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Additional Geo-Environmental Investigation - 102 Camley Street, Camden, NW1 0NF

1. Introduction

REC Ltd has been commissioned to undertake a Phase II Geo-Environmental Intrusive Investigation at 102 Camley Street, Camden, NW1 0NF. It is understood that the proposed development comprises the construction of an 8 to 12 storey residential tower.

REC previously completed two phases of intrusive ground investigations, report ref. 20698P1R0 and 20698/141024/L1. It is understood that additional machine excavated pits are required in order to provide supplementary information relating to obstructions previously encountered and details of the existing foundations.

2. Scope of work

REC attended site in November 2014 to undertake two days of trial pitting across the site. These were located in the areas that were previously inaccessible. A JCB 3CX was utilised in order to break through any concrete obstructions. A total of four machine excavated trial pits were completed. Upon completion the holes were backfilled with arisings.

Attachments to this letter are provided and comprise the following:

Attachment 1 – Report Limitations
Attachment 2 – Engineering Logs
Attachment 3 – Trial Pit Sketches
Attachment 4 – Site Photographs
Attachment 5 – Exploratory Hole Location Plan

3. Limitations

The limitations to this report are presented in Appendix I.

4. Ground Conditions

4.1. Summary of Ground Conditions

The ground investigation generally confirmed the published geology and identified the strata set out in the table below:

Strata	Min depth to the top of the strata (mbgl)	Max depth to the top of the strata (mbgl)	Max thickness (m)
Made Ground	0.00 (Ground Level)	0.00 (Ground Level)	>3.20

4.1.1 Made Ground

Made Ground was encountered within all intrusive locations to a maximum unproven depth of 3.20mbgl (TP301). The unit was variable in composition comprising clay, sand and gravel with cobble and boulder content. Sand was fine to coarse grained. Gravel comprised angular to sub-rounded fine to coarse flint, brick, concrete, clinker, flint and chalk.

4.1.2 Obstructions Encountered

Two obstructions were encountered within TP301 and TP303. This comprised a brick wall structure, which was situated along the northern boundary of the site. The brick wall was encountered at depths ranging between 0.30mbgl (TP301) and 0.25mbgl (TP303). The depth of the wall was unproven; however it did persist to depths in excess of 3.20mbgl. TP304 was situated south of TP301, where a brick wall was not encountered. This suggests that the brick wall is localised along the northern site boundary.

4.2 Building Foundations

TP302 was carried out in order to identify the existing building foundations. Concrete was observed from the ground level to 0.25mbgl. The building foundations were located under the concrete cover to a depth 0.75mbgl bearing onto Made Ground. The foundation stepped out 2.2m from the building and was assumed to comprise a pad foundation.

I trust this letter and its enclosures are clear; should you have any further queries please contact the undersigned.

Yours sincerely,

For and on behalf of REC

Troy Randall
Graduate Geo-environmental Consultant
REC
Resource & Environmental Consultants Ltd

Stuart Phillips
Regional Director

Attachment 1
Limitations

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between REC Ltd and the Client as indicated.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not be made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. In addition to the above REC Ltd note that when investigating, or developing, potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and also with time. The absence of certain ground, ground gas, and contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Due to the presence of existing buildings and structures access could not be obtained to all areas. Additional contamination may be identified following the removal of the buildings or hard standing.

7. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

8. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.

9. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

10. This report presents an interpretation of the geotechnical information established by excavation, observation and testing. Whilst every effort is made in interpretative reporting to assess the soil conditions over the Site it should be noted that natural strata vary from point to point and that man made deposits are subject to an even greater diversity. Groundwater conditions are dependent on seasonal and other factors. Consequently there may be conditions present not revealed by this investigation.

11. REC can not be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by REC is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by REC in this connection without their explicit written agreement there to by REC.

