TAKEDOWN
SHEET 3/3

BAYHAM PLACE

KOKO

(STAGE)

SEE BAYHAM STREET LOAD TAKEDOWN

THE HOPE & ANCHOR PUB

CAMDEN HIGH STREET

COLINDALE ROAD

ELEVATION P
DL = 122 kN/m
LL = 15 kN/m

ELEVATION K
DL = 129 kN/m
LL = 16 kN/m

WALL R
DL = 113 kN/m
LL = 32 kN/m

WALL B
DL = 295 kN/m
LL = 32 kN/m

ELEVATION Q
DL = 99 kN/m
LL = 14 kN/m

WALL S
DL = 102 kN/m
LL = 17 kN/m

WALL C
DL = 179 kN/m
LL = 17 kN/m

WALL F
DL = 159 kN/m
LL = 12 kN/m

COLUMN K
DL = 634 kN
LL = 39 kN

WALL E
DL = 735 kN/m
LL = 20 kN/m

COLUMN L
DL = 639 kN
LL = 39 kN

WALL G
DL = 243 kN/m
LL = 14 kN/m

WALL H
DL = 339 kN/m
LL = 26 kN/m

WALL J
DL = 339 kN/m
LL = 26 kN/m

WALL A
DL = 242 kN/m
LL = 32 kN/m

ELEVATION M
DL = 191 kN/m
LL = 14 kN/m

ELEVATION N
DL = 209 kN/m
LL = 14 kN/m

(WALL D OVER)

NOTE:
ALL LOADS ARE UNFACTORED
DL = DEAD LOAD
LL = IMPOSED LOAD

EXISTING LOAD TAKEDOWN
NTS

HEYNE TILLETT STEEL

THE HOPE PROJECT
EXISTING LOAD TAKEDOWN
1444 AUG 2016 MJT

Job:	The Hope Project		Date:	19/09/17
Title	Pile Schedule		Eng.	ACa
Job No:	1444	Sheet No:	Rev.	1

HEYNE TILLETT STEEL

Ref	G	Q	W
	(kN)	(kN)	(kN)
P1	390	290	-
P2	390	290	-
P3	-200	-200	-
P4	-200	-200	-
P5	390	290	-
P6	390	290	-
P7	410	290	-
P8	410	290	-
P9	-190	-200	-
P10	-190	-200	-
P11	410	290	-
P12	410	290	-
P13	470	340	-
P14	470	340	-
P15	-30	-50	-
P16	-30	-50	-
P17	100	50	-
P18	100	50	-
P19	240	150	-
P20	240	150	-
P21	20	-20	-
P22	420	230	-
P23	420	230	-
P24	100	50	-
P25	100	50	-
P26	100	50	-
P27	100	50	-
P28	550	260	-
P29	550	260	-
P30	440	220	-
P31	440	220	-
P32	380	150	-
P33	380	150	-
P34	350	130	-
P35	350	130	-
P36	-150	-100	-
P37	-190	-200	-
P38	440	210	-
P39	440	210	-
P40	260	90	-
P41	260	90	-
P42	-100	-70	-
P43	270	110	-
P44	-450	-280	-

Notes:

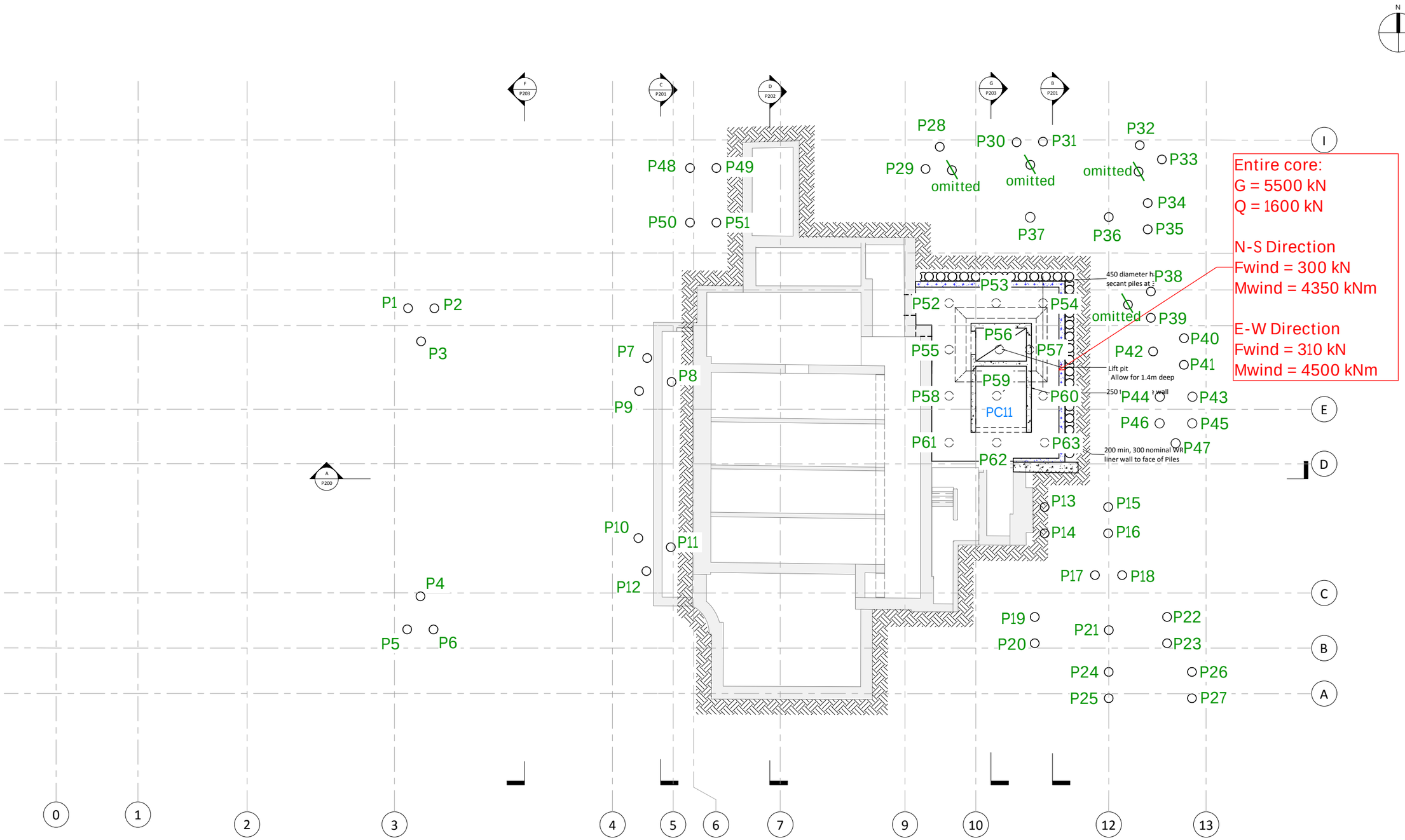
- All loads are unfactored.
- Dead load is denoted G.
- Live load is denoted Q.
- Wind load is denoted W.
- Loads are preliminary and are subject to further analysis.

