



Your Environment

SITE INVESTIGATION - NEW BRIGHTON ROAD, EMSWORTH

For Merco Place Ltd

Your Environment

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Report Number: YE2259, Date: January 2016

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	Name	Position	Signature	Date
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Approved:	Colin Hiscock	Director		January 2016
For and on behalf of YourEnvironment				

Issue	Date	Description	Prepared	Reviewed	Approved
01	5.1.2015	Draft for Comment	CSH	KJB	KJB

Executive Summary

YourEnvironment (YE) was instructed by Merco Place Ltd to conduct a Site Investigation (SI) at a site located at 8 New Brighton Road, Emsworth, West Sussex, PO10 7PS.

The purpose of this investigation was to provide a factual and interpretative report on our findings in respect to works completed by YE at the site.

The initial Site Investigation (YE2220) highlighted two exceedances of Lead and Arsenic, located around WS3 at a depth of 0.5m. Therefore, the aim of this additional Investigation was to delineate the extent of the contamination so that a removal strategy could be put in place.

We understand current plans for the redevelopment of the site include;

- Erection of two (2no.) semi and one (1no.) detached residential dwellings with associated garages, access road and soft landscaping areas.

A specific planning condition which has been attached to the redevelopment of the site by Havant Borough Council under reference APP/15/00638.

The site comprises an irregular shaped plot of mostly flat land located at New Brighton Road, Emsworth, West Sussex on a grid reference of 474993, 106470 on terrain which slightly inclines towards the south of approximately 2m.

All SI works were completed on November 26th 2015 under the supervision of a Geo-Environmental Engineer from YE. In summary the investigation included:

- A two man team completed a visual utility search, to check the route of any below ground services in close proximity to the proposed exploratory hole positions, using a CAT scan and lifting up of any man hole covers. Following the CAT scan, hand dug starter pits were completed to a depth of 1.2 metres below ground level (mbgl).
- Eight machine dug trial pits were advanced in the vicinity of WS3 in a circular pattern. They were advanced into the natural underlying ground where possible.
- Soil samples were removed from shallow sub surface locations, with further samples taken at depth at every 0.5mbgl or when the underlying stratum changed. Samples were subsequently placed in suitable containers including 1kg tubs and 250ml glass jars and placed in cool boxes with cool packs prior to storage within our *in-house* laboratory fridges and then subsequent forwarding to our designated laboratory for analysis.
- Upon completion, all exploratory holes, were back filled, compacted and made good to existing levels and finishes, with any surplus spoil bagged up and removed from site.

The majority of the trial pit locations contained Made Ground comprised of what appeared to be the remnants of a building. The Made Ground comprised mostly of brick, tile, metal and some concrete. Additionally, several in tact structures were encountered such as brick walls and some tiled floors.

A total of twelve (12no.) samples have been analysed by Messrs QTS Environmental Ltd in their UKAS and MCERTS accredited laboratory testing facility in accordance with laboratory protocol.

The testing completed comprised of a focused suite of heavy metals.

Four isolated exceedances were returned in the form of lead, both noted to be present within the shallow Made Ground identified, in comparison to the SGV of 450mg/kg. These elevated results were returned from TP1 at 0.2m (1,140mg/kg), TP4 at 0.15 (902mg/kg), TP8 at 0.1 (855mg/kg) and (2,780mg/kg).

*In respect of lead, which in the absence of an available guideline value the withdrawn SGV of 450mg/kg has been utilised.

From the testing carried out during this additional Site Investigation, contamination is situated at a maximum depth of 0.2mbgl. A review of the proposed redevelopment plans for the site indicate that these positions fall within the footprint of the proposed garden area and therefore should be removed. Although no contamination was found at a depth greater than 0.2mbgl it is proposed that the excavation should be a depth of 0.6m as the initial SI encountered contamination around WS3 at 0.5mbgl.

It seems apparent from the evidence on site that the Made Ground is contained within the locale of the historical building. Therefore, we propose that the shallow Made Ground is removed under the watching brief of an Environmental Consultant.

