Providing Ground Solutions

Mr Jacob Sorkin

44 Dartmouth Park Road, London

Basement Impact Assessment – Screening Stage 1

January, 2015

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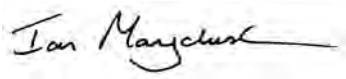
Approved	Ian Marychurch, Director *MSc BSc CEng MICE CGeol FGS CMgr MCMI MIoD Dip IoD*		
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Contents

FIGURES

APPENDICES

1. INTRODUCTION

It is proposed to develop 44 Dartmouth Park Road in the London Borough of Camden (LBC). This will include the construction of a basement beneath part of the existing building footprint, and the construction of infill extensions on the ground floor and first floor at the rear of the building. The new basement floor slab will be formed at a depth of generally 2.6m below existing ground floor level (mbgl). Card Geotechnics Limited (CGL) has been instructed to undertake a *Screening Assessment* for the proposed development to determine its potential effect on nearby structures and services, surface water runoff and groundwater flow.

The London Borough of Camden's guidance document *"CPG4, Basements and Lightwells*[1]*"*, requires a BIA to be undertaken for new basements in the Borough and sets out 5 stages for a BIA to "enable the Borough to assess whether any predicted damage to neighbouring properties and the water environment is acceptable or can be satisfactorily ameliorated by the developer". The five stages are set out below:

1. Screening
2. Scoping
3. Site investigation
4. Impact assessment
5. Review and decision making

This report is intended to address the screening stage of the BIA. It identifies key issues relating to land stability, hydrogeology and hydrology as part of the screening process (Stage 1).

[1] Camden Planning Guidance, CPG4, Basements and Lightwells, September 2013.

2. SITE CONTEXT

2.1 Site location

The site is located at 44 Dartmouth Park Road, London NW5 1SN. The National Grid Reference for the approximate centre of the site is 528764E, 186099N.

The site location is shown in Figure 1.

2.2 Site layout

The site is broadly rectangular in plan with dimensions some 26m in length and 11m in width, with the length orientated in the north-west to south-east orientation. The existing building comprises a part two storey part single storey detached property with a rear single storey extension. The building is broadly rectangular in shape, with dimensions 13.5m in length and 11m in width. A paved garden area exists to the front of the building and is separated from the pavement by a landscaped hedge. A garden area exists to the rear of the property and is separated from York Rise to the west by a brick wall. Street level is approximately 0.40m below ground floor and garden level.

The building fronts onto Dartmouth Park Road to the south-east of the site, with a pavement approximately 3m in width separating the site from the carriageway of Dartmouth Park Road. The north-east of the site is bounded a narrow alleyway approximately 1m in width, beyond which is 46 Dartmouth Park Road. To the north-west, a single storey structure of No. 24A York Rise is located adjacent to the north-western boundary wall of the site beyond the garden. To the south-west the site is bounded by York Rise.

A brief review of local planning applications suggests that the nearest neighbouring structure, No. 46 Dartmouth Park Road, has not recently developed an existing lower ground level or basement level. Lower ground floor levels are present on the lower side of Dartmouth Park Road including Nos. 40 and 42 Dartmouth Park Road.

The site lies approximately 115m east of the *River Fleet*, one of London's historical 'lost' rivers[2], and some 260m north of a major sewer. The *River Fleet* is recorded to have flowed

[2] Barton, N. (1983) *The Lost Rivers of London* Hertfordshire Historical Publications

in a north to south orientation, originating from the *Highgate Ponds* area some 1.5km north-west of the site. Tufnell Park Underground Station and the London Underground Northern Line are located approximately 440m south-east of the site; the Northern Line runs in a north-east to south-west direction.

A site layout plan is presented in Figure 2.

2.3 Topography

Ordnance Survey topographical mapping records a spot height elevation of 53.4 metres above Ordnance Datum (mOD) approximately 70m north-east of the site, located within the centre of Laurier Road in front of No. 36 Laurier Road. An elevation of 47.8mOD is recorded at the junction of York Rise and Chetwynd Road approximately 100m to the south of the site.

Locally the highest point is 98mOD recorded at Parliament Hill approximately 1.1km to the west, with local ground levels increasing towards this point. The topography reduces in level to the south-east of the site. The site is situated on a downwards gradient sloping towards the east.

Figure 16 of the Camden Geological, Hydrogeological and Hydrological Study[3] (CGHHS) records that the site is not located on a slope of greater than 7 degrees. Figure 17 of the CGHHS records the site as not being located within an area of significant landslide potential.

Shallow valleys are recorded some 320m west, representing relict river channels of the *River Fleet*.

2.4 Proposed development

It is proposed to excavate predominantly beneath the footprint of the property to form a new basement level at approximately 2.6mbgl, with the overall basement excavation being 3.2m from ground floor level. The basement will be constructed using traditional underpinning techniques with concrete underpins constructed in sequence typically 3m high. The underpin walls are likely to be between 300mm and 600mm thick and would be

[3] Ove Arup and Partners. (2010) Camden Geological, Hydrogeological and Hydrological Study: Guidance for subterranean development. London Borough of Camden.

supported during construction by the provision of temporary propping at top, centre, and bottom of the underpin to restrict movement and provide temporary support.

The basement will be approximately 1m offset from the No. 46 Dartmouth Park Road and will infill an existing section of garden over an area of some 2.7m x 4.3m in plan. A Conceptual Site Model for the proposed development is presented in Figure 3.

Plans of the proposed development are provided in Appendix A.

2.5 Site History

A brief review of the site's historical development has been undertaken using available literature and CGL's in-house resources. The findings are summarised as follows:

Mapping dated c.1870 records the site as unoccupied and part of agricultural land. Residential housing is present to the south and west of the site; Dartmouth Park Road and Grove Road are indicated to the south-west of the site but Dartmouth Park Road does not extend as far as the site. The *Tottenham and Hampstead Junction Railway* is recorded some 250m south of the site. A *Reservoir* is recorded approximately 250m north east of the site.

Mapping dated c.1890 shows the building of No. 44 Dartmouth Park Road to be in the present day layout with a large rear garden area. This garden area is shown to have been reduced in size c.1970 and three small buildings are recorded adjacent to the rear garden of No. 23 Laurier Road. An additional structure was constructed adjacent to the rear garden of No. 44 Dartmouth Park Road between this period and the present day.

No. 44 Dartmouth Park Road is not recorded as having sustained damage during Second World War bombings[4]. The nearest V1 flying bomb is recorded on Dartmouth Park Avenue some 250m north-east of the site, however the area has since been redeveloped into residential housing. The risk of unexploded ordnance (UXO) on site is considered to be low.

[4] London Topographical Society (2005). *Bomb Damage Maps 1939-1945*. The London City Council.

2.6 Published geology

The British Geological Survey (BGS) sheet[5] of the area indicates the site to be underlain by the London Clay Formation with no record of superficial deposits.

The London Clay Formation is an over-consolidated firm to very stiff, becoming hard with depth, fissured, blue to grey silty clay of low to very high plasticity. The upper and lower parts may contain silty or fine grained sand partings. The stratum may also contain laminated, structured, nodular claystone and rare sand partings. Crystals of gypsum (Selenite) are often present within the weathered London Clay Formation. The stratum is generally horizontally bedded.

BGS basal contour mapping demonstrates the base of the London Clay Formation is present below the site to an elevation of approximately -10.0mOD, suggesting an overall thickness of approximately 60.0m.

2.7 Unpublished geology

A number of historical British Geological Survey (BGS) borehole records exist between 350m and 500m of the site boundary. Selected records and an indicative location plan are provided in Appendix B. The strata encountered within the boreholes are summarised in Table 1:

Table 1. Summary of BGS Borehole Records

Stratum	Level at top of stratum (mbgl)[a]	Typical thickness (m)
Made Ground	0.0	0.3 to 4.1
London Clay Formation	0.0 to 4.1	71.9[b]
Lambeth Group	71.9	18.7
Thanet Formation	93.7	5.2
Upper Chalk	135.3	Proven to 164.3

a. mbgl = metres below ground level
b. Thickness determined in *TQ28NE14 only, located 500m west of the site.*

Borehole records indicate the geology of the surrounding area to consist of the London Clay Formation, underlain by the Lambeth Formation, Thanet Sand and Upper Chalk at depth.

[5] British Geological Survey Sheet 256 (1993) *North London – Solid and Drift Geology* 1:50,000. Keyworth, BGS.

The Made Ground was generally found to comprise concrete and hard-core over soft to firm brown silty clay with occasional organic material, brick fragments and ash over the London Clay Formation. The London Clay was described as firm to stiff brown fissured silty clay with partings of silty fine sand and crystals of gypsum.

Groundwater was recorded in BGS borehole *TQ28NE14* at a depth of 64mbgl towards the base of the London Clay.

2.8 Hydrogeology and hydrology

The Environment Agency[6] (EA) has produced an aquifer designation system consistent with the requirements of the Water Framework Directive. The designations have been set for superficial and bedrock geology and are based on the importance of aquifers for potable water supply, and their role in supporting surface water bodies and wetland ecosystems.

The site does not overlie a designated superficial or bedrock aquifer and is noted as being underlain by The London Clay Formation, designated a 'non-productive stratum' by the Environment Agency.

The site does not fall within a Groundwater Vulnerability Zone as indicated by EA mapping. The site is not located within a groundwater protection zone (SPZ).

The closest significant bodies of surface water are the *Highgate Ponds* located 790m to the north-west. Environment Agency mapping indicates the site is within a zone at of risk of flooding from reservoirs, and that York Rise and streets to the south-west of the site are at risk from surface water flooding.

The site lies approximately 115m east the historical *River Fleet*. Reference to Barton's 'Lost Rivers of London' indicates that the historical *River Fleet* previously flowed south and south-east from Hampstead Heath into the River Thames at Blackfriars. The former watercourse of the *River Fleet* is no longer open, having been culverted and constrained, however, owing to local topography it is considered that surface waters will drain towards the line of watercourse in a general southeast trend. This is illustrated in Figure 11 of the Guidance for Subterranean Development[3].

[6] http://www.environment-agency.gov.uk (accessed October 2014)

As the London Clay Formation is identified below the site, it is assumed this forms an impermeable boundary and will form the base of an overlying groundwater table where any permeable superficial deposits permit the transit of groundwater.

Figure 15 of the Guidance for Subterranean Development[3] indicates Dartmouth Park Road was not flooded during extreme rainfall events in 1975 and 2002, however, York Rise, directly adjacent to No. 44 Dartmouth Part Road was subject to flooding in 1975.

3. STAGE 1 - SCREENING

3.1 Introduction

A screening assessment has been undertaken based on structured guidance presented in Camden Borough Council's CPG4. Responses to the questions posed by the flowcharts are presented below and where 'yes' or 'unknown' may be simply answered with no analysis required, these answers have been provided.

3.2 Subterranean (Groundwater) Screening Assessment

This section answers questions posed by Figure 1 in CPG4:

Table 2. Responses to Figure 1, CPG4

Question	Response	Action required
1a. Is the site located directly above an aquifer?	No. The site is underlain by the London Clay Formation, designated an unproductive stratum.	None
1b. Will the proposed basement extend beneath the water table surface?	No.	None
2. Is the site within 100m of a watercourse, well or potential spring line?	No.	None
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No.	None
4. Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	Yes. A minor increase is proposed in the proportion of hard-standing.	None (see below)
5. As part of site drainage, will more surface water than at present be discharged to ground (e.g. via soakaways and/or SUDS)?	No. Soakaways are not likely to prove effective in the London Clay due to low infiltration rates.	None

Question	Response	Action required
6. Is the lowest point of the proposed excavation close to or lower than, the mean water level in any local pond or spring-line?	No.	None

The proposed development is underlain by the London Clay Formation, designated an 'unproductive stratum' by the EA. A review of available data has been conducted to determine groundwater conditions on site and suggests that groundwater is present at the base of the London Clay. Shallow perched groundwater may be encountered within Made Ground or resting above the surface of the London Clay Formation, however, this is not expected to be laterally pervasive. A minor increase in the proportion of hard-standing is proposed to the rear of the property where an infill extension is to be constructed, which will not extend beyond the rear wall of the existing extension. This minor increase in hard-standing is not considered to significantly affect run-off/surface attenuation characteristics.

3.3 Slope/Land Stability Screening Assessment

This section answers questions posed by Figure 2 in CPG4.