Job:	The Hope Project		Date:	19/09/17
Title	Pile Schedule		Eng.	ACa
Job No:	1444	Sheet No:	Rev.	1

Ref	G	Q	W
	(kN)	(kN)	(kN)
P45	670	340	-
P46	-110	-90	-
P47	620	320	-
P48	280	260	240 / -240
P49	120	-	230 / -230
P50	240	200	-240 / 240
P51	70	-60	-230 / 230
P52			
P53			
P54			
P55			
P56			
P57			
P58			
P59			
P60			
P61			
P62			
P63			

Notes:

- All loads are unfactored.
- Dead load is denoted G.
- Live load is denoted Q.
- Wind load is denoted W.
- Loads are preliminary and are subject to further analysis.



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm

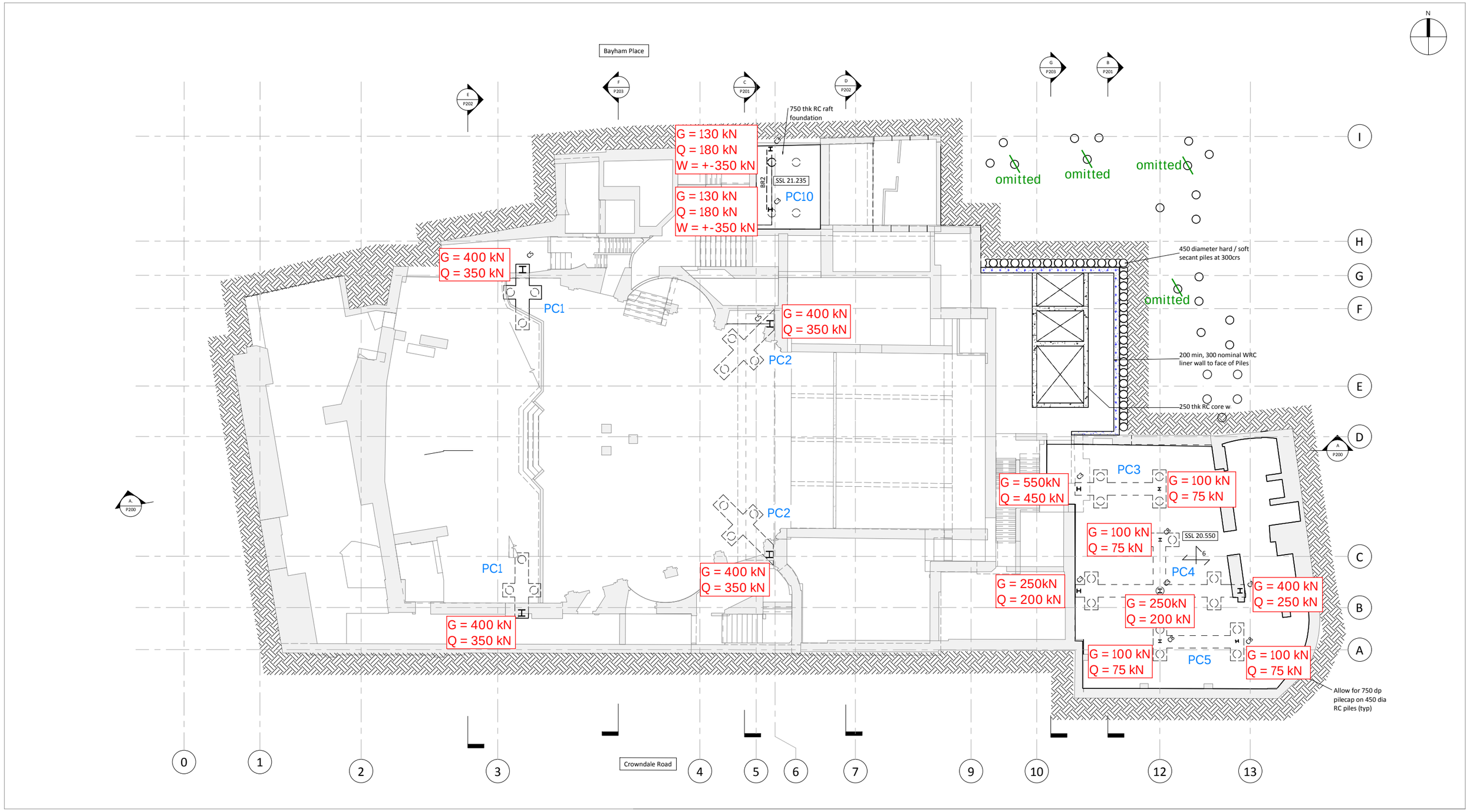
Notes:
- All loads are un-factored.
- Loads shown are at the base of the columns/walls.
- Dead load is denoted G and includes self weight and super imposed dead load.
- Imposed load is denoted Q.
- Wind load is denoted W.
- Pile cap references shown in blue.
- Pile references shown in green.