12. Rather, this investigation has been undertaken to provide a preliminary characterisation of the existing sub-surface geotechnical characteristics and make up and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

13. This investigation has been undertaken to reasonably characterise existing sub-surface conditions and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

Attachment 2
Engineering Logs

Trial Pit Log

REC Resource & Environmental Consultants Ltd

Trialpit No **TP301** Sheet 1 of 1

Project Name: 102 Camley Street	Project No. 20698	Co-ords: - Level: 0.00	Date 06/11/2014
Location: Camden	Dimensions (m): Depth 3.20 — 3.00 × 1.80		Scale 1:20 Logged Troy Randall

Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
						Concrete cover with rebar. (MADE GROUND)
			0.30	-0.30		Brick wall and brown gravelly sandy CLAY with cobble and boulder content. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse flint, brick and concrete with rootlets and rebar. Cobbles and boulders of subangular brick and concrete. (MADE GROUND)
						At 3.1mbgl: gravel and sands suspected due to side stability.
			3.20	-3.20		End of pit at 3.20 m

1 2 3 4

Remarks: Prior to intrusive site works the area was cleared for services via an EM and GPR survey. Upon completion the hole was backfilled with arisings. The hole was terminated at 3.20mbgl with the depth of the brick wall not proven.

Stability: Stable

Trial Pit Log

Trialpit No **TP302**

Sheet 1 of 1

Project Name: 102 Camley Street	Project No. 20698	Co-ords: - Level: 0.00	Date 07/11/2014
Location: Camden	Dimensions (m): Depth 0.90	1.80 / 0.70	Scale 1:20 Logged Troy Randall

Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
						Concrete cover. (MADE GROUND)
			0.25	-0.25		Very soft to soft brown slightly gravelly CLAY with cobble content. Gravel is angular to subrounded fine to coarse flint, brick and concrete. Cobbles of subangular brick. (MADE GROUND)
			0.35	-0.35		Red clayey SAND and GRAVEL. Sand is fine to coarse. Gravel is angular to subrounded fine to coarse brick, clinker, flint and chalk. (MADE GROUND)
			0.55	-0.55		Soft brown slightly gravelly CLAY. Gravel is angular to rounded fine to coarse flint and brick. (MADE GROUND)
			0.90	-0.90		End of pit at 0.90 m

Remarks: Prior to intrusive site works the area was cleared for services via an EM and GPR survey. Upon completion the hole was backfilled with arisings. End of hole at 0.90mbgl as the foundations were proven to a depth of 0.75mbgl.

Stability: Stable

Trial Pit Log

Trialpit No **TP303**

Sheet 1 of 1

Project Name: 102 Camley Street	Project No. 20698	Co-ords: - Level: 0.00	Date 07/11/2014
Location: Camden	Dimensions (m): Depth 0.30	2.90 / 1.10	Scale 1:20 Logged Troy Randall

Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
			0.25	-0.25		Concrete cover with rebar. (MADE GROUND)
			0.30	-0.30		Brick layer comprised of flint, sand and asphalt. (MADE GROUND) End of pit at 0.30 m

1
2
3
4

Remarks: Prior to intrusive site works the area was cleared for services via an EM and GPR survey. Upon completion the hole was backfilled with arisings. End of hole at 0.30mbgl as the brick wall was encountered.

Stability: Stable

Trial Pit Log

REC Resource & Environmental Consultants Ltd

Trialpit No **TP304**

Sheet 1 of 1

Project Name: 102 Camley Street	Project No. 20698	Co-ords: - Level: 0.00	Date 07/11/2014
Location: Camden	Dimensions (m): Depth 1.00	1.50 / 0.60	Scale 1:20 Logged Troy Randall

Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
Depth	Type	Results				
						Concrete cover with rebar. (MADE GROUND)
			0.30	-0.30		Redish brown SAND and GRAVEL with cobble content. Sand is fine to coarse. Gravel is subangular to well rounded fine to coarse flint, brick, concrete, chalk and clinker. Cobbles of subangular brick. (MADE GROUND)
			0.70	-0.70		Soft light brown mottled grey silty sandy slightly gravelly CLAY with relic rootlets.. Sand is fine to medium. Gravel is angular to subrounded fine to coarse flint and brick. (MADE GROUND)
			1.00	-1.00		End of pit at 1.00 m

1 2 3 4

Remarks: Prior to intrusive site works the area was cleared for services via an EM and GPR survey. Upon completion the hole was backfilled with arisings. No brick wall encountered.