Table 3. Responses to Figure 2, CPG4

Question	Response	Action required
1. Does the site include slopes, natural or man-made, greater than about 1 in 8?	No.	None
2. Will the proposed re-profiling of the landscaping at site change slopes at the property boundary to greater than about 1 in 8?	No.	None
3. Does the development neighbour land including railway cuttings and the like with a slope greater than about 1 in 8?	No.	None

Question	Response	Action required
4. Is the site within a wider hillside setting in which the general slope is greater than about 1 in 8?	No.	None
5. Is the London Clay the shallowest stratum on site?	Yes. The site is directly underlain by the London Clay Formation; however, the basement will not share a party wall and heave/settlement will be negligible assuming good workmanship and a well-constructed scheme are carried out.	None
6. Will any trees 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.	None
7. Is there a history of shrink/swell subsidence in the local area and/or evidence of such at the site?	Unknown. The London Clay is shallow so there may be shrink/swell, however the basement will not be affected by or be influenced by this.	None
8. Is the site within 100m of a watercourse or a potential spring line?	No.	None
9. Is the site within an area of previously worked ground?	No.	None
10. Is the site within an aquifer?	No.	None
11. Is the site within 50m of the Hampstead Heath ponds?	No.	None
12. Is the site within 5m of a highway or pedestrian right of way?	Yes. Dartmouth Park Road and York Rise are present immediately to the south-east and south-west of the site; however construction works are unlikely to impact the highway assuming good workmanship and well-constructed scheme are carried out.	None (see comments below)
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring	Yes. It is understood that the nearest neighbouring property, No. 46 Dartmouth Park Road, does not currently have basement	None (see comments below)

Question	Response	Action required
properties?	levels; however, the basement will not share a party wall and heave/settlement will be negligible assuming good workmanship and well-constructed scheme are carried out.	
14. Is the site over (or within the exclusion zone of) any tunnels?	No.	None

A review of local topography and reference to Figure 16 of CGHHS[3] suggests that local and wider hillslopes do not exceed a gradient of 1 in 8 (approximately 7˚).

Figure 17 of the Study indicates the site is not located in an area of landslide potential. No trees are to be felled as part of the proposed works.

The construction of the basement will significantly increase the differential depth of foundations between No. 46 and No. 44, however it is noted that the foundations of No. 46 are offset by approximately 1m and therefore will not be directly underpinned. Given the depth of the new basement (approximately 3m) and the thickness of the underpin walls (typically 300mm to 600mm), deflections of the underpin walls are likely to be negligible and would not contribute to ground movements adjacent to the construction. Similarly, heave displacements over the short and long term would be expected not to exceed between 2mm to 5mm around the basement perimeter and would therefore not affect the structure of No. 46.

3.4 Surface Flow and Flooding Screening Assessment

This section covers the main surface flow and flooding issues as set out in Figure 3, CPG4.

Table 4. Responses to Figure 3, CPG4

Question	Response	Action required
1. 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. Existing drainage routes are unchanged.	None

2. Will the proposed development result in a change in the proportion of hard surfaced/paved external areas?	Yes. A minor increase is proposed in the proportion of hard-standing.	None (see below)
3. Will the proposed basement result in a change to the profile of the inflows of surface water being received by adjacent properties or downstream watercourses?	No.	None
4. Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No. The proposed excavation would remove the majority of any Made Ground that may be present on site and as such will not impact on water quality.	None
5. Is the site in an area known to be at risk from surface flooding, or is it at risk from flooding because the proposed basement is below the static water level of a nearby surface water feature?	No. Site is not within an area at risk from flooding, however, Flood Risk Assessment to be undertaken by others as York Rise (directly to the west of the site) was subjected to flooding in 1975	Flood Risk Assessment (undertaken by others).

The proposed development will remain a residential property, therefore no significant change of use is anticipated that may increase discharge loads to the existing sewer and drainage systems. A minor increase in the proportion of hard-standing is proposed to the rear of the property where an infill extension is to be constructed, which will not extend beyond the rear wall of the existing extension. This minor increase in hard-standing is not considered to significantly affect run-off/surface attenuation characteristics. The site is not recorded to be within an area at risk from surface water flooding, however, York Rise which is located adjacent to No. 44 Dartmouth Park Road is recorded to have flooding during 1975 and a Flood Risk Assessment is to be undertaken by others.

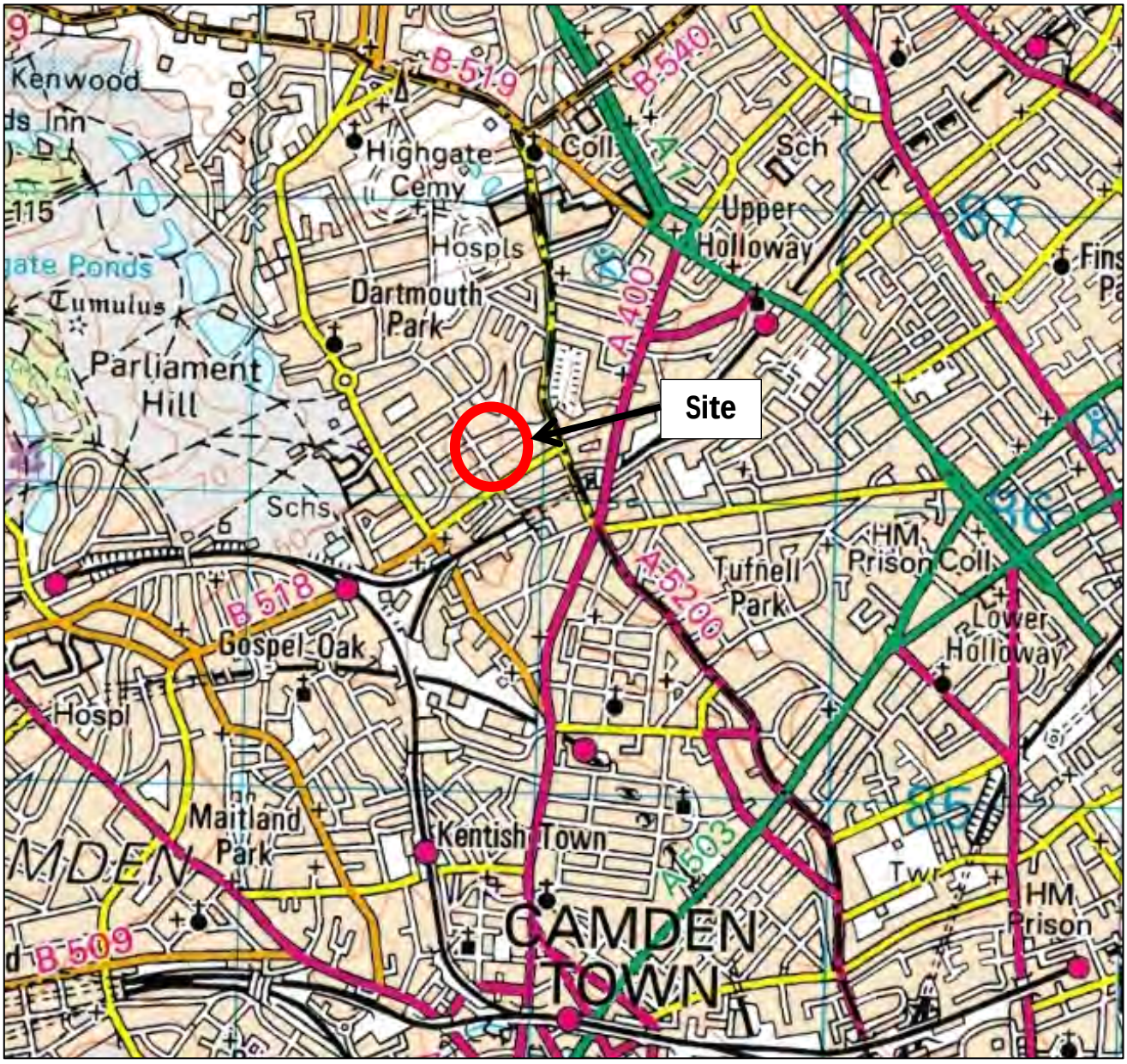
4. CONCLUSIONS

The findings of the screening assessment are summarised below:

Table 5. Summary of Basement Impact Assessment requirements

Item	Description
1.	*Groundwater flow* None – The basement will be constructed entirely within London Clay and therefore groundwater is not expected to be encountered. Given the relatively impermeable nature of the London Clay, infiltration will be negligible.
2.	*Slope (land stability)* None – The basement is partial, will be constructed within the stable London Clay and does not directly underpin party walls. No impact is associated to neighbouring structures assuming good workmanship and well-constructed scheme are carried out.
3.	*Surface flow and flooding* The basement will be constructed predominantly beneath the existing building. Therefore run-off/surface attenuation characteristics are not significantly affected. Dartmouth Park Road is not located within an area at risk from surface water; however, York Rise directly to the south-west of the site is within an area at risk from surface water. Therefore a Flood Risk Assessment may be deemed necessary by the Local Authority.
4.	*Cumulative impacts* There are no recorded basements directly adjacent to the proposed basement, and as groundwater flow would not be expected within the London Clay, it is expected that cumulative impacts from the construction of the basement may be negligible.

FIGURES



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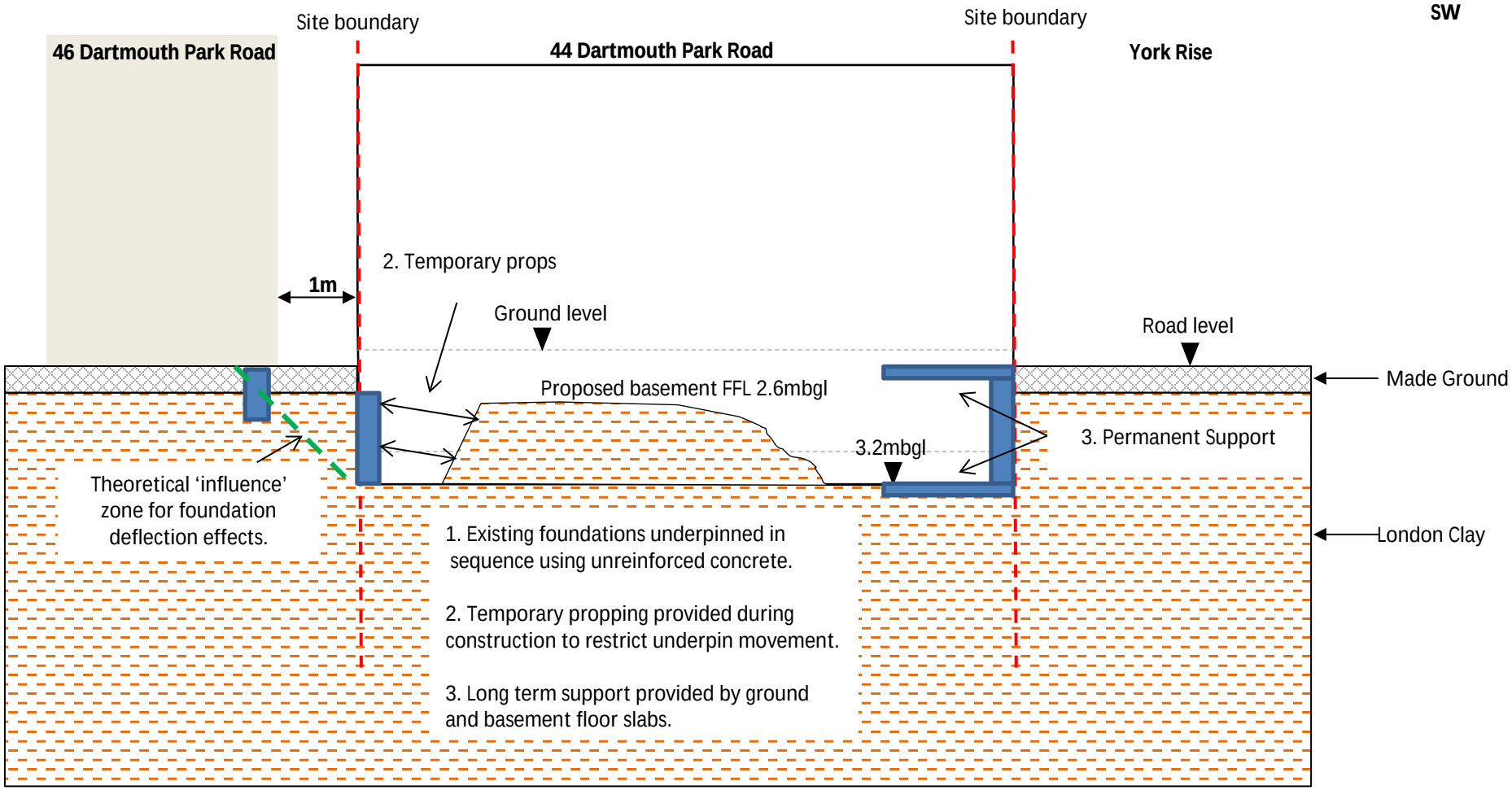
Client	Project	Job No
Mr Jacob Sorkin	**44 Dartmouth Park Road, London**	**CG/18249**
CGL	Title: **Site location plan**	**Figure 1**

Client	Project	Job No
Mr Jacob Sorkin	**44 Dartmouth Park Road, London**	**CG/18249**
CGL	Title **Site layout plan**	**Figure 2**