HEYNE TILLETT STEEL
STRUCTURAL ENGINEERS
hts.uk.com

The Hope Project

Proposed Load Take-down
Sub-basement

1444/SK105 Rev2
19/09/17



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm

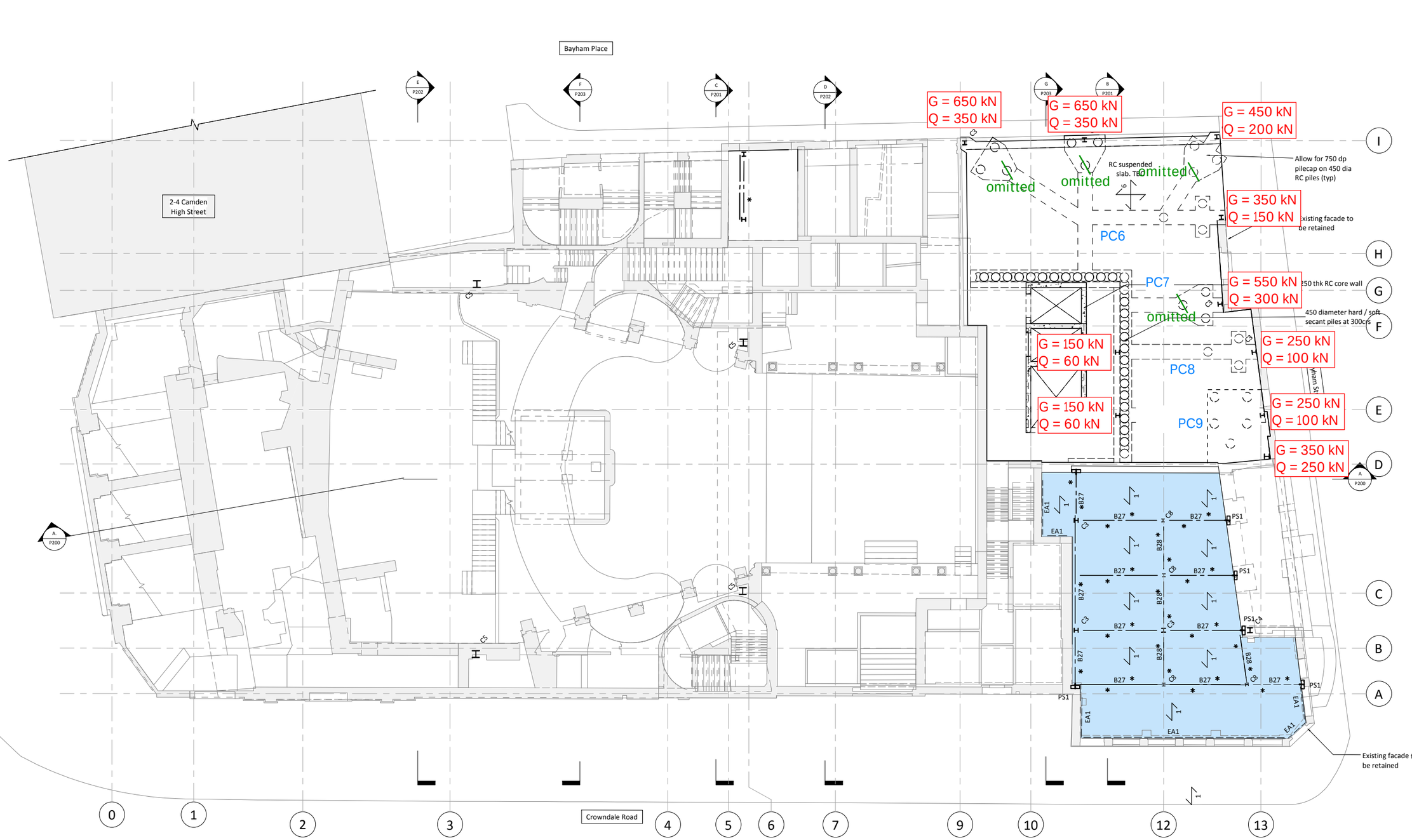
Notes:
- All loads are un-factored.
- Loads shown are at the base of the columns/walls.
- Dead load is denoted G and includes self weight and super imposed dead load.
- Imposed load is denoted Q.
- Wind load is denoted W.
- Pile cap references shown in blue.
- Pile references shown in green.

HEYNE TILLETT STEEL
STRUCTURAL ENGINEERS
hts.uk.com

The Hope Project

Proposed Load Take-down Basement

1444/SK106 Rev2
19/09/17



100mm @ A1 (50mm @ A3)

1 This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.

2 Do not scale from this drawing in either paper or digital form. Use written dimensions only. To check drawing has been printed to the intended scale the above bar should be 100mm