The excavation will be centred around WS3 and extended using visual means until all the shallow Made Ground has been removed from the footprint of the building. An excavation of approximately 10m x 5m x 0.6m deep is anticipated.

Validation should be carried out at the time of soils removal. It is proposed that samples are tested for a metals suite only. Sampling at a rate of 1 sample per 5 linear metre and at least 4 from the base of the excavation.

Upon completion of the remedial work, a Validation Statement detailing the works completed with relevant documentation including waste carrier notes, landfill certificates, topsoil certificates and any other pertinent documentation should be completed.

We trust this is sufficient for your requirements and should you have any questions please do not hesitate to contact the undersigned.

For YourEnvironment



Colin Hiscock
Director



Kevin Brown
Geo-Environmental Scientist

1.0 Introduction

YourEnvironment (YE) was instructed by Merco Place Ltd to conduct a Site Investigation (SI) at a site located at 8 New Brighton Road, Emsworth, West Sussex, PO10 7PS.

The purpose of this investigation was to provide a factual and interpretative report on our findings in respect to works completed by YE at the site.

The initial Site Investigation (YE2220) highlighted two exceedances of Lead and Arsenic, located around WS3 at a depth of 0.5m. Therefore, the aim of this additional Investigation was to delineate the extent of the contamination so that a removal strategy could be put in place.

YE take no responsibility for conditions which have not been revealed by the windowless sampler boreholes, or which occur between windowless sampler boreholes. Whilst every effort has been made to interpret the conditions between investigation locations, such information is only indicative and liability cannot be accepted for its accuracy.

The information contained in this report is intended for the use of the named client only (or their approved contractors). Should any part of this report be relied on by a third party, that party does so wholly at its own risk and YE disclaims any liability to such parties. Should the purposes for which the report is used, or the proposed use of the site change, this report may no longer be valid and further use of reliance upon the report in those circumstances shall be at the client's sole and own risk. 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. YE should in all such altered circumstances be commissioned to review and update this report accordingly.

2.0 Proposed Development

We understand current plans for the redevelopment of the site include;

- Erection of two (2no.) semi and one (1no.) detached residential dwellings with associated garages, access road and soft landscaping areas.

A specific planning condition which has been attached to the redevelopment of the site by Havant Borough Council under reference APP/15/00638.

Proposed redevelopment plans for the site have been provided to YE and these can be reviewed within [Appendix B](#).

3.0 Physical Setting

3.1 Site Information

The site comprises an irregular shaped plot of mostly flat land located at New Brighton Road, Emsworth, West Sussex on a grid reference of 474993, 106470 on terrain which slightly inclines towards the south of approximately 2m.

At the time of the walkover survey being undertaken, as part of the Phase 1: Desktop Study completed, the site is vacant with no buildings on the site apart from a very small brick meat smoker which has been partially demolished. The site is predominantly laid to soft standing grassland. Several large trees and multiple small trees of various species were found surrounding the site. Additionally, the road was lined with a hedgerow.

3.2 Geology

The relevant British Geological Survey records, indicate that the site is underlain by superficial deposits of Head Deposits are identified on the eastern portion of the site with the majority of the site noted to consist of River Terrace Deposits (undifferentiated). Head Deposits are generally comprised as variable deposits of impure Clay, Sands and Silts, locally gravelly. Head Deposits are generally variable and of low strength. In respect of River Terrace Deposits these are composed of an unstratified mixture of (locally clayey) sand and flint gravels.

The solid strata beneath the site are indicated to be the London Clay Formation which are predominantly argillaceous, slightly calcareous, grey to bluish grey silty to very silty Clay characteristically fissured, and brown where weathered.

3.5 Site History Summary & Risk

The earliest complete mapping (c.1866) indicates the entirety of the site being comprised of a larger arable field and large situated in a rural setting. Throughout the course of mapping reviewed limited historical development is noted on site, which was mainly confined to the extreme northwestern portion and in general was comprised of small detached structures. In mapping of 1952 these structures were replaced with two structures, one located in the northwest and a larger irregular shaped structure to the south thereof with the remainder of the site remaining undeveloped, which were presumed to be residential dwellings. These structures in mapping of 1991 were no longer observed, possibly associated with the construction of the adjoining A27, with the site observed during the walkover predominately laid with grass and large mature trees.

