BMC

BELL MUNRO CONSULTING LTD.

PHASE 1 RISK ASSESSMENT OF LAND AT WALKER'S CROFT MANCHESTER FOR STEPHENSON BELL LTD AUGUST 2006

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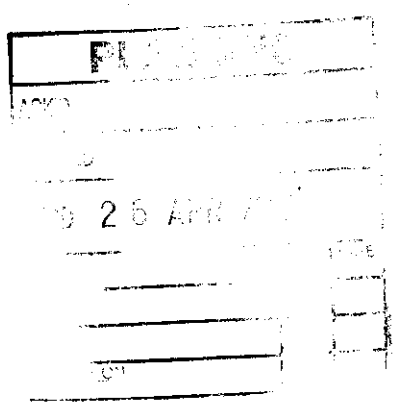

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1.0 Introduction

1.1 Bell Munro Consulting Ltd have been commissioned by Stephenson Bell Ltd to undertake a Phase 1 Risk Assessment of an area of land bounded by Walker's Croft, Hunt's Bank and Victoria Station Approach, Manchester M3 1NY. The National Grid Reference of the centre of the site is 383940, 398950.

1.2 It is proposed to develop the existing site to form a 7 - 9 storey high new School of Music Building. The purpose of the report is to undertake an assessment of the likelihood of Contamination being present on the site which would require either remediation or specific construction to mitigate the effects of this contamination on Construction Personnel, End Users or the Environment. The report also highlights the expected Ground Conditions at the Site and gives recommendations regarding Site Investigation works which will be required in order to devise a suitable foundation solution for the proposed development.

1.3 The report has been compiled using Environmental Information of the Site and surrounding area, geology of the Site, historical land use of the Site and neighbouring area and current land use of the Site and surrounding area.

1.4 The assessment and interpretation of the factual data obtained as part of this report have been undertaken in accordance with standard consulting practice and with current National and International Guidance.

1.5 The conclusions and recommendations given in this report are limited to those which can be made on the findings of information provided by third parties. No responsibility can be accepted by Bell Munro Consulting for inaccuracies in information supplied by a third party.

1.6 This report is provided for the sole use of the addressee and is confidential to them and their professional advisers unless previously agreed otherwise. Future new practices, legislation and new information may require a re-interpretation of the report and Bell Munro Consulting reserve the right to revise any conclusions and recommendations contained herein following further information which may become available.

2.0 Site Location and Description

2.1 The site consists of a triangular section of land bounded by Walker's Croft, Hunt's Bank and Victoria Station Approach, Manchester M3 1NY. The National Grid Reference of the centre of the site is 383940, 398950. A Site Location Plan can be found in Appendix A.

2.2 The Site currently comprises a cobbled road abutting the boundary with the existing Chetham's School of Music Buildings, a hard standing area which is surrounded by a steel fence and is currently used as a Car Park and the remainder of the Site consists of banked grassed areas containing numerous mature trees and wild berry bushes. The site falls towards the centre in a 'bowl' formation and two sets of steps up to Victoria Station Approach are situated at the Eastern side of the Site. A fenced off area adjacent the most Eastern steps gives access to Railway Plant Property and it was noted the existing retaining wall adjacent the entrance area was suffering from structural distress although steel posts and cross beams had been added to restrain the wall (see photographs in Appendix G). The River Irwell is situated to the West of the Site.

2.3 Existing Services Information in the vicinity of the Site are appended although it is recommended a thorough services search is made prior to commencing work on Site to reduce the possibility of undetected existing services being present on the site.

3.0 Historical Setting

3.1 Past editions of the Ordnance Survey have been obtained for the area of the development, selected extracts of which are appended. The main features of note are:

- 1892 Ordnance Survey shows numerous buildings on the site with Chetham Hospital and a Gymnasium to the South of the Site, Victoria Station and Exchange Station to the North of the Site and Salford Bridge to the West of the Site.

- 1908 Ordnance Survey shows a tank situated on the Site and new Housing and Public Houses to the East of the Site. Expansion of Victoria Station is shown to the North East of the Site.

- 1933 Ordnance Survey shows little change on the Site and surrounding area.

- 1951 Ordnance Survey shows a tank and also a large chimney on the Site and the School at the Southern boundary is now described as a ruin. A Printing Works is indicated to the South of the Site.

- 1975 Ordnance Survey shows all the buildings on the Site have been demolished and the Site is in it's current form with steps and a banked area leading down to a Car Park. The Printing Works and surrounding buildings to the South of the Site have also been demolished. Exchange Station is now shown as disused.

- 1992 Ordnance Survey shows the Site little changed from the 1975 edition.