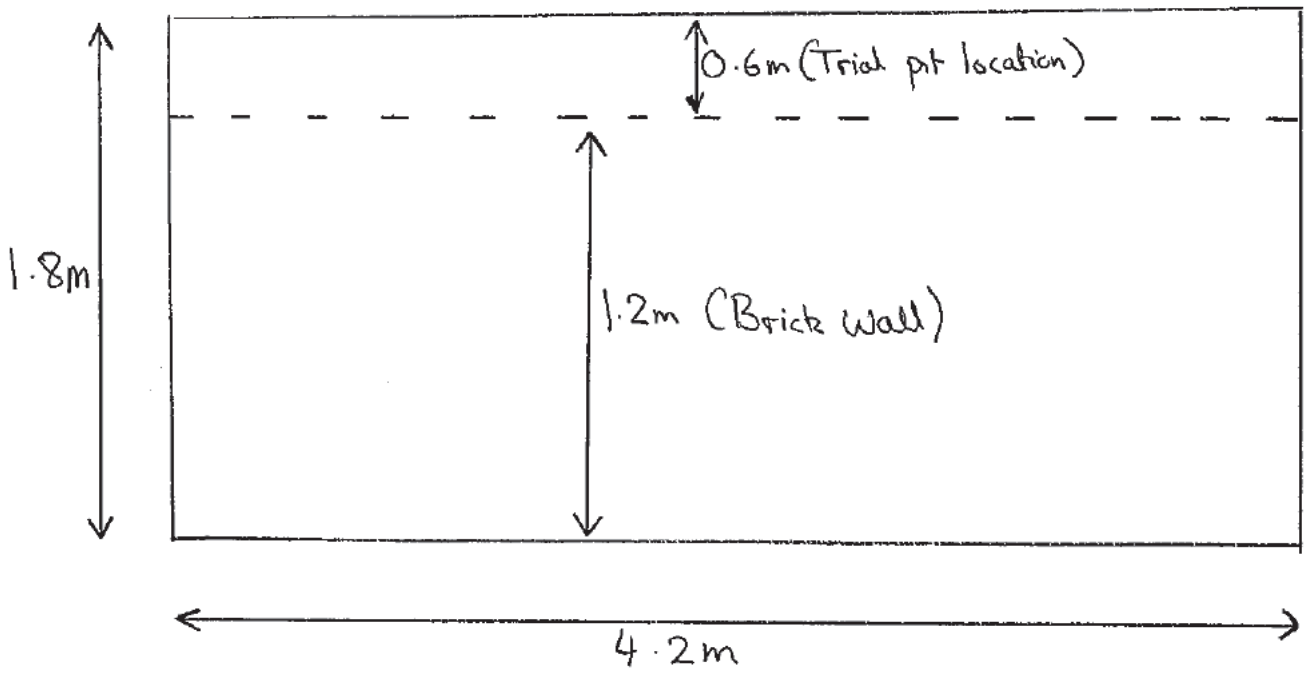
Stability: Stable

Attachment 3
Trial Pit Sketches