The surrounding environs are largely composed of residential dwellings and associated garden areas. A limited number of historical land uses have been identified from historical mapping such as Railway line (125m south), Corn mill (250m east), Gas works (250m south), Laundry (over 500m north) and Brick works (over 750m north). However, the distances from these features to the study site would negate their potential impact.

There are no records of artificial/Made Ground within 500m, with the nearest historical surface ground working feature located at 223 to 232m periphery and is recorded as being a pond. In respect of current ground workings the nearest is identified 732m northwest. Furthermore, the nearest potentially infilled land is located 223m east for a pond with the nearest recorded landfill site located at 846m northeast,

A limited number of historic and current potentially contaminative uses were identified such as a nursery 68m northwest, railway infrastructure located 140 to 161m southwest, a garage 201m southwest, an unspecified tank 71m north, historic coach works 324m south and gas works 248 to 252m south. However, again these land uses were discounted as the distances from these features to the study site would negate their potential impact.

4.0 Fieldworks

4.1 Site Investigation

All SI works were completed on November 26th 2015 under the supervision of a Geo-Environmental Engineer from YE. In summary the investigation included:

- A two man team completed a visual utility search, to check the route of any below ground services in close proximity to the proposed exploratory hole positions, using a CAT scan and lifting up of any man hole covers. Following the CAT scan, hand dug starter pits were completed to a depth of 1.2 metres below ground level (mbgl).
- Eight machine dug trial pits were advanced in the vicinity of WS3 in a circular pattern. They were advanced into the natural underlying ground where possible.
- Soil samples were removed from shallow sub surface locations, with further samples taken at depth at every 0.5mbgl or when the underlying stratum changed. Samples were subsequently placed in suitable containers including 1kg tubs and 250ml glass jars and placed in cool boxes with cool packs prior to storage within our *in-house* laboratory fridges and then subsequent forwarding to our designated laboratory for analysis.
- Upon completion, all exploratory holes, were back filled, compacted and made good to existing levels and finishes, with any surplus spoil bagged up and removed from site.

The positions of exploratory holes in relation to the existing site layout can be reviewed within [Appendix C](#). Photographs taken during the SI can be referred to in [Appendix D](#).

5.0 Visual and Olfactory Observations

The majority of the trial pit locations contained Made Ground comprised of what appeared to be the remnants of a building. The Made Ground comprised mostly of brick, tile, metal and some concrete. Additionally, several intact structures were encountered such as brick walls and some tiled floors.

6.0 Contamination

6.1 Soil Testing

A total of twelve (12no.) samples have been analysed by Messrs QTS Environmental Ltd in their UKAS and MCERTS accredited laboratory testing facility in accordance with laboratory protocol.

The testing completed comprised of a focused suite of heavy metals.

The results of this laboratory testing have been compared to the Soil Guideline Values (SGVs) as well as the CIEH 'LQM' guideline values for inorganic and organic contaminants in soils.