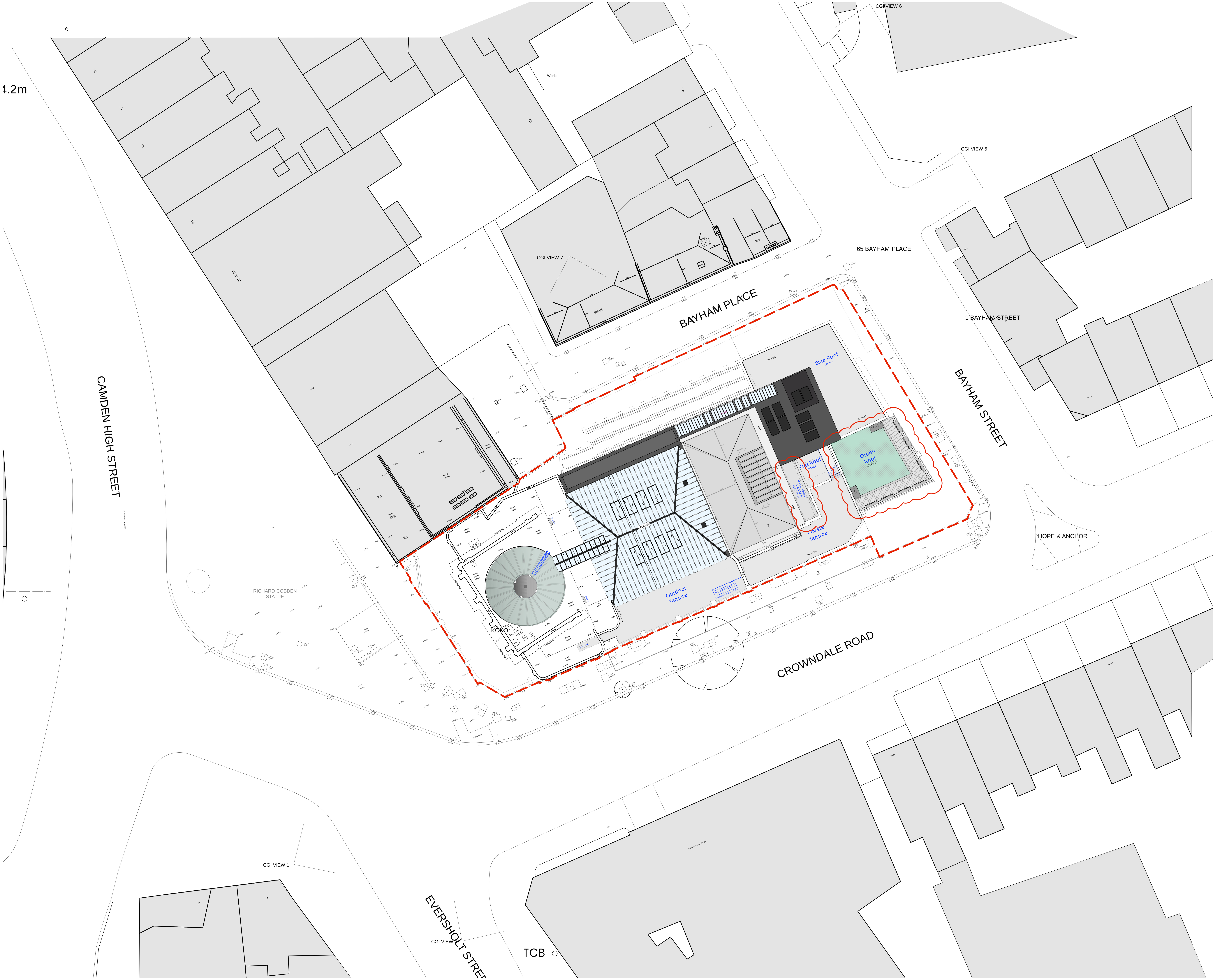
Notes:
- All loads are un-factored.
- Loads shown are at the base of the columns/walls.
- Dead load is denoted G and includes self weight and super imposed dead load.
- Imposed load is denoted Q.
- Wind load is denoted W.
- Pile cap references shown in blue.
- Pile references shown in green.

HEYNE TILLETT STEEL
STRUCTURAL ENGINEERS
hts.uk.com

The Hope Project

Proposed Load Take-down
Ground Floor

1444/SK107 Rev2
19/09/17



Only the original drawing should be relied upon. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.

All shop drawings to be submitted to the architect for comment prior to fabrication.

This drawing is to be read in conjunction with the Architect's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect.

Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

revision / date / amendments

DRAFT

17.10.17

PLANNING

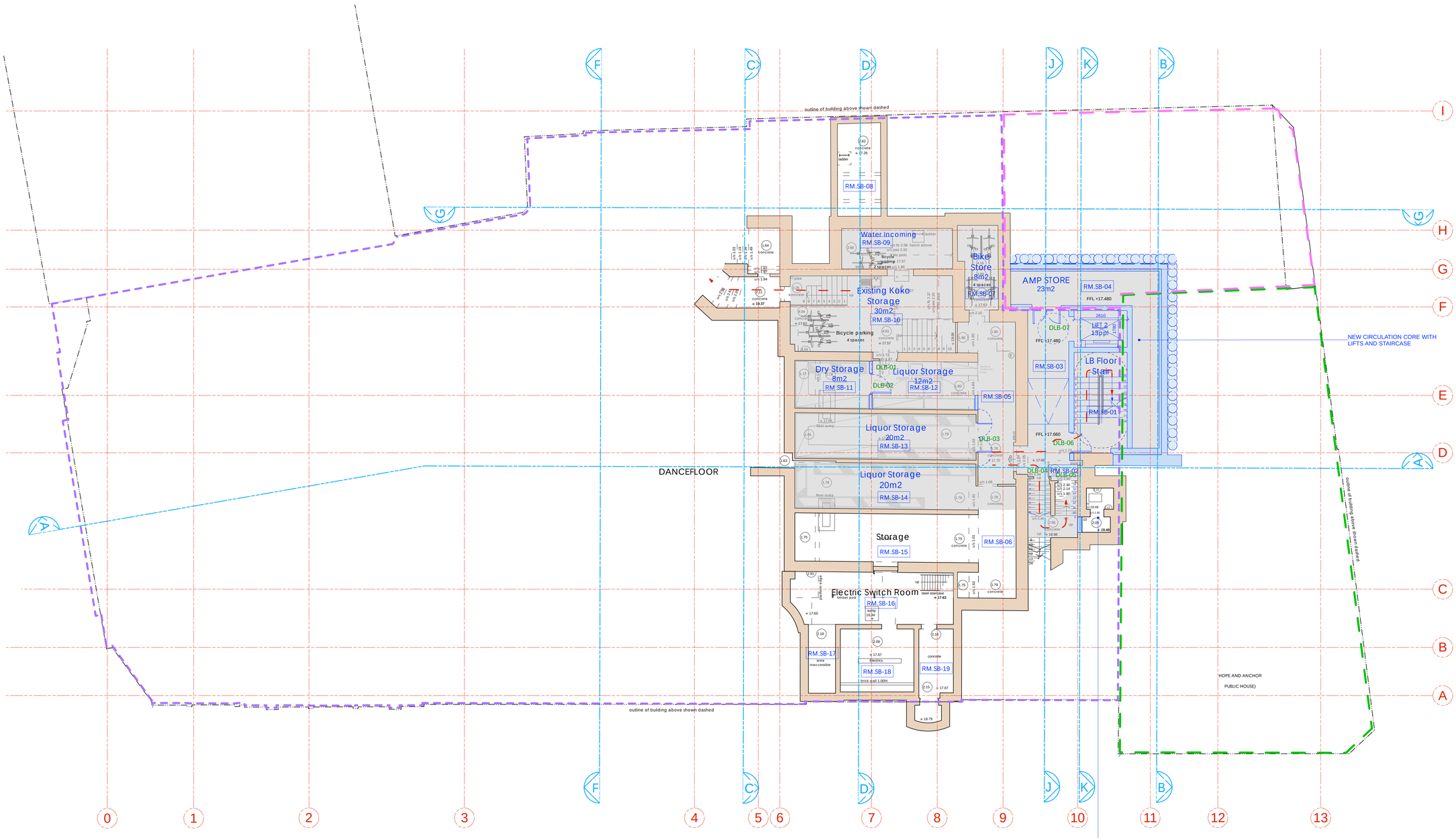
Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place
Camden, London

drawing title	scale	date
Proposed Site Plan	1:200 @A1	26.05.17
	drawn EH	checked DA
drawing number AHA/ KKC / GA /001	revision -	

revision / date / amendments
- / --/--/-- / -



LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise

17.10.17

DRAFT

0 1 2 3 4 5 8m

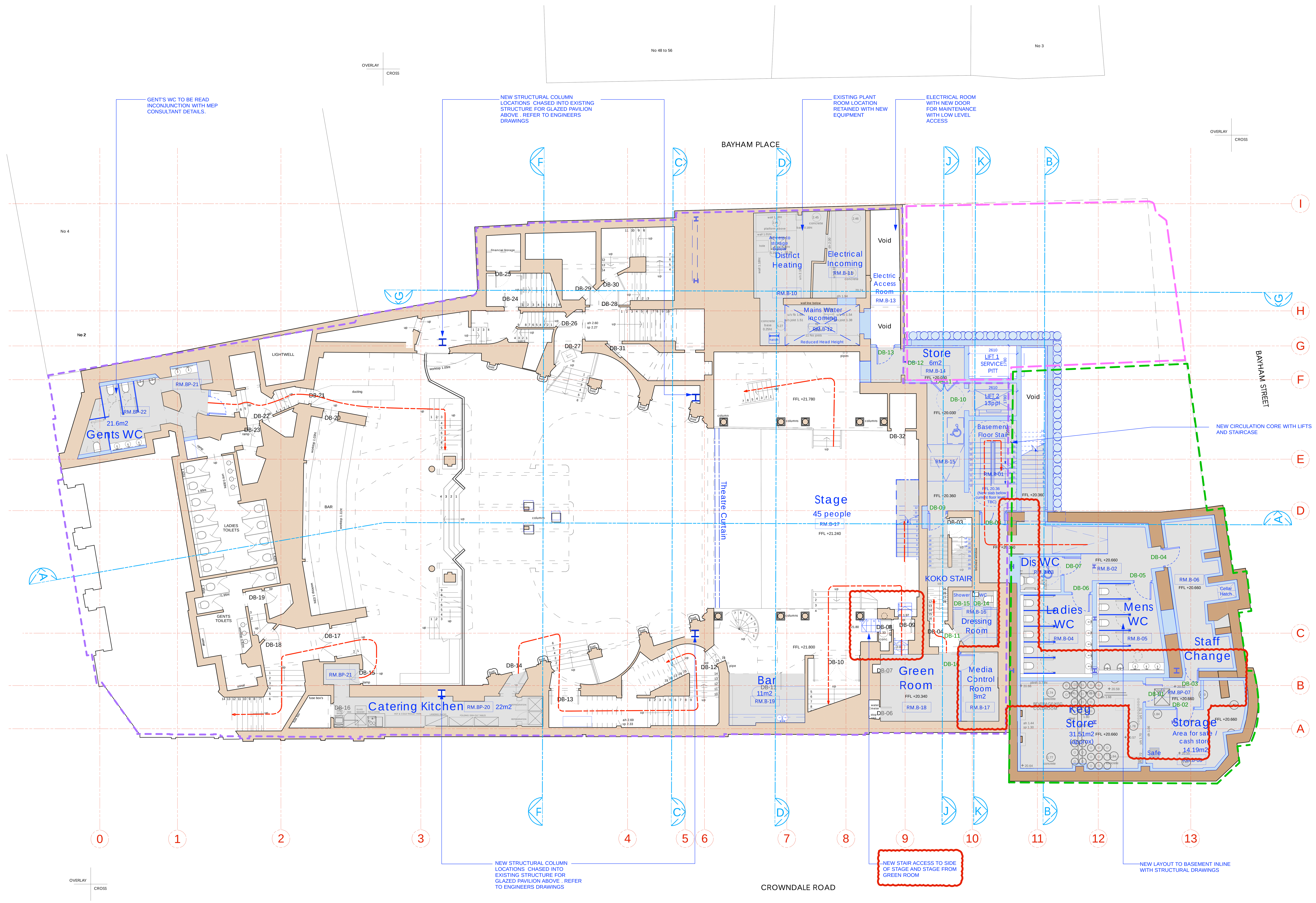
PLANNING

Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place
Camden, London

drawing title	scale	date
Proposed Sub Basement Plan	1:100 @ A1	13.04.17
	drawn FR/PC	checked DA
drawing number AHA/KKC/GA/098	revision -	



Only the original drawing should be relied upon. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.