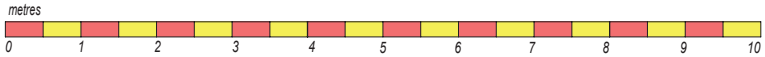


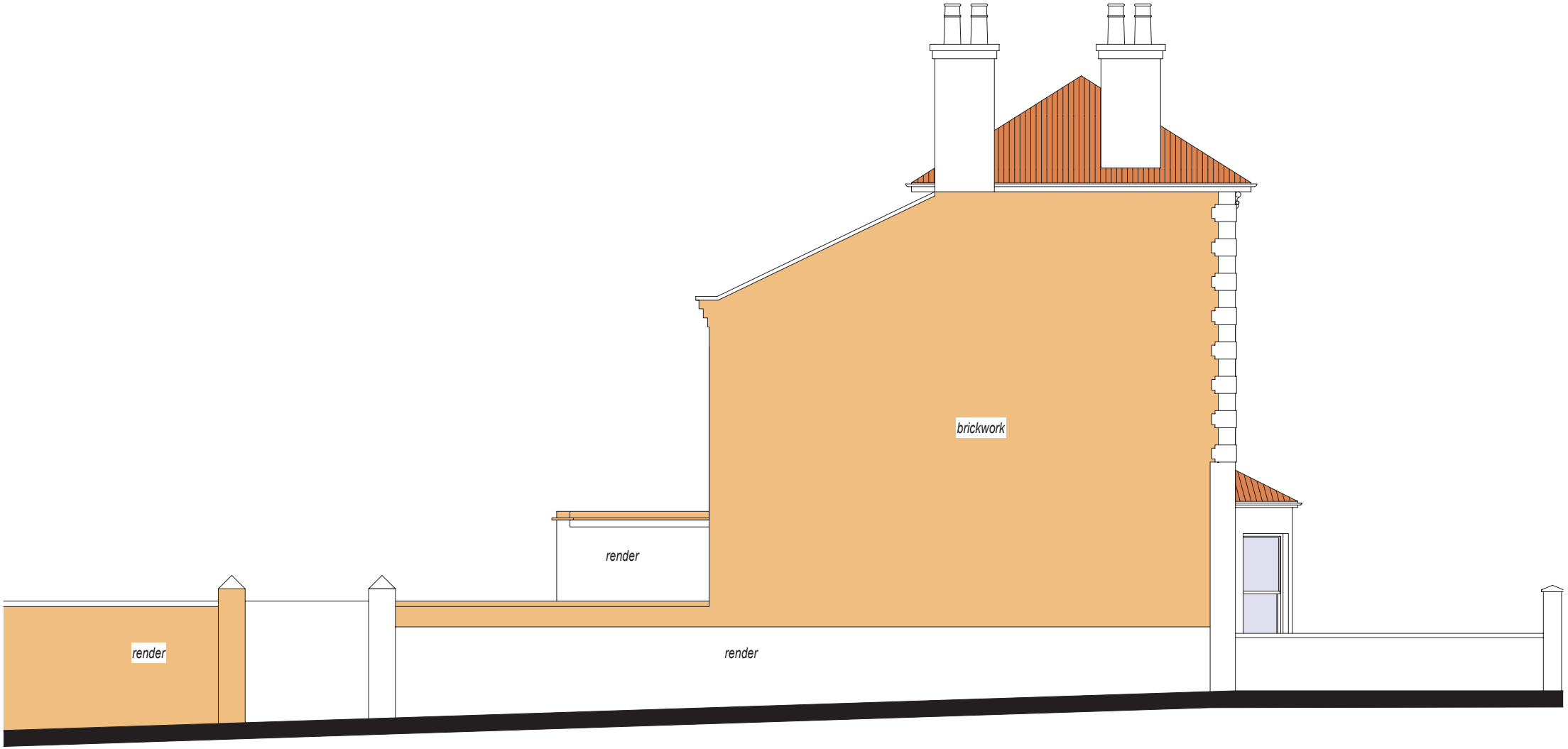
Client	Project	Job No
Mr Jacob Sorkin	**44 Dartmouth Park Road, London**	**CG/18249**
CGL	Title: **Conceptual site model**	**Figure 3**

APPENDIX A

Proposed development plans and sections

FRONT ELEVATION as existing





FLANK ELEVATION to York Rise....as existing

metres

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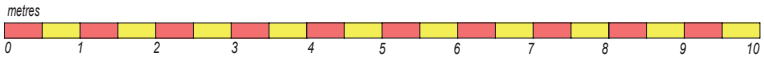
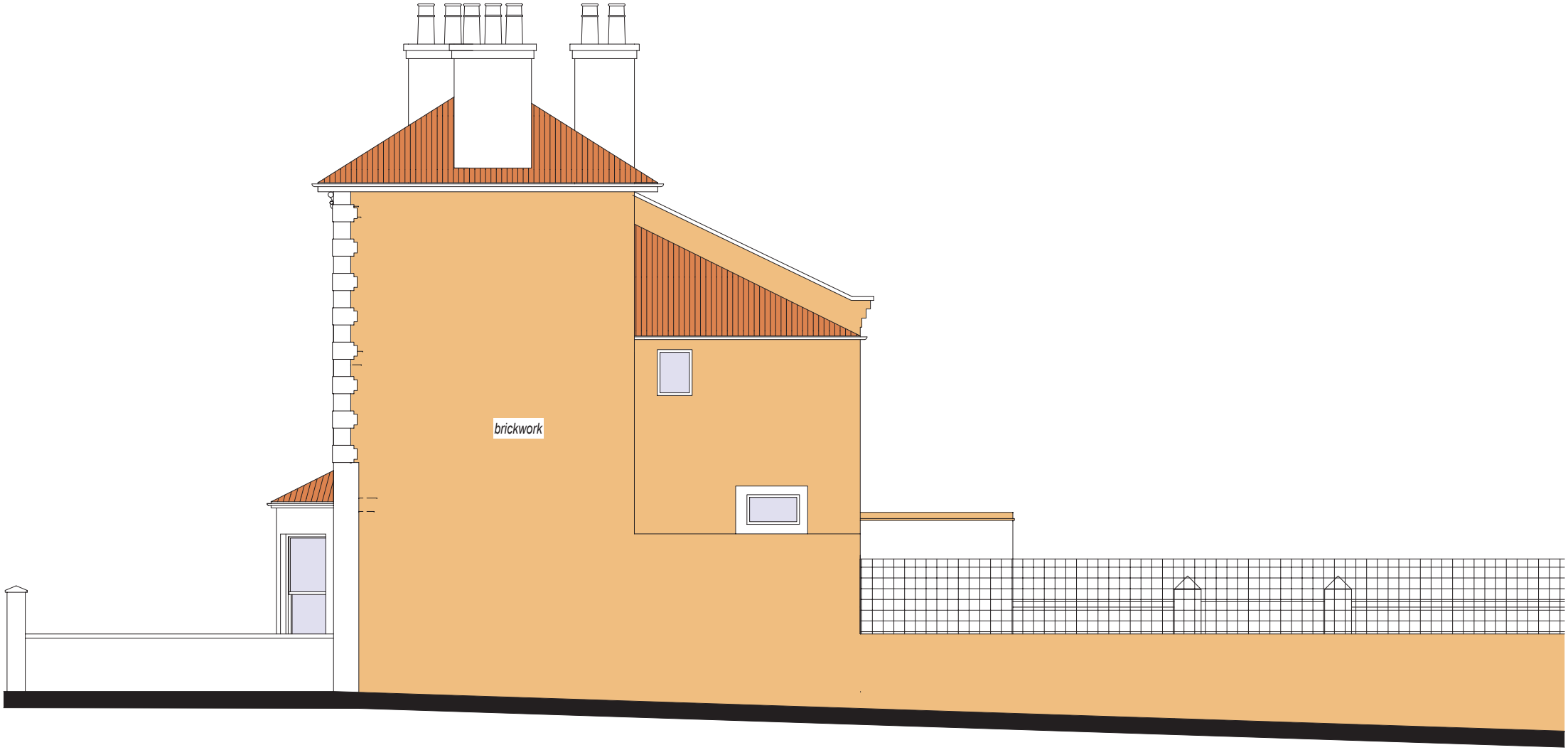
REAR ELEVATION as existing





FLANK ELEVATION as existing

metres
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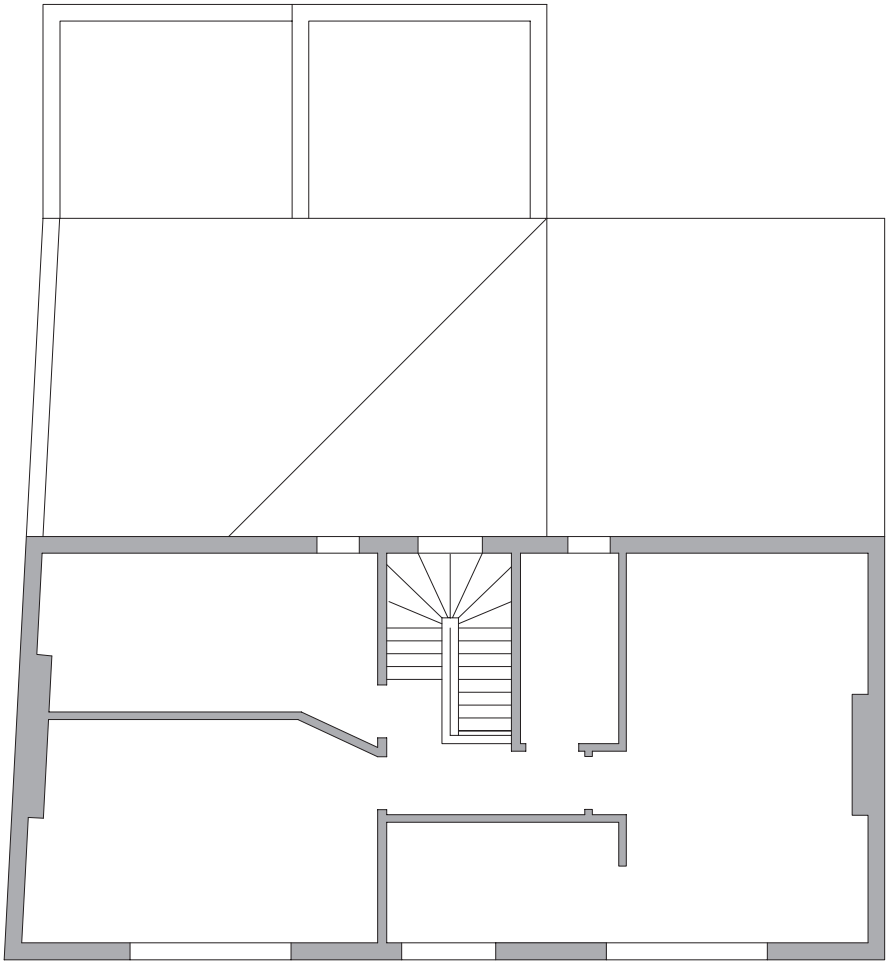
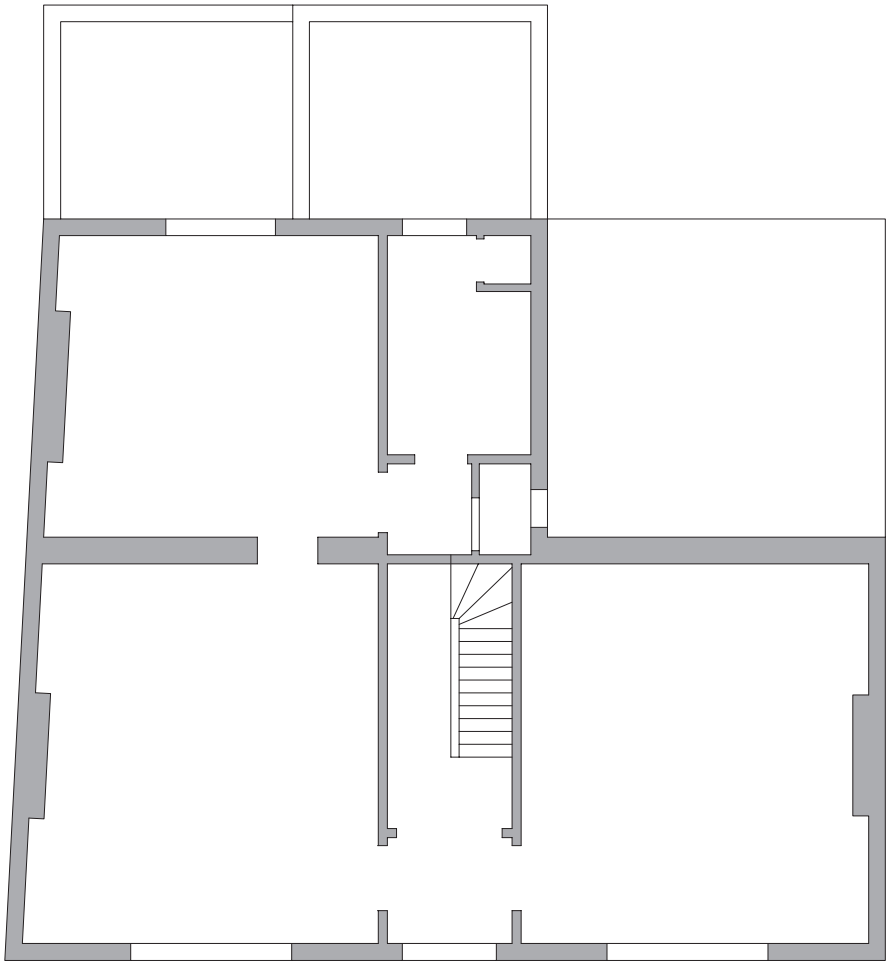