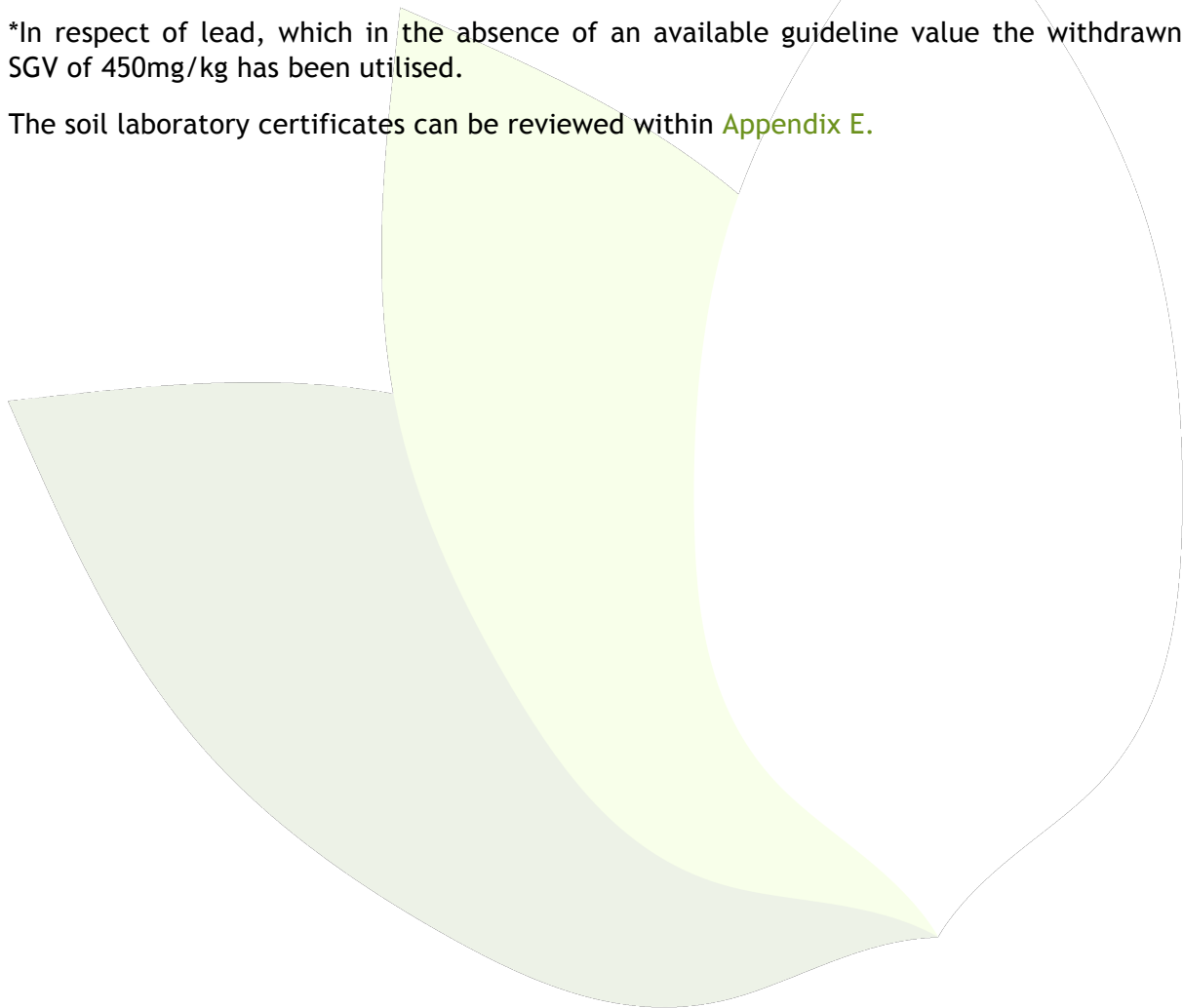
The proposed development of the site is intended to comprise of a residential dwelling and therefore screening has been made against a land use of 'residential'.

6.2 Soil Testing

Four isolated exceedances were returned in the form of lead, both noted to be present within the shallow Made Ground identified, in comparison to the SGV of 450mg/kg. These elevated results were returned from TP1 at 0.2m (1,140mg/kg), TP4 at 0.15 (902mg/kg), TP8 at 0.1 (855mg/kg) and (2,780mg/kg).

*In respect of lead, which in the absence of an available guideline value the withdrawn SGV of 450mg/kg has been utilised.

The soil laboratory certificates can be reviewed within [Appendix E](#).



7.0 Recommendations

The following recommendations are based on the results of chemical laboratory testing to date.

7.1 Soils

Limited elevated concentrations inorganic contamination has been identified from within the shallow Made Ground identified during the SI in the form of lead.

No elevated concentrations of determinands were returned from the underlying natural soils.