All shop drawings to be submitted to the architect for comment prior to fabrication.

This drawing is to be read in conjunction with the Architect's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect.

Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

revision / date / amendments
- / --/--/-- / -

LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise

17.10.17

DRAFT

0 1 2 3 4 5 8m

PLANNING

Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title		
KOKO + Hope & Anchor + Bayham Place Camden, London		
drawing title: Proposed Basement Plan	scale: 1:100 @ A1	date: 13.04.17
	drawn: FR/PC	checked: DA
drawing number: AHA/KKC/ GA /099	revision: -	

Only the original drawing should be relied upon. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.

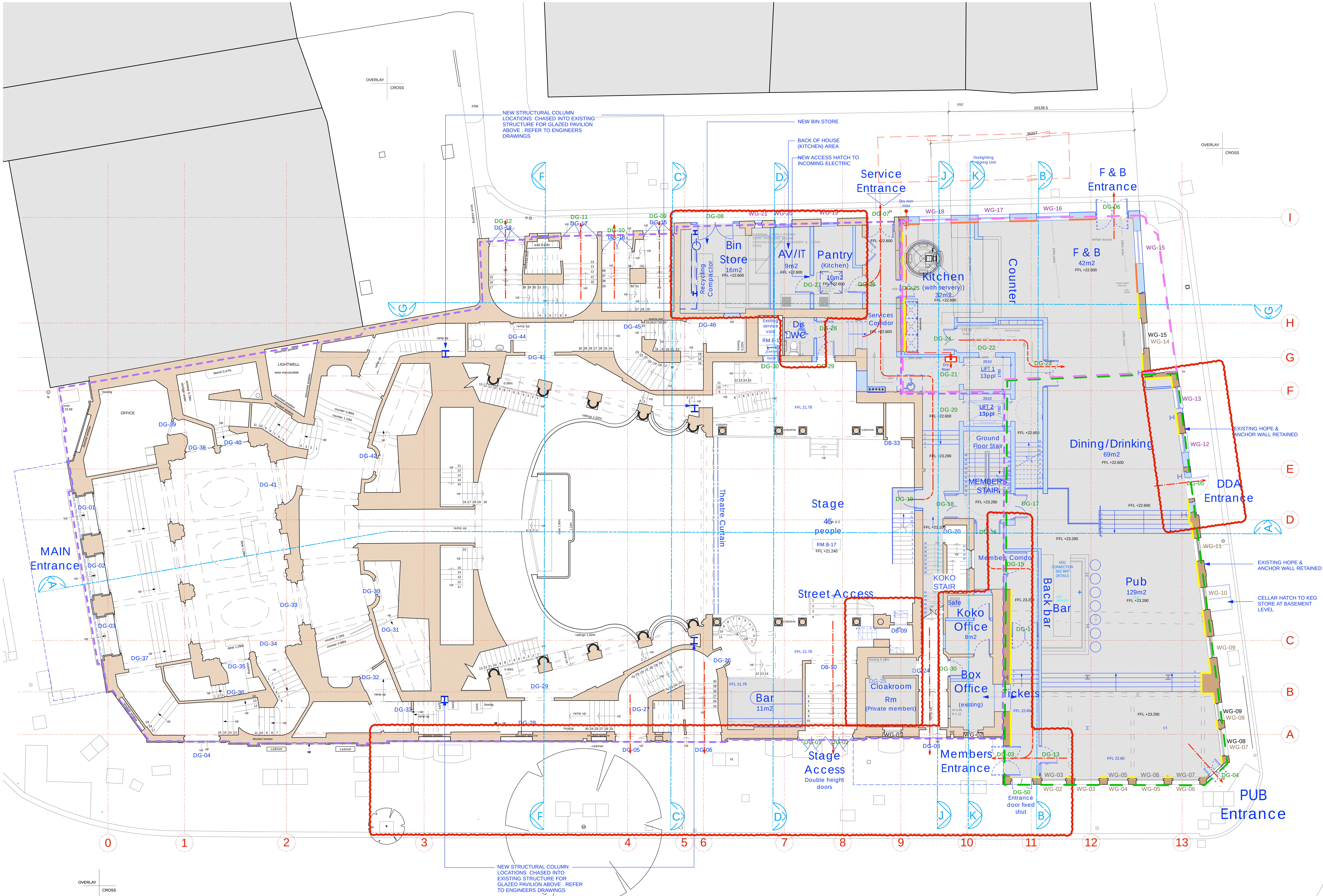
All shop drawings to be submitted to the architect for comment prior to fabrication.

This drawing is to be read in conjunction with the Architect's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect.

Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

revision / date / amendments

- / --/--/-- / -



LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise
- Original brickwork exposed
- New brickwork exposed

17.10.17

DRAFT

0 1 2 3 4 5 8m

PLANNING

Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place Camden, London

drawing title	scale	date
Proposed Ground Floor Plan	1:100 @A1	13.04.17
	drawn FR/PC	checked DA
drawing number AHA/ KKC /GA/100	revision -	

revision / date / amendments
- / --/--/-- / -

No 48 to 56

No 3

No 4

No 2

NEW STRUCTURAL COLUMN LOCATIONS CHASED INTO EXISTING STRUCTURE FOR GLAZED PAVILION ABOVE. REFER TO ENGINEERS DRAWINGS

Royal Box
FFL 26.80

Artist's Box

Theatre Curtain

Kitchen
79m2

Plant Room

Cold Store

FIRE CURTAIN

Charcole Grill

Pass Counter/ Bar

Dining
99m2

Dining
50m2

Function Room
62m2

Function Room
25m2

Artist's Gallery
40m2

RM.B-11 Stage

KOKO STAIR

WC

First Floor Stair

LIFT 1 13ppl

LIFT 2 13ppl

Blue Roof
101 m2

FACADE SET BACK 200mm FROM ADJACENT HOPE & ANCHOR FACADE

NEW STRUCTURAL COLUMN LOCATIONS CHASED INTO EXISTING STRUCTURE FOR GLAZED PAVILION ABOVE. REFER TO ENGINEERS DRAWINGS

NEW OPENING TO NEW ARTISTS GALLERY FOR ACCESS TO ADJACENT FUNCTION ROOM

GLAZED CANOPY FOR PRIVATE MEMBER ENTRANCE

HOPE AND ANCHOR FACADE AND FENESTRATIONS TO BE RETAINED. FENESTRATION TO BE EASE AND ADJUSTED.

LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise
- Blue Roof
- Original brickwork exposed
- New brickwork exposed

17.10.17

DRAFT

0 1 2 3 4 5 8m

PLANNING

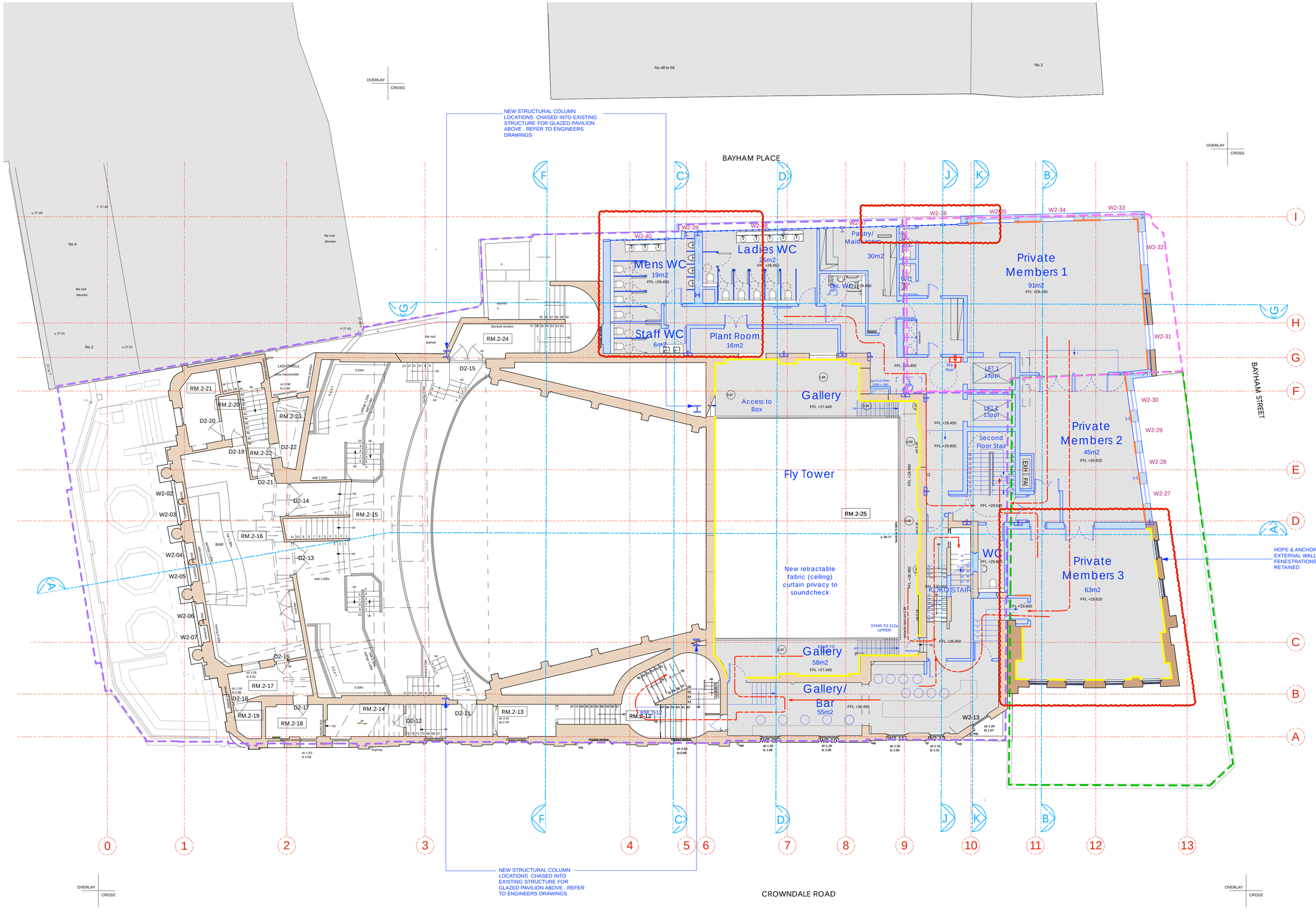
Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place
Camden, London

drawing title	scale	date
Proposed First Floor Plan	1:100 @ A1	13.04.17
	drawn FR/PC	checked DA
drawing number AHA/KKC/ GA /101	revision -	

revision / date / amendments
- / --/--/-- / -



LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise
- Blue Roof
- Original brickwork exposed
- New brickwork exposed