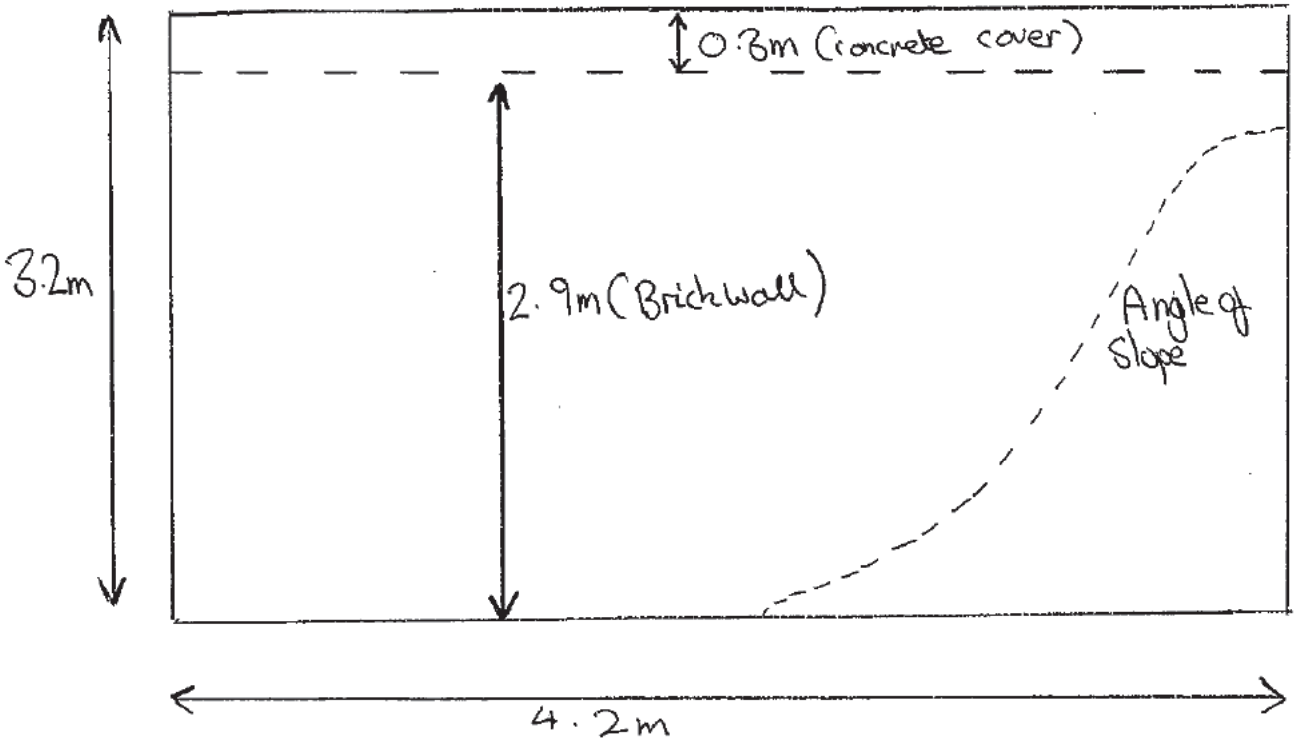
20698 - 102 Camley Street - Trial pit sketch