FIRST FLOOR existing GIA 56m2



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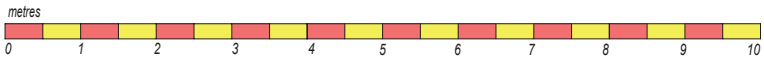
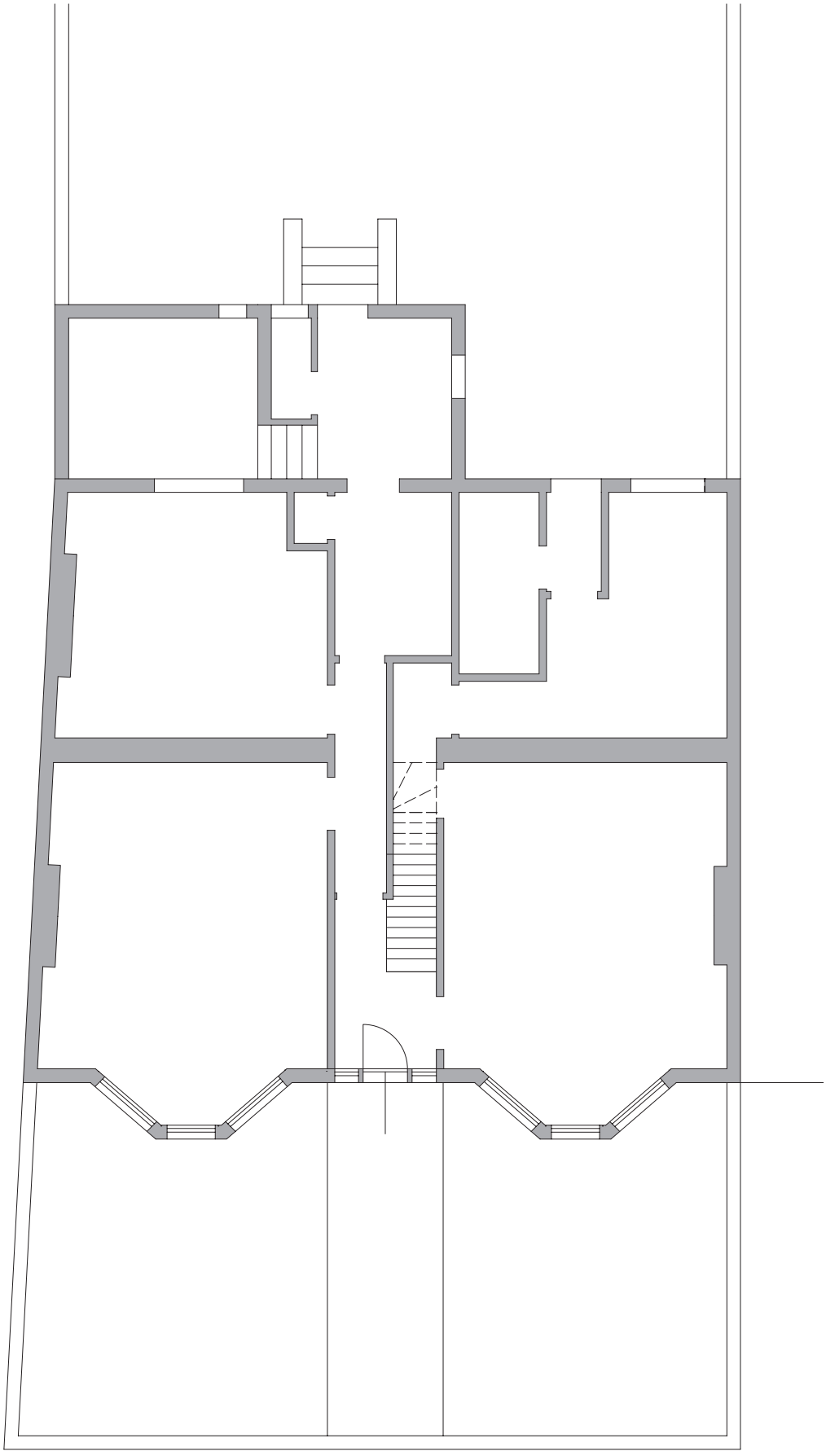
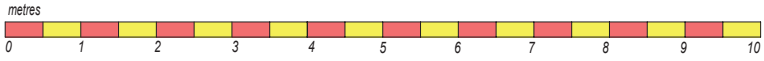




GROUND FLOOR existing GIA 122m2



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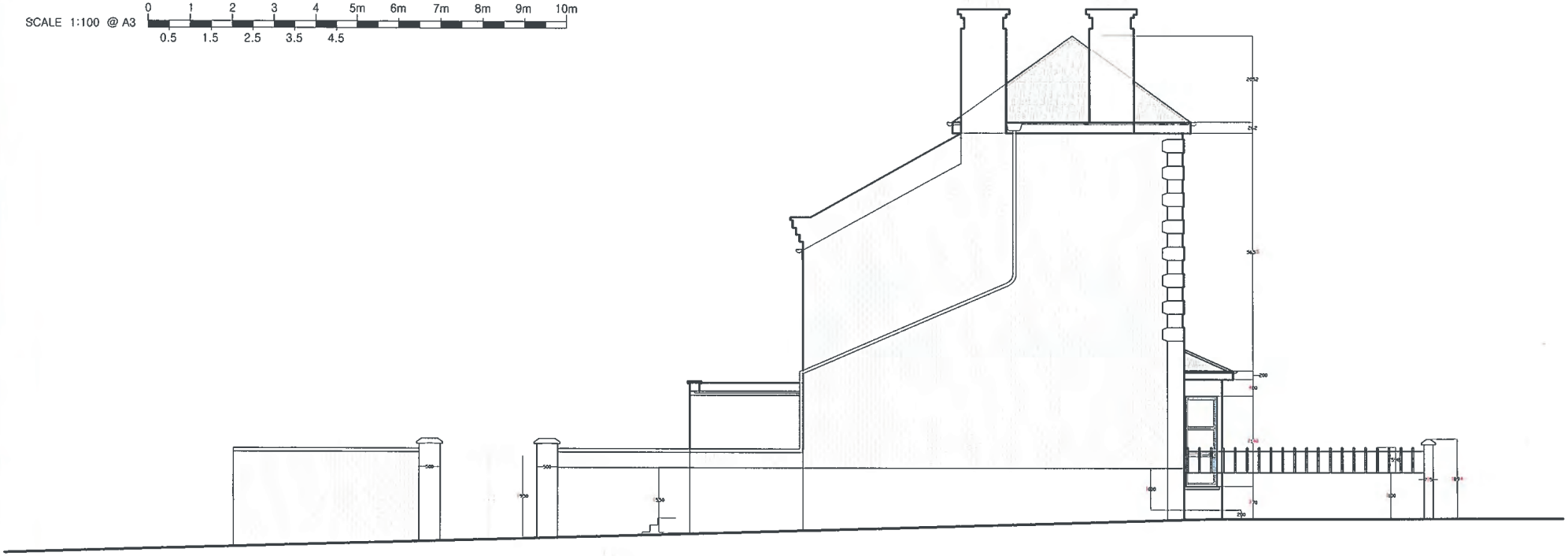
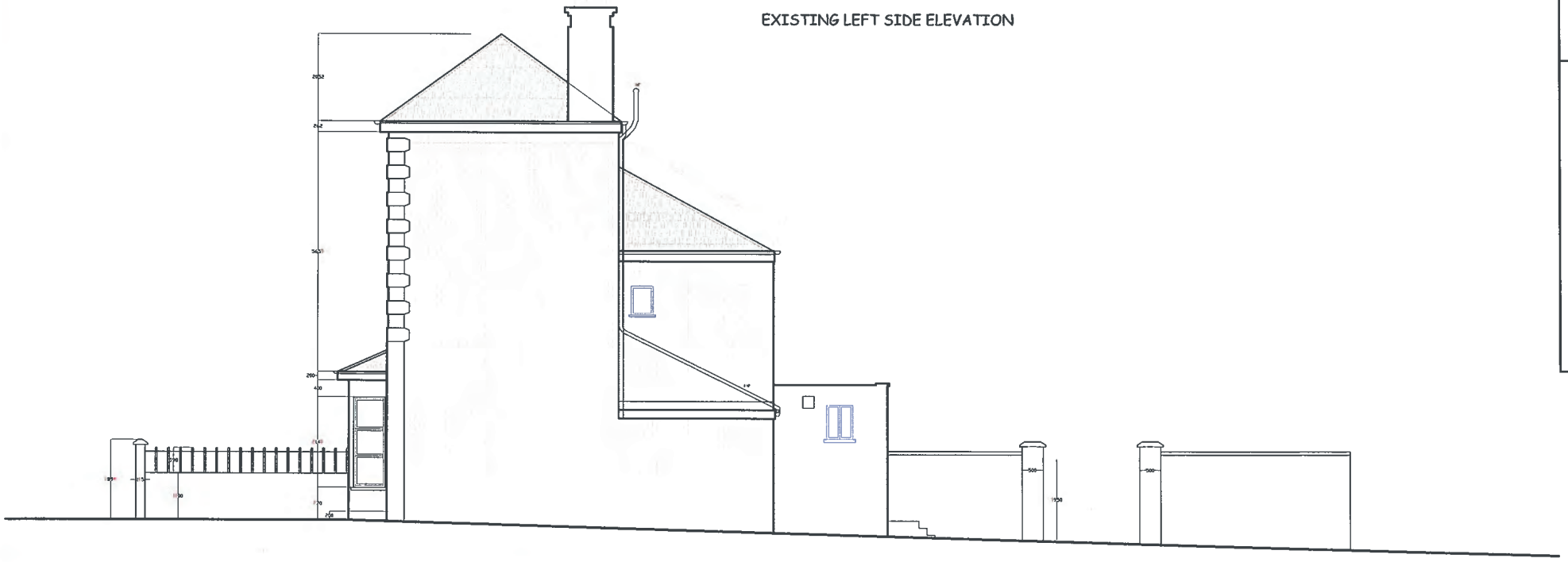


EXISTING LEFT SIDE ELEVATION



EXISTING RIGHT SIDE ELEVATION

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Date: May 2014	CAD & Drawn by: BB
Drawn & Checked by: ER	File name: T & B71 May 2014

Project Address: 44 DARTMOUTH PARK ROAD
LONDON
NW5 1SN

Client: MR GEORGE GEORGIOU

Drawing title: EXISTING SIDE ELEVATIONS

Project title: INTERNAL ALTERATION

E RILEY ASSOCIATES
Chartered Surveyor
Tel:020 8886 4693 Mobil: 07958 035 096

SCALE 1:100 @ A3

0 1 2 3 4 5m 6m 7m 8m 9m 10m

0.5 1.5 2.5 3.5 4.5

EXISTING REAR ELEVATION

EXISTING FRONT ELEVATION

ALL DIMENSIONS TO BE CHECKED ON SITE ONLY TO BE SCALED FOR PLANNING AND BUILDING REGULATIONS

Ref.	Revision	Date	By
.			