17.10.17

DRAFT

0 1 2 3 4 5 8m

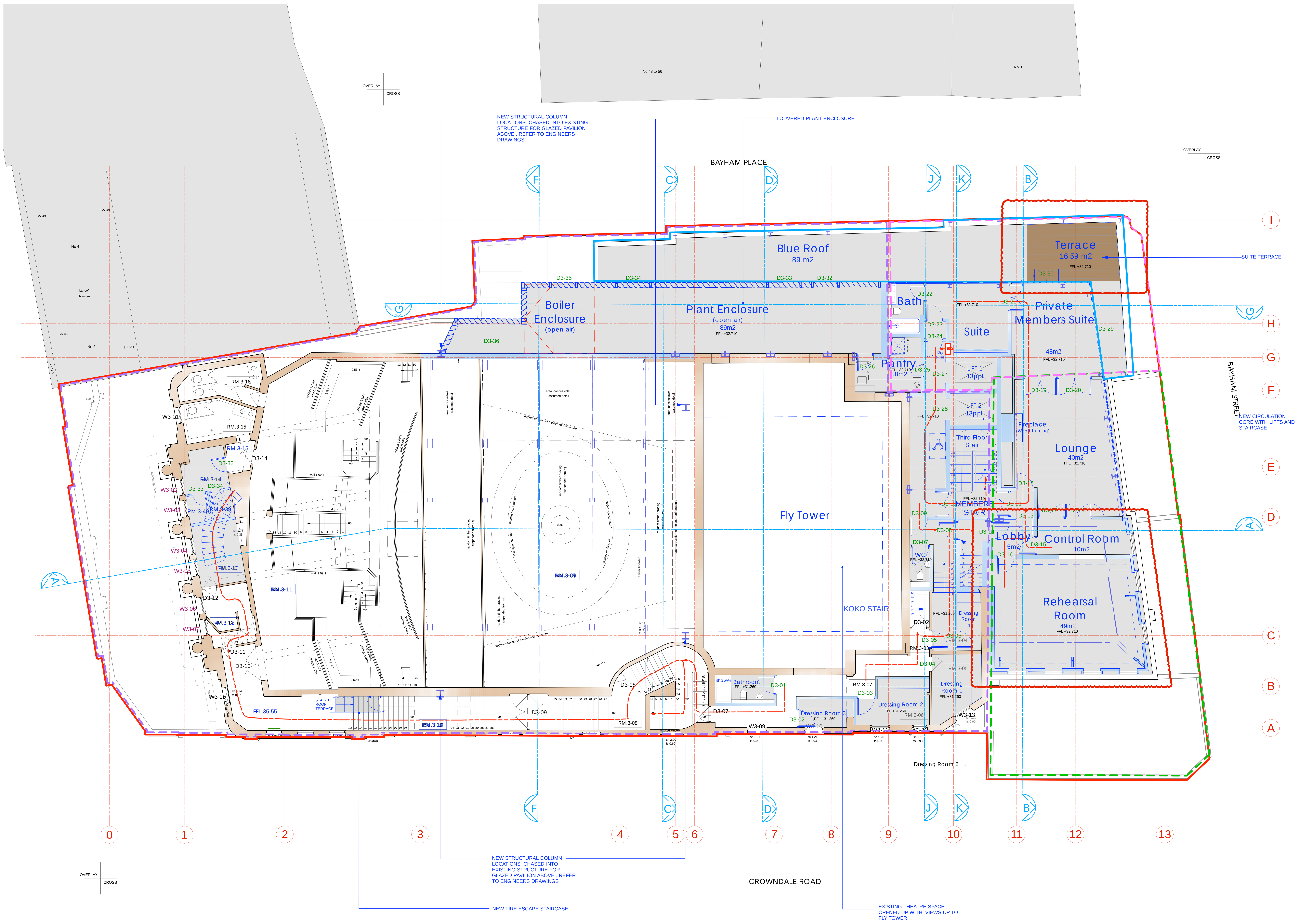
PLANNING

Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place
Camden, London

drawing title	scale	date
Proposed Second Floor Plan	1:100 @ A1	13.04.17
	drawn FR/PC	checked DA
drawing number AHA/KKC/GA/102	revision -	



Only the original drawing should be relied upon. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any shop drawings.

All shop drawings to be submitted to the architect for comment prior to fabrication.

This drawing is to be read in conjunction with the Architect's specification, bills of quantities / schedules, structural, mechanical & electrical drawings and all discrepancies are to be reported to the architect.

Do not scale from this drawing. Dimensions are in millimetres unless otherwise stated.

revision / date / amendments
- / --/--/-- / -

LEGEND

- Proposed Works
- Existing Building Fabric KOKO née Camden Palace Theatre (1900)
- Existing Building Fabric Hope & Anchor (approx. 1850)
- Existing Building Fabric Bayham Place (from 1875)
- Existing Modern Building Fabric Bayham Place (from 2006)
- Building Fabric to be demolished
- Demolition of Flooring / Elevation / Wall
- Proposed Excavation
- Remove and retain in alternate location
- Retain and protect existing
- Retain, make good, ease and adjusted
- Means of escape Route
- Private Members Route
- Koko Customer Route
- Public Route
- Artist Route
- Proposed Riser
- Proposed Risers Above
- RM.4-06 Room Number
- D4-02 Door Number
- W4-05 Window Number
- Hope & Anchor Demise
- Koko Demise
- 1 Bayham Street & 65 Bayham Place Demise
- Blue Roof

17.10.17

DRAFT

0 1 2 3 4 5 8m

PLANNING

Archer Humphryes Architects

Basement
Central House
142 Central Street
London, United Kingdom
EC1V 8AR
T : +44 (0) 20 7251 8555

project title
KOKO + Hope & Anchor + Bayham Place
Camden, London

drawing title	scale	date
Proposed Third Floor Plan	1:100 @ A1	13.04.17
	drawn FR/PC	checked DA
drawing number AHA/ KKC / GA / 103	revision -	