TP301

① Birds Eye Drawing



② Cross Section Drawing

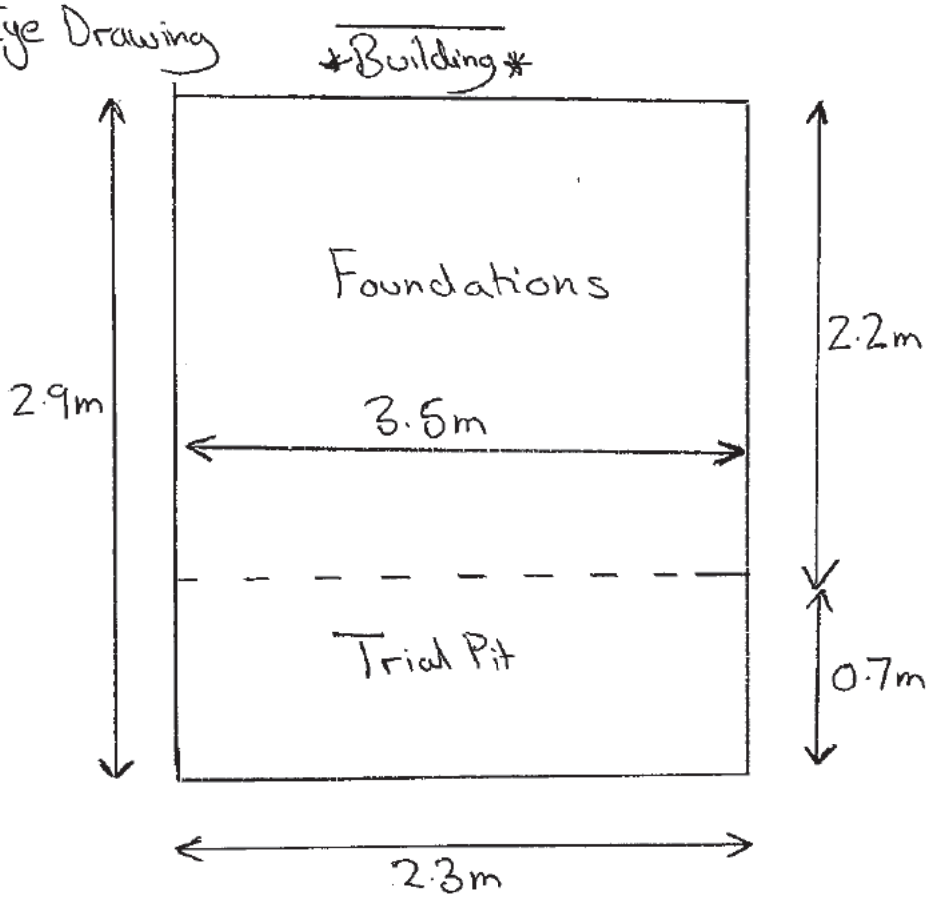


N.B. End of hole at 3.2mbg', depth of wall unproven.

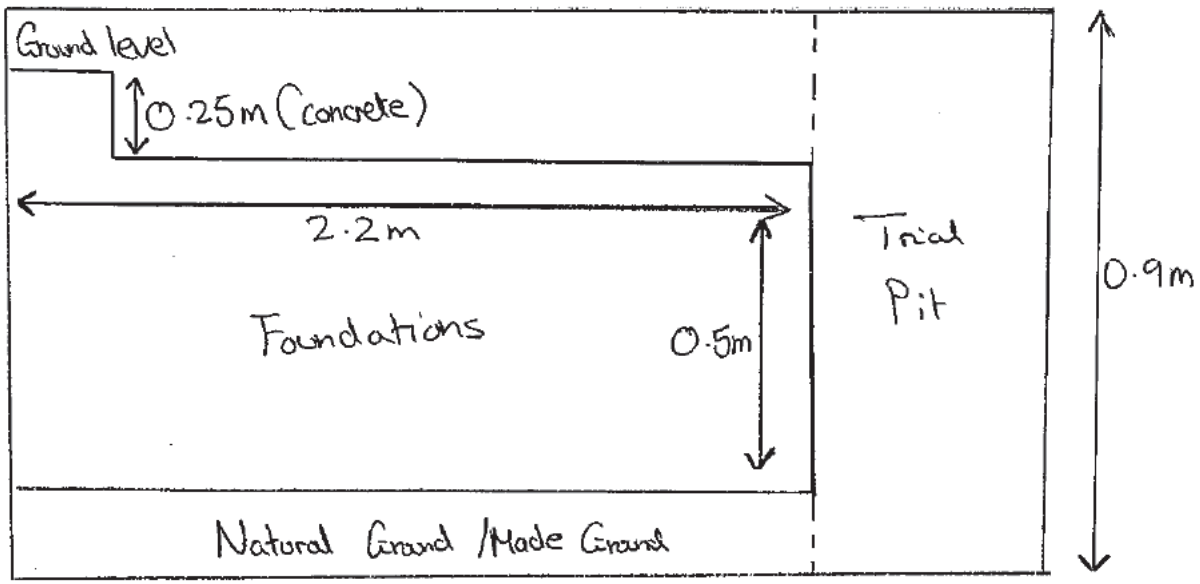
20698 - 102 Camley Street - Trial pitch sketch