E RILEY ASSOCIATES
Chartered Surveyor
Tel:020 8886 4693 Mobil: 07958 035 096

Project title: INTERNAL ALTERATION

Project Address: 44 DARTMOUTH PARK ROAD
LONDON
NW5 1SN

Client: MR GEORGE GEORGIOU

Drawing title: EXISTING FRONT & REAR ELEVATIONS

Date: May 2014

CAD & Drawn by: BB

Drawn & Checked by ER

File name: T & B71 May 2014

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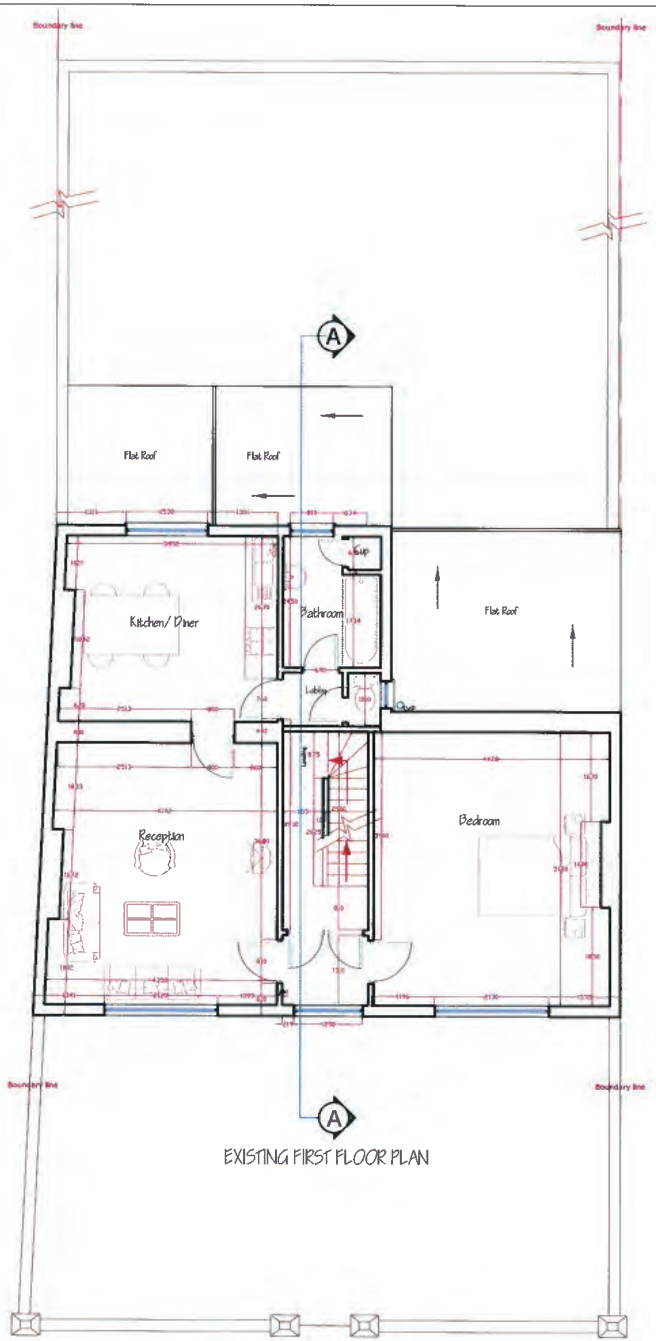
Drawing No: 03/06



EXISTING FIRST FLOOR PLAN

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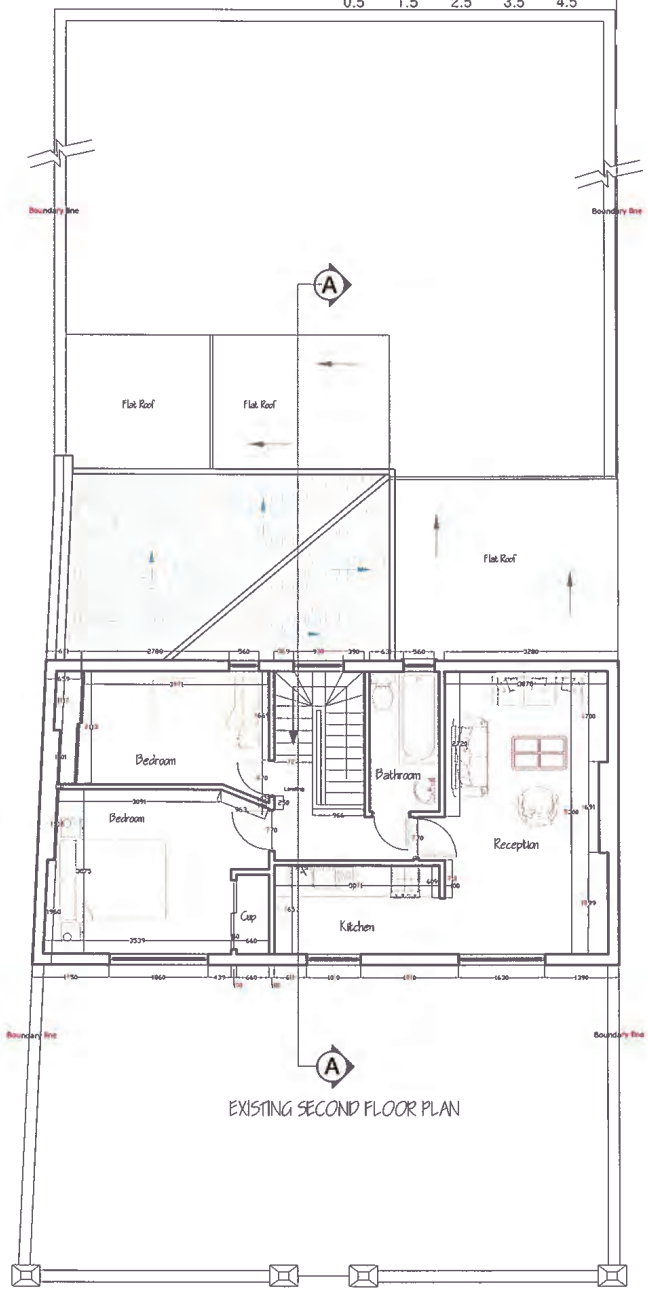


EXISTING SECOND FLOOR PLAN

ALL DIMENSIONS TO BE CHECKED ON SITE ONLY TO BE SCALED FOR PLANNING AND BUILDING REGULATIONS

Ref.	Revision	Date	By
.			