4.0 Site Geology

4.1 The Published British Geological Survey Maps (extracts enclosed in Appendix E) show the site underlain by Glaciofluvial Deposits of Sand and Gravel which Overlies Sandstone of the Sherwood Sandstone Group.

4.2 The Published British Geological Survey indicates a Fault Line in close proximity to the site. The Fault Line is indicated to the North East of the Site and extending parallel to Victoria Station Approach.

5.0 Coal Mining

5.1 A Coal Authority Report is appended and the main points to note from the report are:

- The site is not within the zone of likely physical influence on the surface from any past underground coal workings.

- The site is not within the zone of likely physical influence on the surface from any present or planned underground coal workings.

- The site is not within 200m of the boundary of a current opencast site.

- Reserves of coal do exist in the locality of the Site which could be worked in the future, subject to feasibility, licences and planning consent.

6.0 Environmental Issues and Hydrology

6.1 Environmental Data for the Site and surrounding areas are to be found in Appendix C. The main points to note from the data are:

- The Site is within a Zone 3 Floodplain.

- Geological Information shows the Site is underlain with soils of High Leaching Potential which overly a Major Aquifer.

- The Site is not within 500m of a Local Authority Recorded Landfill Site or a Registered Landfill Site.

- An inactive Waste Disposal Service is situated 193m from the Site and an inactive Diesel Service is situated 252m from the Site. An active Electrical Manufacturer is situated 77m from the Site and the active Railway is situated 40m from the Site.

- No Fuel Station Entries are recorded within the 250m Buffer Zone of the Site.

- Geology records indicate the Development will not require Radon Protection Measures.

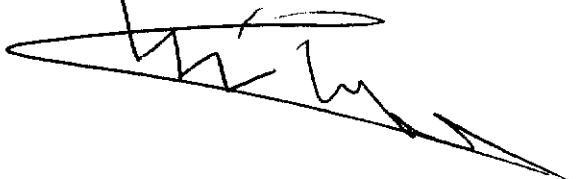
7.0 Preliminary Conceptual Model and Recommendations

7.1 Our conceptual model of the site with regard to contamination issues is built around the 'Source, Pathway, Receptor' concept whereby a contaminant (Source) comes into contact with or affects an entity for instance end users / watercourses (Receptor). The means by which the contaminant reaches or affects the Receptor is called the Pathway. The relationship mentioned above is called a Pollution Linkage and for an environmental or health risk to exist, all three elements of the Pollution Linkage must be present. The information collated in the report has been assessed to determine the likelihood of a pollution linkage existing on the site.

7.2 The report has identified buildings have been present on the site for a long period of time but were demolished between 1951 and 1975. A tank and chimney were noted on the Site in the past and it is possible these were associated with some Industrial process on the Site. It is not known if the tank has been removed from the Site or how it has been treated if it has been left on the Site. From the information gathered there is a small possibility of local chemical contamination of the site from past fuel spillages in the Car Park area although it is thought the impact of such events would be minor due to the hard standings on the site. It is thought areas of fill may be present on the site resulting from backfilling the demolition rubble from the buildings which previously occupied the site. Lime mortar and plaster is likely to have been used in these buildings which can react with slightly acidic ground water to form Carbon Dioxide gas.