TP302

① Birds Eye Drawing



② Cross Section Drawing

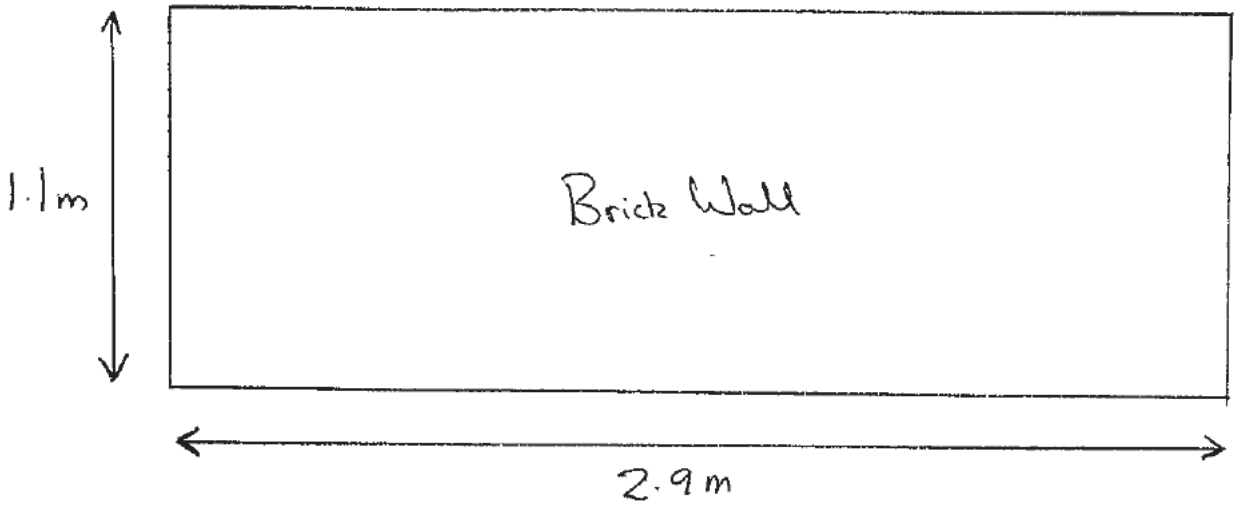


N.B. Unable to assess other locations, due to services present on site.

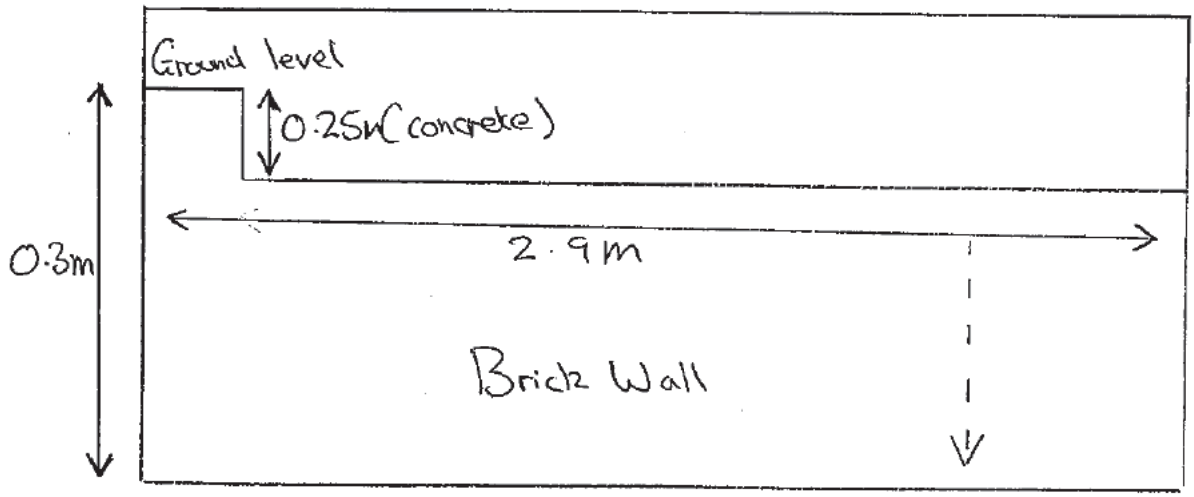
20698 - 102 Camley Street - Trial Pit Sketch