E RILEY ASSOCIATES
Chartered Surveyor
Tel:020 8886 4693 Mobil: 07958 035 096

Project title: INTERNAL ALTERATION

Project Address: 44 DARTMOUTH PARK ROAD
LONDON
NW5 1SN

Client: MR GEORGE GEORGIOU

Drawing title: EXISTING FIRST & SECOND FLOOR PLANS

Date: May 2014

CAD & Drawn by: BB

Drawn & Checked by: ER

File name: T & B71 May 2014

Scale: 1:100 @A3

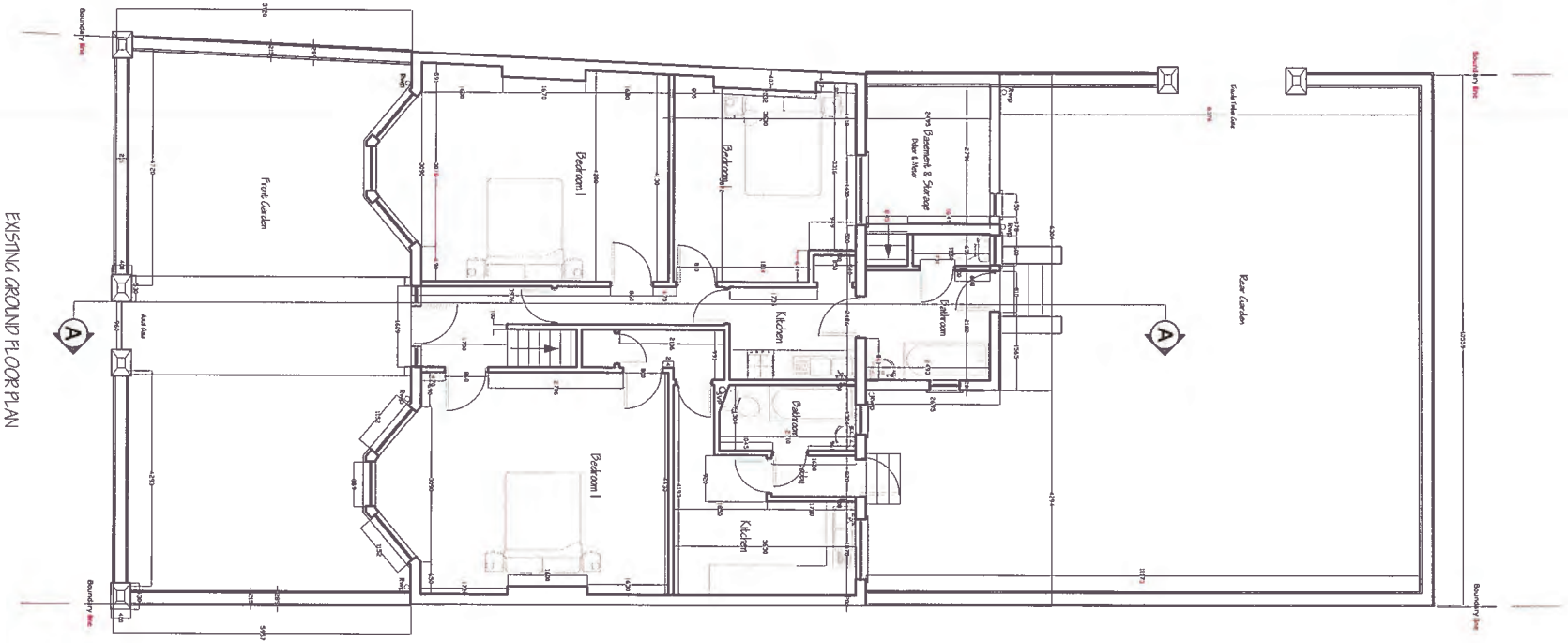
Drawing No: 02/06

SCALE 1:100 @ A3

0 1 2 3 4 5m 6m 7m 8m 9m 10m

0.5 1.5 2.5 3.5 4.5

EXISTING GROUND FLOOR PLAN



ALL DIMENSIONS TO BE CHECKED ON SITE ONLY TO BE SCALED FOR PLANNING AND BUILDING REGULATIONS

Ref.	Revision	Date	By
-			

E RILEY ASSOCIATES
Chartered Surveyor
Tel:020 8886 4693 Mobil: 07958 035 096

Project title: INTERNAL ALTERATION

Project Address: 44 DARTMOUTH PARK ROAD
LONDON
NW5 1SN

Client: MR GEORGE GEORGIOU

Drawing title: EXISTING GROUND FLOOR PLAN

Date: May 2014

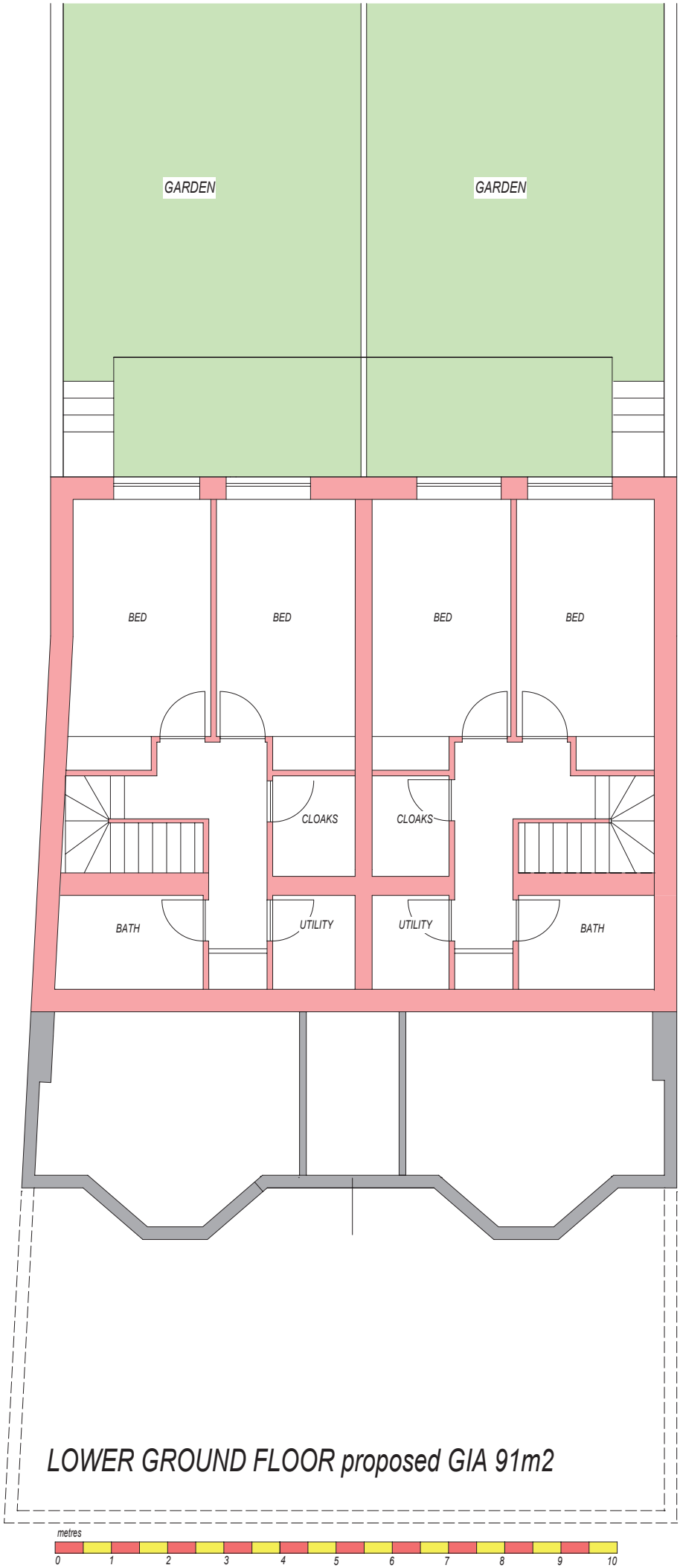
CAD & Drawn by: BB

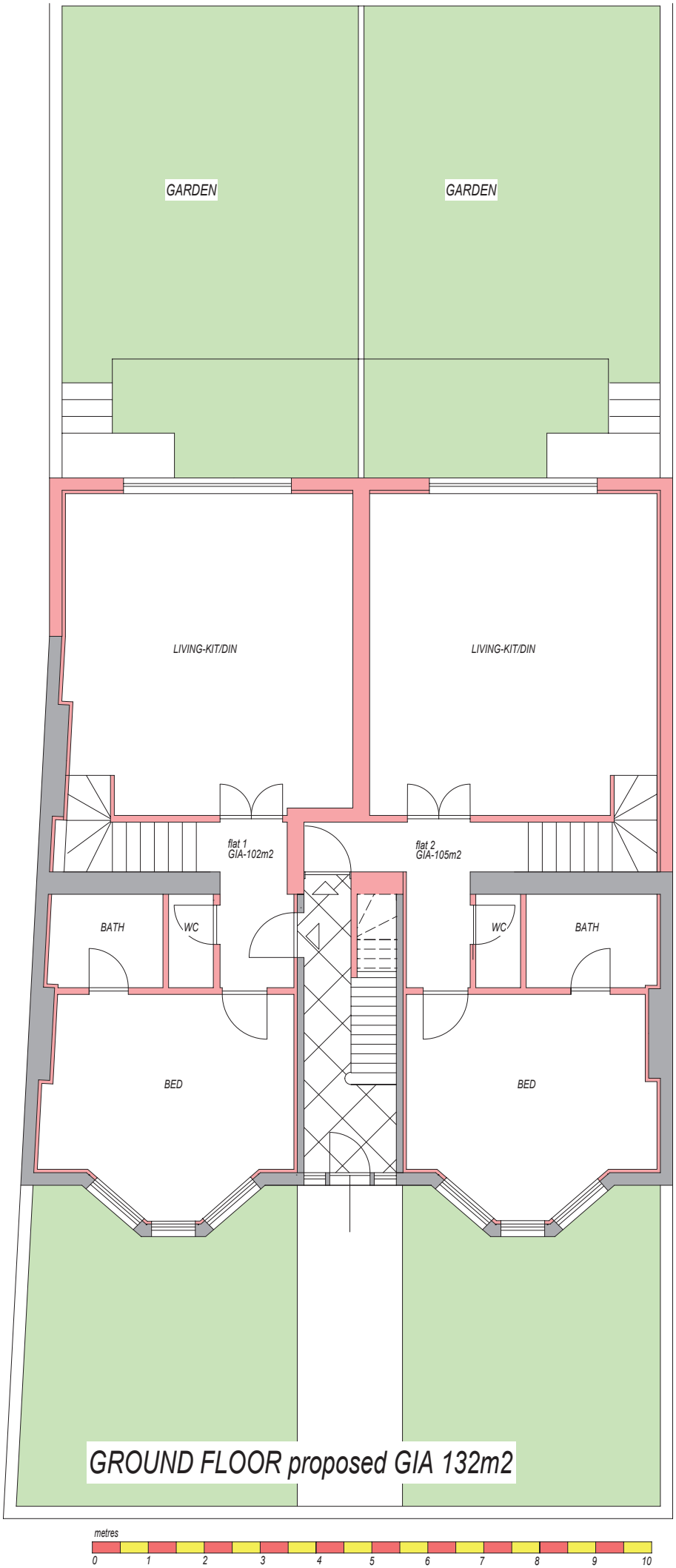
Drawn & Checked by: ER

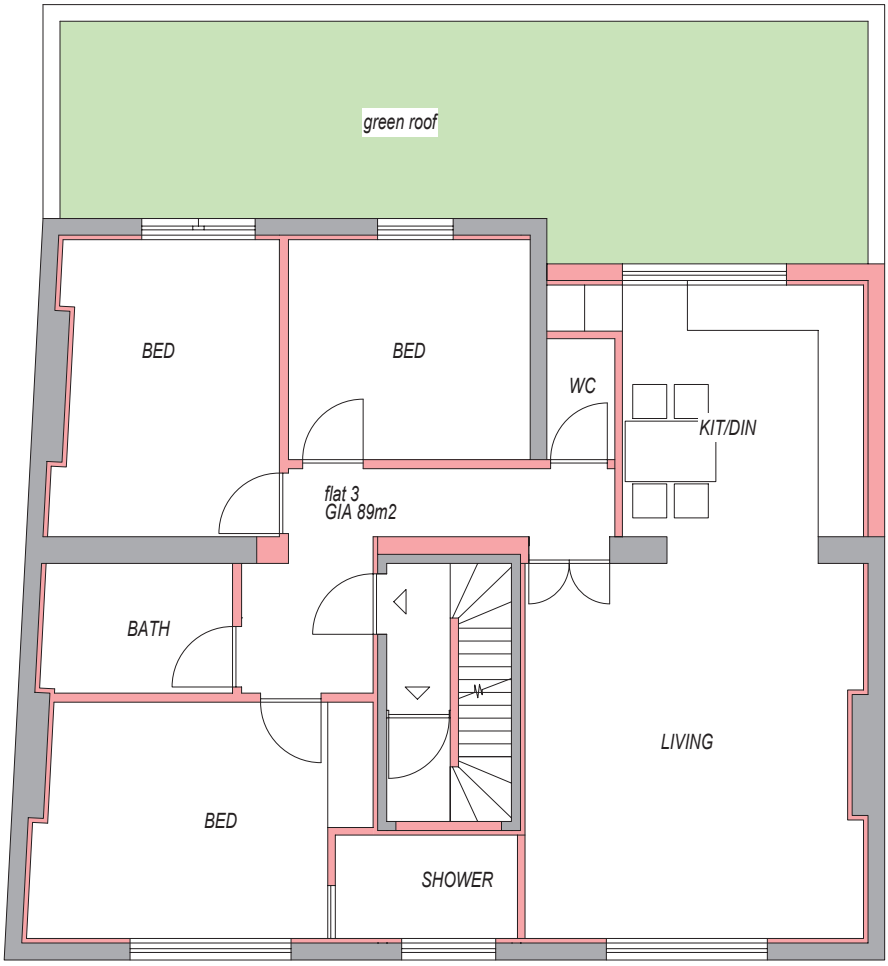
File name: T & B71 May 2014

Scale: 1:100 @A3

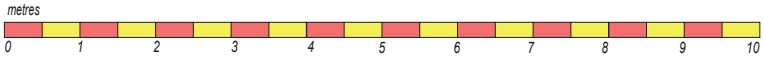
Drawing No: 01/06

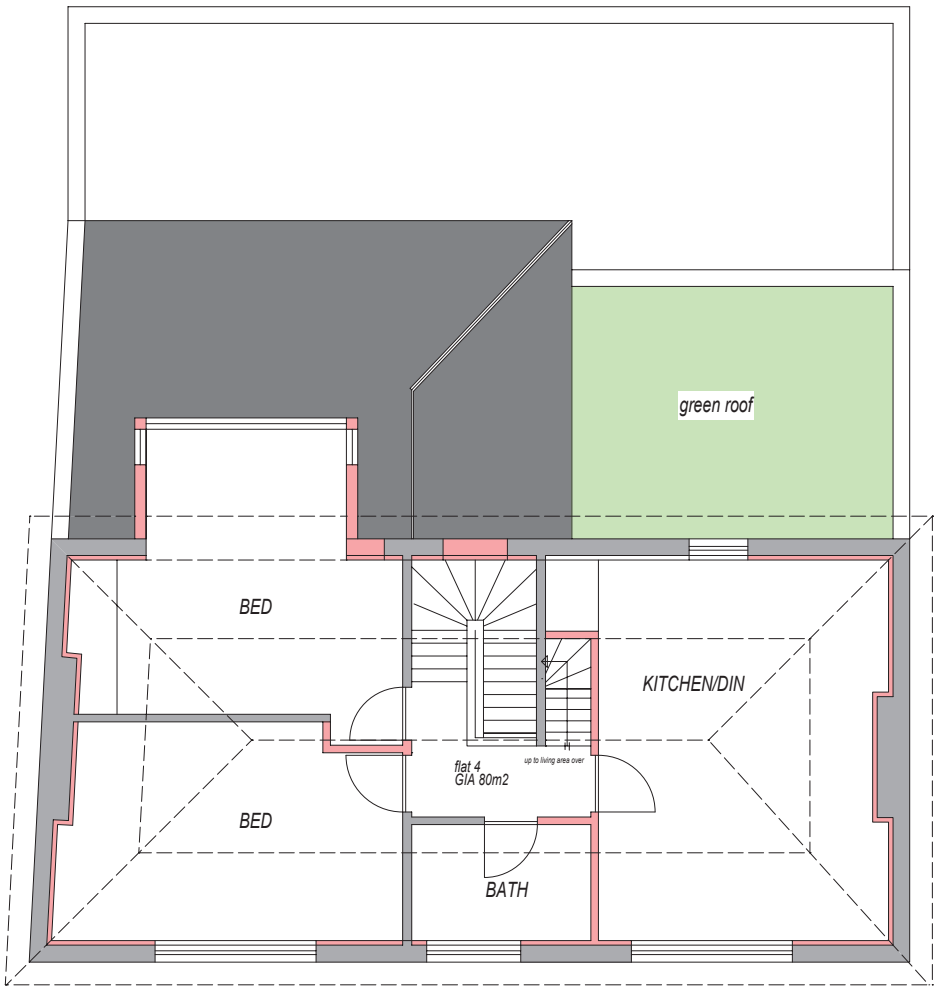

GARDEN
GARDEN
BED
BED
BED
BED
CLOAKS
CLOAKS
BATH
UTILITY
UTILITY
BATH
LOWER GROUND FLOOR proposed GIA 91m2
metres
0 1 2 3 4 5 6 7 8 9 10


GARDEN
GARDEN
LIVING-KIT/DIN
LIVING-KIT/DIN
flat 1
GIA-102m2
flat 2
GIA-105m2
BATH
WC
WC
BATH
BED
BED
GROUND FLOOR proposed GIA 132m2
metres
0 1 2 3 4 5 6 7 8 9 10