From the testing carried out during this additional Site Investigation, contamination is situated at a maximum depth of 0.2mbgl. A review of the proposed redevelopment plans for the site indicate that these positions fall within the footprint of the proposed garden area and therefore should be removed. Although no contamination was found at a depth greater than 0.2mbgl it is proposed that the excavation should be a depth of 0.6m as the initial SI encountered contamination around WS3 at 0.5mbgl.

It seems apparent from the evidence on site that the Made Ground is contained within the locale of the historical building. Therefore, we propose that the shallow Made Ground is removed under the watching brief of an Environmental Consultant.

The excavation will be centred around WS3 and extended using visual means until all the shallow Made Ground has been removed from the footprint of the building. An excavation of approximately 10m x 5m x 0.6m deep is anticipated.

7.4 Groundworkers

Elevated concentrations of inorganic contaminants have been identified from works undertaken during our SI, these contaminants pose a risk to site workers. Therefore all construction workers should be made aware of the risks during a site induction.

All site workers would be expected to be protected as part of the standard protocol, by use of the appropriate PPE e.g. gloves, overalls and wash mess facilities. Reference should be made to the relevant health and safety regulations.

7.5 Watching Brief

It would be prudent to maintain a watching brief during the course of the development, particularly during the ground works stage.

During any ground works an appraisal of the exposed soils should be made by the on-site manager. If any material is noted to show visual and/or olfactory sign of contamination this material should be stockpiled separately and tested prior to its appropriate removal of site or re-use where necessary. A suitably qualified environmental specialist should be contacted to advise what further work is required.

7.6 Services

Given that new services will be installed as part of the redevelopment of the site, we would recommend the local water board be contacted to determine their specification for the type of pipework which should be used on this site.

All services and in particular potable water supply pipework should comprise of material that is resistant to attack and degradation to chemical attack.

Further information can be found within the Water Regulations Advisory Scheme. *Information and Guidance Notes for the Selection of Materials for Water Supply to be laid in Contaminated Land.*

7.7 Surface Water

It should be noted that the Environment Agency does not recommend that soakaways are placed within Made Ground, potentially contaminative land or in ground previously identified as contaminated.

7.8 Muckaway

If any soils are to be removed off site, a copy of the laboratory results should be given to the waste contractors and/or landfill operators involved to ascertain their requirements with regards to removal of soils from this area of the site and the acceptance of the waste at landfill. It may be prudent to undertake Waste Acceptance Criteria (WAC) analyses on the soils to be removed.

All materials must be transported in compliance with the Duty of Care Regulations by authorising movements with Carrier's individually numbered Duty of Care conveyance notes, complete with the appropriate EWC Codes. All relevant dockets will need to be kept to provide evidence of the removal as these may be required as part of a Validation Report.

7.9 Validation/Verification

Validation should be carried out at the time of soils removal. It is proposed that samples are tested for a metals suite only. Sampling at a rate of 1 sample per 5 linear metre and at least 4 from the base of the excavation.

Upon completion of the remedial work, a Validation Statement detailing the works completed with relevant documentation including waste carrier notes, landfill certificates, topsoil certificates and any other pertinent documentation should be completed.

The Validation Statement is produced by a qualified Environmental Consultant to provide a statement that the development and any remedial works have been completed to the required standard and that the site is now suitable for the intended use and poses no risks to various receptors.

8.0 Limitations

This report has been prepared by YE with all reasonable skill, care and diligence. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources.

The opinions given in this report have been dictated by the finite data on which are they based and are relevant only to the purpose for which the report was commissioned.

Information reviewed should not be considered exhaustive and has accepted in good faith as providing true and representative data with respect to site conditions. Should additional information become available which may influence the opinion expressed in this report, YE reserves the right to review such information and, if warranted, to alter the opinions accordingly.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed.

The recommendations contained in this report represent our professional opinions. These opinions were arrived at in accordance with currently accepted industry practices at this time and as such is not a guarantee that the study site is free of hazardous conditions.

This report has been prepared solely for the use of the named client, and may not be relied upon by other parties without written consent from YE. YE disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.