TP303

① Birds Eye Drawing



② Cross Section Drawing

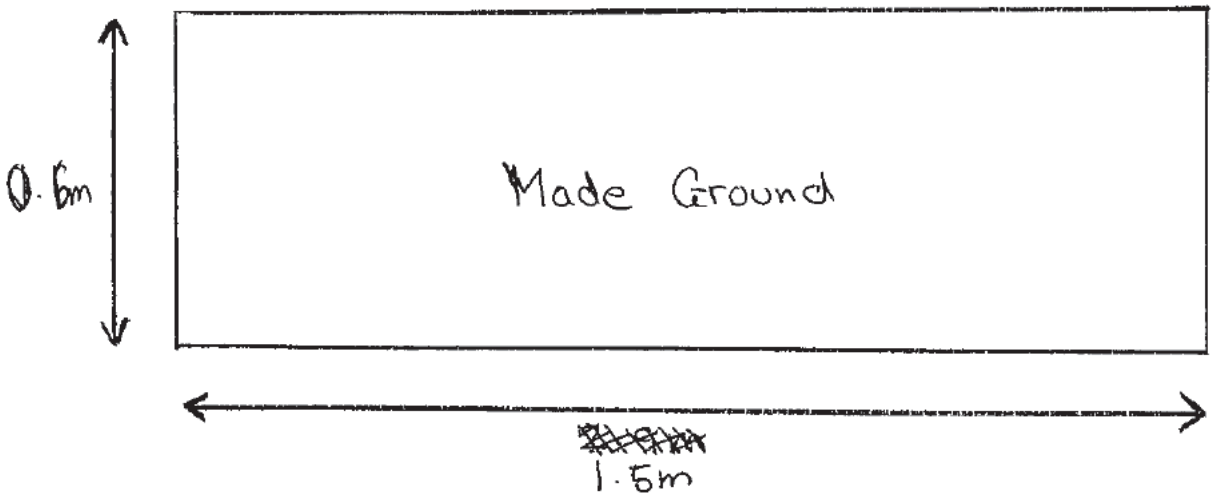


N.B. Brick wall encountered at 0.30 mbgl.

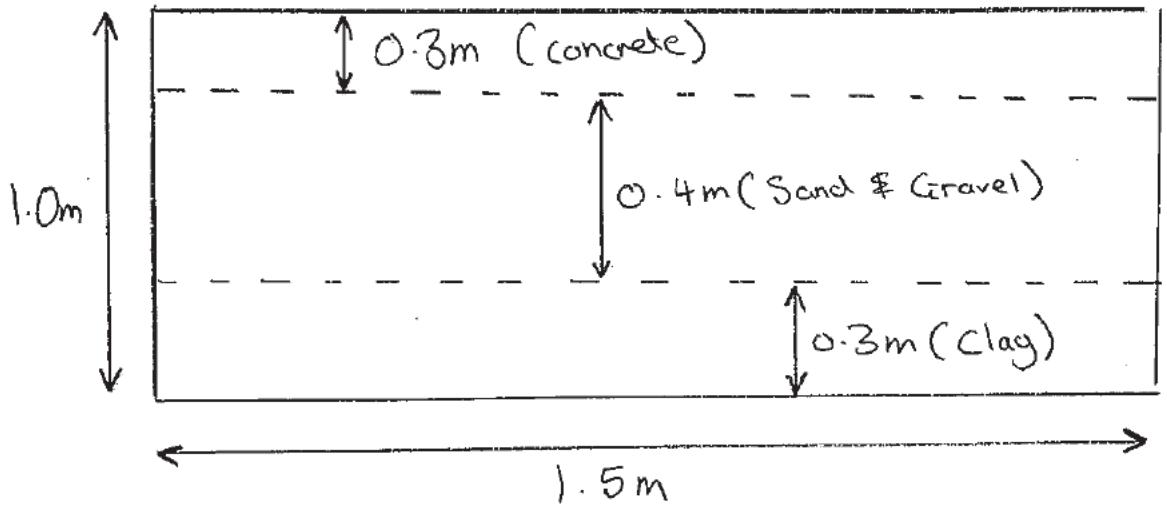
20698 - 102 Camley Street - Trial Pit Sketch