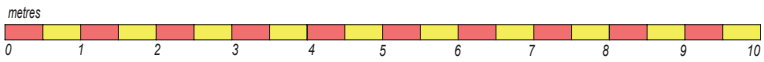


FIRST FLOOR proposed GIA 97m2

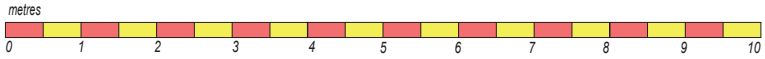




SECOND FLOOR (59m2) & ROOF proposed GIA 80m2



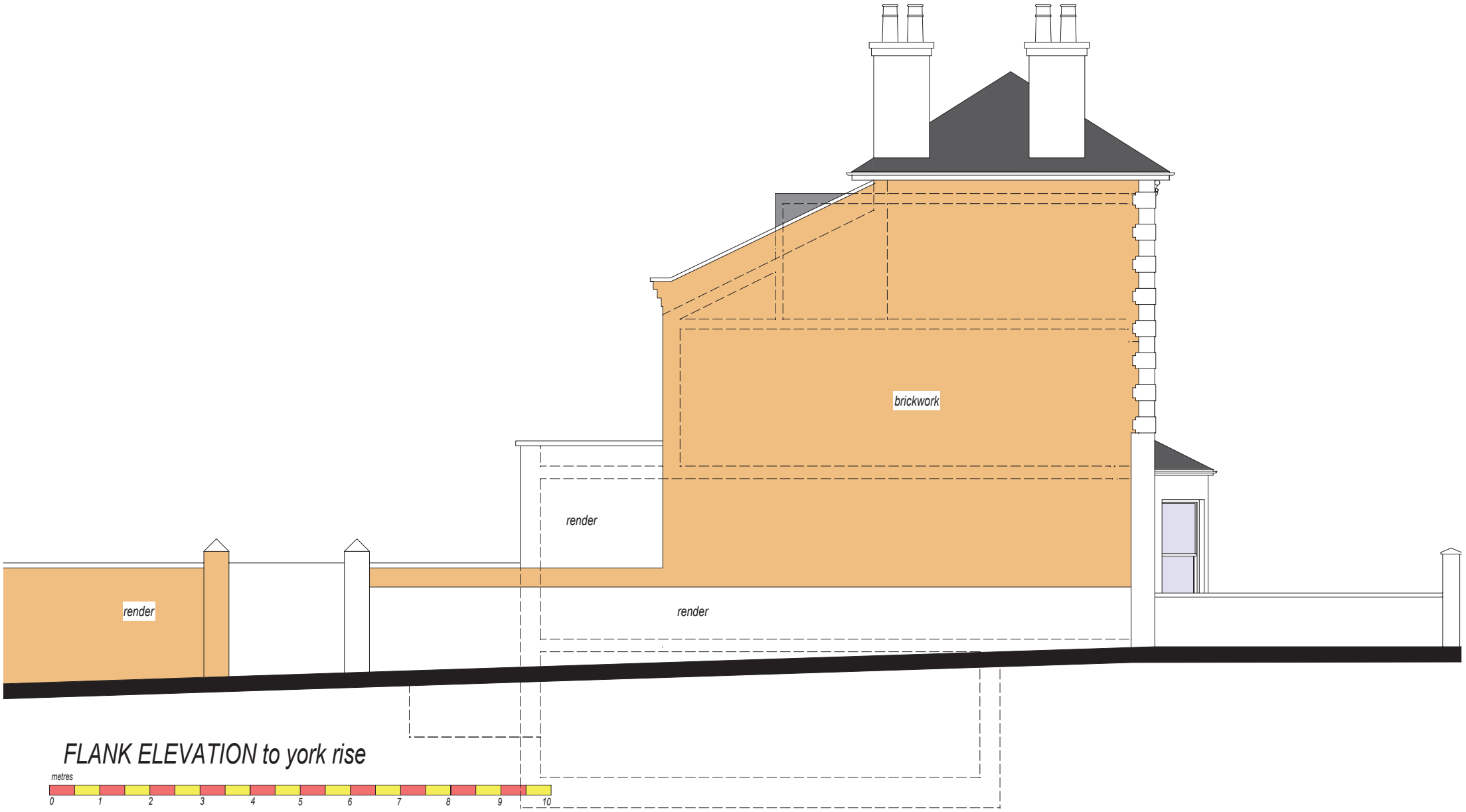
FRONT ELEVATION proposed



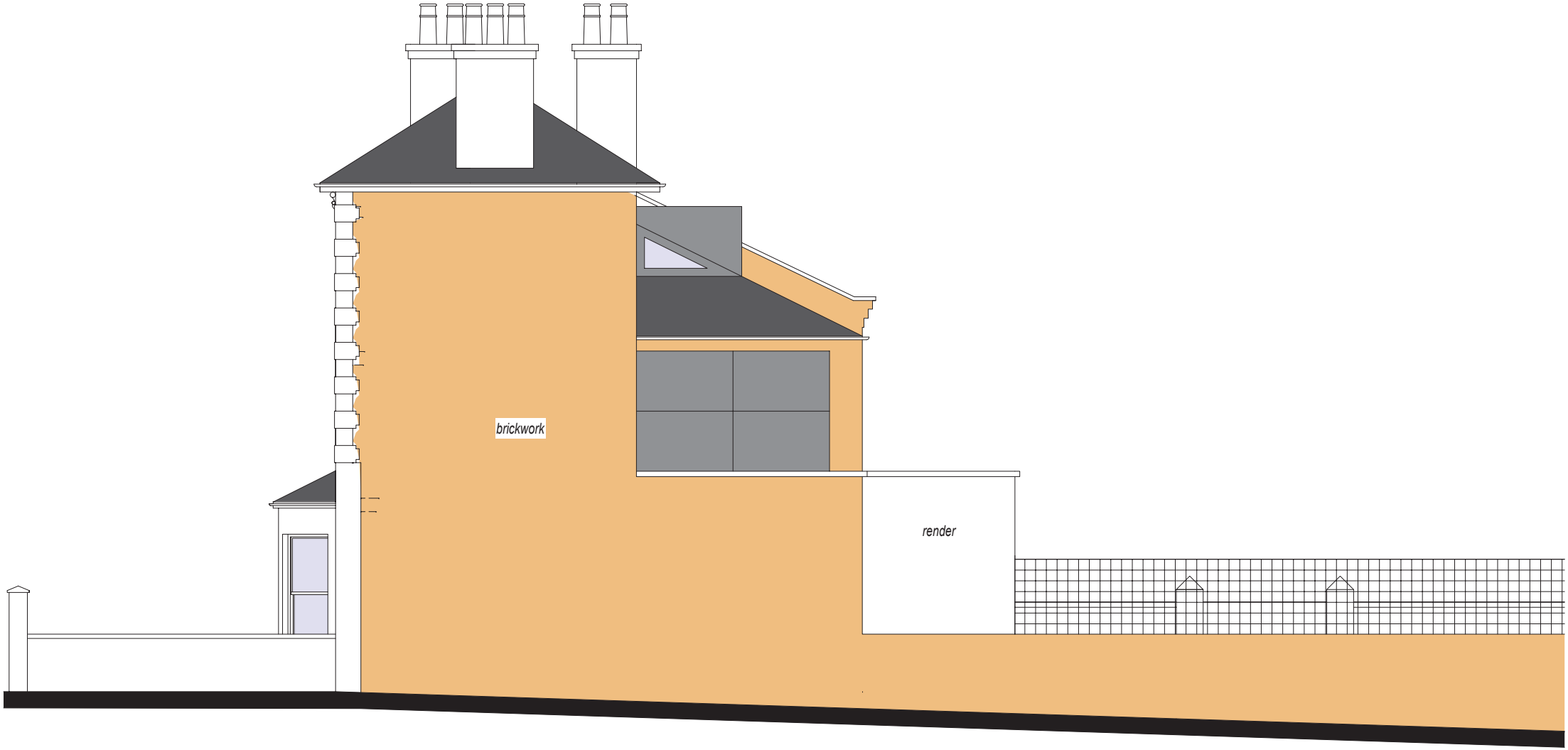
REAR ELEVATION proposed

metres

0 1 2 3 4 5 6 7 8 9 10



FLANK ELEVATION to york rise

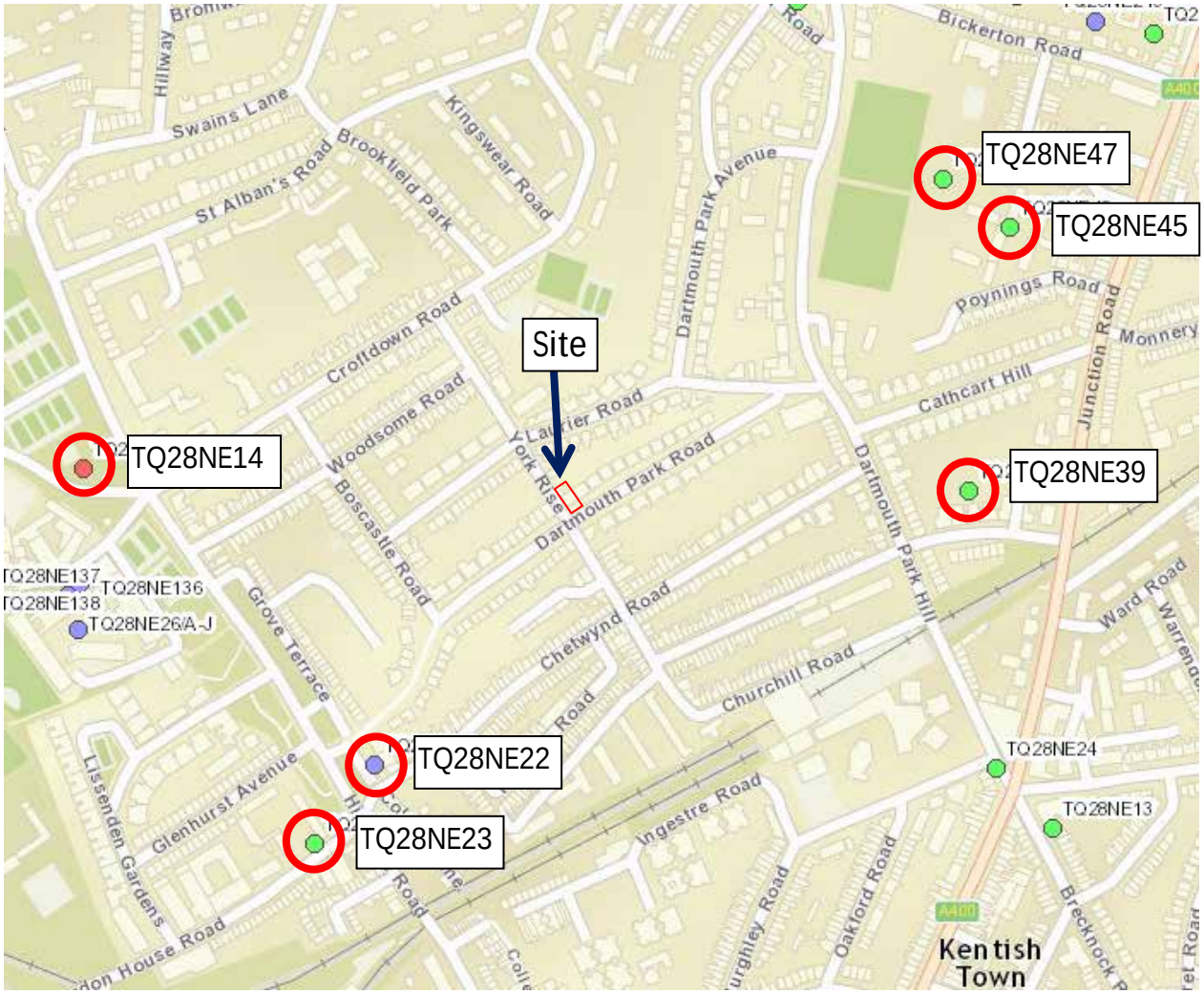


FLANK ELEVATION

metres
10 9 8 7 6 5 4 3 2 1 0

APPENDIX B

BGS historical borehole records



Not to scale.
Modified from www.bgs.ac.uk

Client	Project	Job No
Mr Jacob Sorkin	**44 Dartmouth Park Road, London**	**CG/18249**
CGL	Title **BGS historical borehole location plan**	**Appendix B**

(*For Survey use only*)

GEOLOGICAL SURVEY OF GREAT BRITAIN

RECORD OF SHAFT OR BORE FOR MINERALS

6-inch Map Registered No. 1/3

TQ28NE | 14

Name of Shaft or Bore given by Geological Survey:

Name and Number given by owner: Kentish Town Waterworks (Abandoned)

Nat. Grid Reference 2834 8612

For whom made

Town or Village Kentish town County London

1" N.S.Map No.	1" O.S.Map No.	Confidential or not
256	361	N

Exact site ... { Attach a tracing from a map, or a sketch-map, if possible.

Purpose for which made Water

Ground Level at shaft/bore relative to O.D. 186 ft (56.69m) If not ground level give O.D. of beginning of shaft/bore

Made by Date of sinking 1856?

Information from Prestwich QJ.GS. Vol 12 p6. Date received

Examined by

SPECIMEN NUMBERS AND ADDITIONAL NOTES

(*For Survey use only*) Geological Classification	Description of Strata	Thickness Ft.	Thickness In.	Depth Ft.	Depth In.
	From L.M. p. 124-7			1302	

KENTISH TOWN. Waterworks (abandoned).

PRESTWICH, *Quart. Journ. Geol. Soc.*, vol. xii. p. 6. (The numbers of the beds are those of Prof. Prestwich.)

186½ OD

Surface of the ground 174 feet above Thames High Water Mark. Shaft 539 feet, the rest bored. Water-level 210 feet down.

No Moored Dd

		Thickness Ft.	Thickness In.	Depth Ft.	Depth In.	(m)
London Clay, 236 ft.	1. Yellow clay	30	6	30	6	9.296
	2. Blue clay with septaria	205	6	236	0	71.93
Reading Beds, 61½ ft.	3. Red, yellow and blue mottled clay	37	6	273	6	83.36
	4. White sand with flint-pebbles	0	6	274	0	83.51
	5. Black sand, passing into the bed below	2	0	276	0	84.12
	6. Mottled green and red clay	1	0	277	0	84.42
	7. Clayey sand	3	0	280	0	85.34
	8. Dark grey sand with layers of clay	9	6	289	6	88.24
	9. Ash-coloured quick-sand	6	6	296	0	90.22
	10. Flint-pebbles	1	6	297	6	90.68
		Ft.	In.	Ft.	In.	
Thanet Sand, 27 ft.	11. Ash-coloured sand	10	0	307	6	93.73
	12. Clayey sand	4	0	311	6	94.95
	13. Dark grey clayey sand	11	0	322	6	98.30
	14. Angular green-coated flints	2	0	324	6	98.91
[Upper Chalk,] 214½ ft.	15. Chalk with flints	119	6	444	0	135.33
	16. Hard chalk without flints	8	0	452	0	137.77
	17. Chalk, softer, with few flints	31	6	483	6	147.37
	18. Nodular chalk with 3 beds of tabular flint	13	6	497	0	151.49
	19. Chalk with layers of tabular flint and a few nodular flints	32	6	529	6	161.39
	20. Chalk with a few flints and some patches of sand	9	6	539	0	164.29
[Passage-beds and Chalk Rock.]	21. Very light-grey chalk with a few flints	30	0	569	0	173.43
[Middle and Lower Chalk, 341 ft.]	22. Light-grey chalk with a few thin beds of marl	133	0	702	0	213.97
	23. Grey chalk-marl, with compact and marly beds and occasional pyrites	161	0	863	0	263.04
	24. Grey marl	20	0	883	0	269.14
	25. Harder grey marl, rather sandy and with occasional pyrites	27	0	910	0	277.37

(5412) Wt.32837/PS.154 2m 10/64 G.W.B.Ltd. Gp.863

Junction Chetwynd Rd & Highgate Rd. Kentish Town. TQ 28 NE: 22 C 5

WELL BORING at Highgate Rd. Kentish Town. County 22

Geol. map 1 in. map New Series 6 in. map 3 S.W.