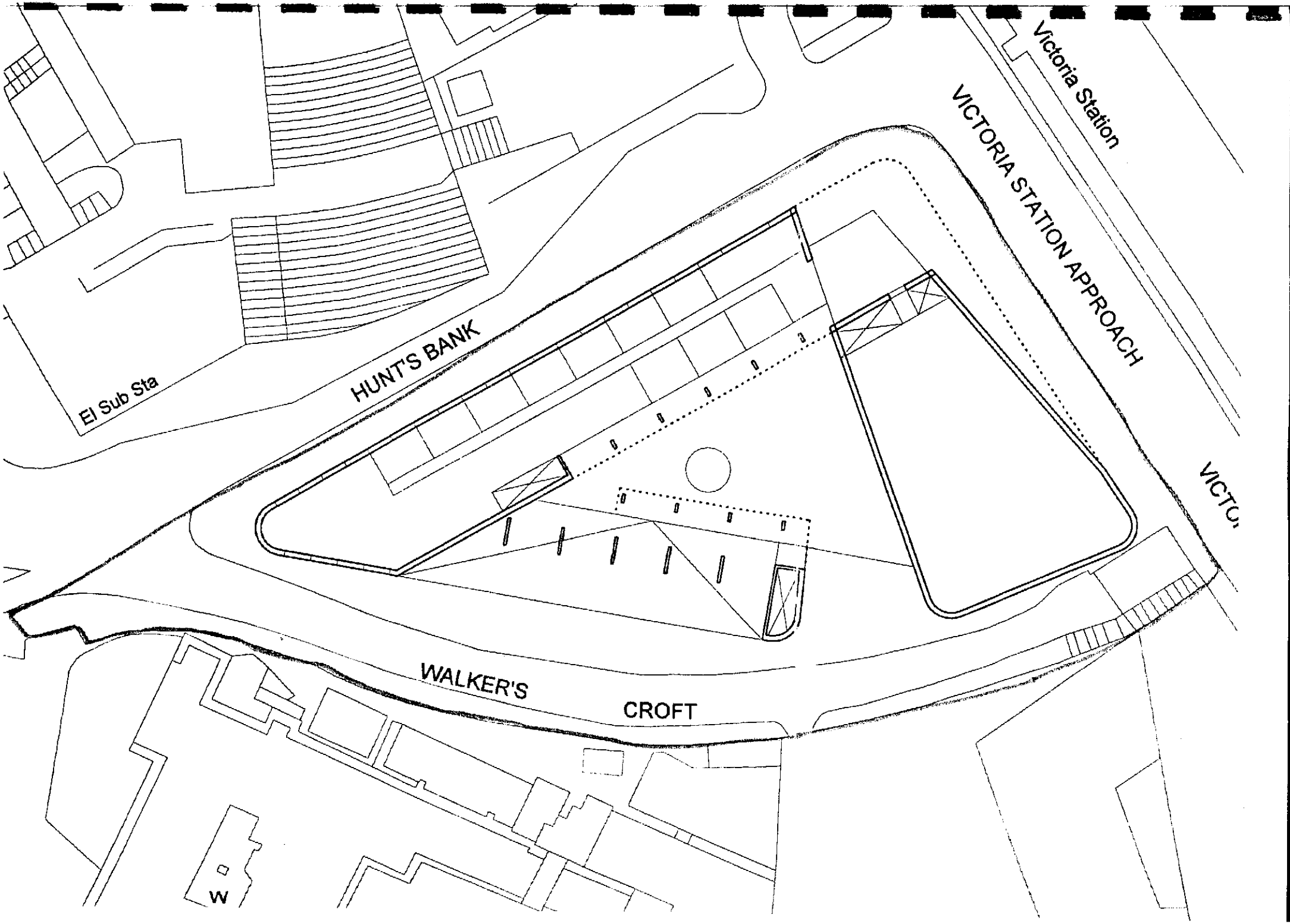
7.3 From the information gathered it is thought the risk of chemical contamination of the site is low and also the risk of gas contamination is low although both can not be ruled out as Sources of contamination. The Phase II Site Investigation should include for chemical testing of soil samples throughout the site at varying depths below ground level and particularly in the area of the past tank and chimney and for a series of gas monitoring readings to determine if any gas contamination is present. The gas readings should be taken on at least six occasions with two of the readings taken when atmospheric pressure is low. Trial Pits and Boreholes should be undertaken to determine the depth and condition of the underlying Sandstone and also to determine if the tank has been removed, ground and fill conditions above the Sandstone and to determine if any of the foundations or basement slabs of the original buildings have been left in-situ which could give rise to complications during the foundation construction process.

Report Prepared By:



Christopher J. Munro B.Eng.(Hons).,C.Eng.,M.I.Struct.E.

Appendix A


Victoria Station
VICTORIA STATION APPROACH
HUNT'S BANK
El Sub Sta
WALKER'S
CROFT
W

Appendix B



Envirocheck®

A Landmark® product

CLIENT DETAILS Envirocheck Order No. EC20182318_2_1

Customer Ref: Mr C Munro,J713
Bell Munro Consulting
Unit 69 The Greenhays Centre
Manchester
M18 8JJ

SITE DETAILS Grid Reference 383940 398950

Land at Walker's Croft
Chetham's School of Music

Manchester
M3

Historical Map Legend

Quarry
Sand Pit
Marsh
Reeds
Gravel Pit
Clay Pit
Rough Pasture
Furze
Refuse Heap
Shingle
Osiers
Ford
Railway crossing River or Canal
Railway crossing Road
Level Crossing
Embankment
Cutting
Road crossing Railway
Road over single Stream
Road over River or Canal
Arrow denotes flow of Water

Ordnance Survey County Series 1

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1890's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1890 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given on the right is often some years later than the surveyed date. Before 1930, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

LANCASHIRE AND FURNESS
Published 1892
Source map scale - 1:2,500

1892

Date(s) of Publication 1 of 27

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