TP304

① Birds Eye Drawing



② Cross Section Drawing



N.B. No brick was encountered at this location

Attachment 4
Site Photographs

Photo 1 – TP301: Brick Wall Encountered

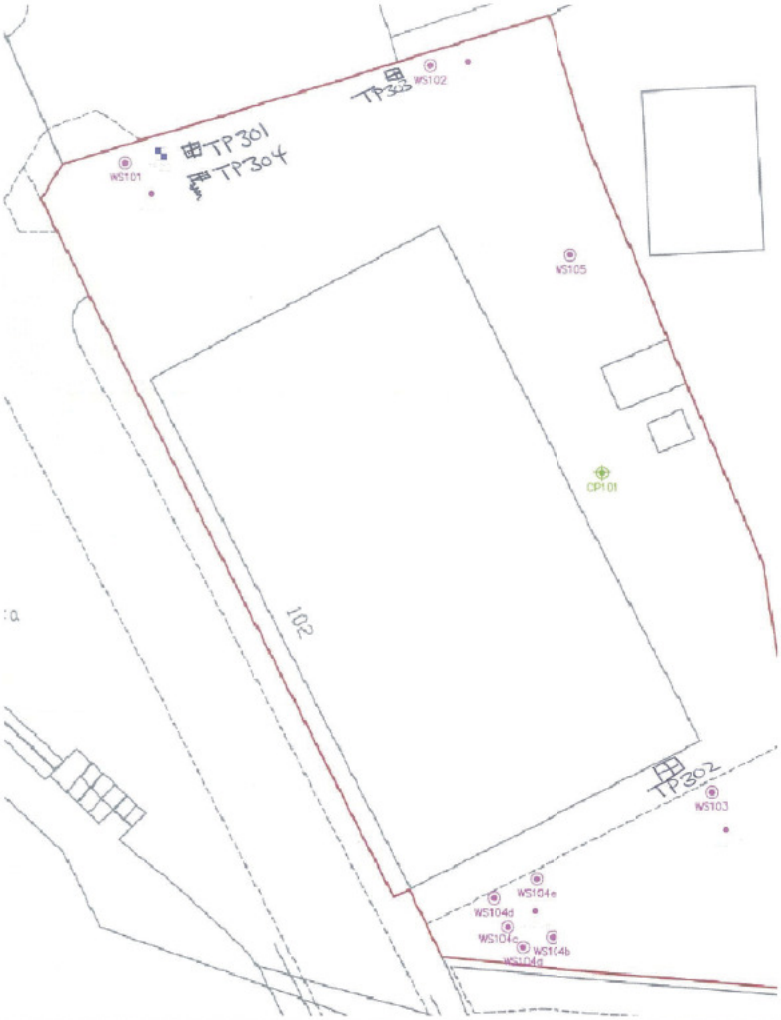
Photo 2 – TP302: Building Foundations

Photo 3 – TP303: Brick Wall Encountered

Photo 4 – TP304: No brick wall encountered

Photo 5 – TP302: Edge of building foundations

Attachment 5
Draft Exploratory Hole Location Plan



Key:

- Approximate Window Sample Probehole Location
- Approximate Trial Pit Location
- Approximate Cable Percussive Borehole Location

Notes:

P1	R0	30-10-2014	Revision	KD	PH
Phase	Revision	Date	Issue	Drawn	Authorised

Job No.: 20698 Date: 30-10-2014

Drawing No.: 002 Scale: N.T.S

Job Title: 102 Camley Street, Camden

Drawing Title: Exploratory Hole Location Plan

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