Made by Date

Sunk feet. Bored feet.

Communicated by L. C. C. 2860·8587

Height above Ordnance Datum 137·70. Rest level of water 256.

Yield

Quality (with copy of analysis on separate sheet)

GEOLOGICAL FORMATION	NATURE OF STRATA	THICKNESS Feet	THICKNESS Inches	DEPTH Feet	DEPTH Inches	
	Brown Clay.	5	—			152
SUPD	Brown Gravel.	1	—	6	—	183
LC	Blue Clay (all dry).	24	—	30	—	914

GEOLOGICAL SURVEY AND MUSEUM,
JERMYN STREET, LONDON, S.W.1.

(50478X) Wt. W39733/0131 2,500 4/31 H. J. R. & L., Ltd. Gp. 616

WELL BORING at Gordon House Rd 100yds West of Highgate Rd, N.W.1. (Kentish Town) County [TQ 28 NE: 23]

Geol. map 1 in. map New Series 6 in. map

Made by Date —

Sunk feet. Bored feet.

Communicated by L.C.C. 2855 8580

Height above Ordnance Datum 150. Rest level of water 256

Yield

Quality (with copy of analysis on separate sheet)

GEOLOGICAL FORMATION	NATURE OF STRATA	THICKNESS Feet	THICKNESS Inches	DEPTH Feet	DEPTH Inches
	Stiff Brown Clay.	35	—		
	~~Bld~~ Blue Clay.	35	—	70	—
	(all dry).				

GEOLOGICAL SURVEY AND MUSEUM,
JERMYN STREET, LONDON, S.W. 1.

(50478X) Wt. W39733/0131 2,500 4/31 H. J. R. & L., Ltd. Gp. 616

N.1765

Misc. 256

TQ/28 NE/39.

W. S. Ltd. 3,000/3/46.

C. ISLER & Co., LTD.,
ARTESIAN & CONSULTING WELL ENGINEERS
BEAR LANE, SOUTHWARK, S.E.1.

Telegraphic Address: "ISLER, LONDON."
Telephone No.: WATERLOO 7044 (3 lines).

BIRMINGHAM BRANCH: 93, Broad Street.
LEEDS BRANCH: Bardon Chambers, King Street.

CHART

of Borehole at London Freehold Properties,
10, Wyndham Crescent,
London, W.19.

Bored by B. Wiffen, Date Commenced 9. 3. 48. 194

Water Levels: Standing Dry Ft. Pumping Ft. ,, Completed 11.3.48. 194

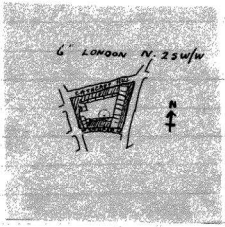
Supply Galls. per hour. Analysis if made

Lined with Ft. Ins. of Ins. Tubes Ft. above/below Surface.

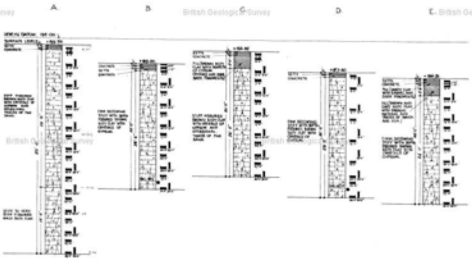
TQ/28 NE/39. 2911. 8612
256

Boring Stage above/below Ground or Street Level Ft. Height above Sea Level Ft.

Stratum	Thickness.		Total.		Water level. Rods in	Rods out
TRIAL BOREHOLE No. 1.						
MGRD Made up ground	1	0			0.80	
LC(W) Brown Clay	11	0	12	0	3.66	
Brown & Blue Clay (mixed)	5	0	17	0	5.18	Hole
I.C Dark Brown Clay	18	0	35	0	10.68	dry



Rec. 25.3.48



NOTES

SOIL SYMBOLS AS C.P. 2001 (1957)

- INDICATES DISTURBED SAMPLE
- " UNDISTURBED "
- " BULK DISTURBED "
- " WATER "

S.W.L. = STANDING WATER LEVEL (AT TIME OF BORING)

FOR SECTIONS OF BORINGS F,G,H, I, AND J ALSO BORINGS K,L,M AND N SEE DRAWINGS Nos HO/531/07 AND 08.

FOR SECTIONS OF DIGGINGS Nos 1 TO 6 SEE DRAWING No HO/531/05

FOR KEY PLAN SHOWING POSITIONS OF BORINGS AND DIGGINGS ON SITE SEE DRAWING No HO/531/04.

REVISIONS

No	Date	
		TQ28NE/45 2814 8636 Page 2 of 4.

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
HOUSING DIVISION
Waterloo 3000 Extension

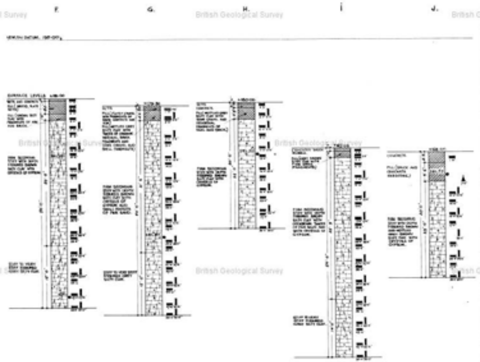
Architect to the Council
Drawn: Checked:

Job
POYNINGS ROAD
ISLINGTON

Title
TRIAL BORINGS
A TO E

Scale (vertical)	Date
8 FEET TO 1" INCH	8 · 4 · 64

Div	Job No.	Drg	Rev
HO	531	06	



NOTES

SOIL SYMBOLS AS C.P.2001 (1957)

- INDICATES DISTURBED SAMPLE
- UNDISTURBED "
- WATER "
- BULK DISTURBED "
- S.W.L. - STANDING WATER LEVEL (AT TIME OF BORING)

FOR SECTIONS OF BORINGS A, B, C, D AND E ALSO K, L, M AND N SEE DRAWINGS Nos HO/531/04 AND 06.

FOR SECTIONS OF DIGGINGS Nos 1 TO 6 SEE DRAWING No HO/531/08.

FOR KEY PLAN SHOWING POSITIONS OF BORINGS AND DIGGINGS ON SITE SEE DRAWING No HO/531/06.

REVISIONS

No.	Date	
		TQ 38 NW/45 2914.8636 Page 3 of. 256

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
HOUSING DIVISION
Waterloo 5000 Extension

Architect to the Council
Drawn: Checked:

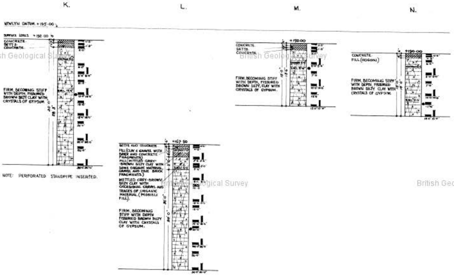
Job: POYNINGS ROAD ISLINGTON.

Title: TRIAL BORINGS F, G, H, I and J.

Scale (vertical) 8 FEET TO 1" INCH. Date 8 - 11 - 64.

Div.	Job No.	Drwg.	Rev.
HO	531	07	

TQ 28NE/45.



NOTES

SOIL SYMBOLS AS C.P. 2001 (1957)

- ▬ INDICATES DISTURBED SAMPLE
- ▮ " UNDISTURBED "
- ● " WATER "
- ▲ " BULK DISTURBED "
- S.W.L. " STANDING WATER LEVEL. (AT TIME OF BORING)

FOR SECTIONS OF BORINGS A, B, C, D AND E. ALSO F, G, H, I AND J. SEE DRAWINGS Nos HO/531/06 AND 07.
FOR SECTIONS OF DIGGINGS Nos 1 TO 6 SEE DRAWING No HO/531/05.
FOR KEY PLAN SHOWING POSITIONS OF BORINGS AND DIGGINGS ON SITE SEE DRAWING No HO/531/04.

REVISIONS

No.	Date	
		TQ28NE/45 2914.8636 Page 4 of 4 256.

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT

HOUSING DIVISION

Waterloo 5000 Extension:

Hubert Bennett
Architect to the Council

Drawn: GHL Checked: GNW

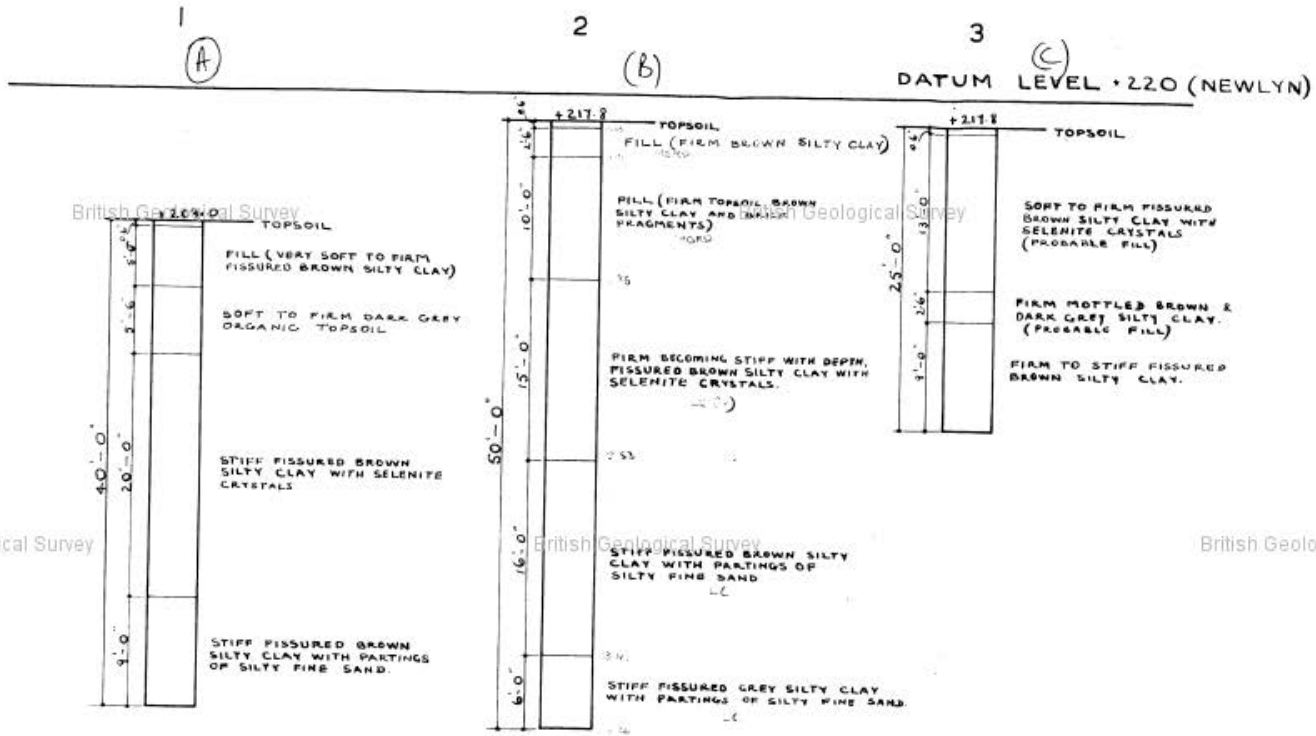
Job
POYNINGS ROAD.
ISLINGTON.

Title
TRIAL BORINGS
K., L., M. AND N.

Scale (VERTICAL) 8' FEET TO 1 INCH. Date 8·4·64

Div.	Job No.	Drwg.	Rev.
HO	531	08	

TQ28NE/47
2908 8639
256
Page 2 of 2



NOTES

NO WATER WAS ENCOUNTERED AT TIME OF BORING AUGUST 1964.

FOR POSITIONS OF TRIAL BORINGS NOS 1, 2 & 3 SEE DRG NO HO/531/04/2.

REVISIONS

No.	Date

LONDON COUNTY COUNCIL
ARCHITECT'S DEPARTMENT
HOUSING DIVISION
Waterloo 5000 Extension: 8247

Herbert Bennett
Architect to the Council

Drawn: L.A.D. Checked: T.W.L.

Job
POYNINGS ROAD
ISLINGTON

Title
TRIAL BORINGS
1 2 & 3.

Scale (VERTICAL)	Date
1/8 to 1'-0"	3 MAR. 1965

Div	Job No.	Drwg.	Rev.
HO	531	09	

ET 444.