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REMEDIATION METHOD STATEMENT

FOR DEVELOPMENT OF LAND

AT

FORMER FIRE STATION, MANCHESTER ROAD, MARSDEN

FOR

SB HOMES LTD

REF: E17/7092/RS001

DATE: MAY 2019

Prepared by:

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Haigh Huddleston Associates is the trading name of Haigh Huddleston Associates Limited
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1.0 INTRODUCTION

1.1 Haigh Huddleston & Associates have been requested by SB Homes LTD to provide a remediation statement for the proposed development at the Former Fire Station, Manchester Road, Marsden.

1.2 The purpose of the document is to specify the remediation philosophy for the site and to specify fill materials to be used for the controlled backfilling and capping of the site.

1.3 HHA undertook a geotechnical investigation on site in July 2018. The investigation included the excavation of a series of trial pits from which soil samples were taken for chemical and physical analysis. In addition, window samples were undertaken, some of which were installed with gas monitoring wells. The results of the investigation were presented and discussed in the Desk Study and Ground Investigation Report, Ref: E17/7092/R002 dated April 2019.

1.4 The above report has been utilised to compile this Remediation Statement.

1.5 Whilst the reports show significant levels of contamination it is possible that further unknown contamination exists on site that will be revealed following or during site clearance and construction works commence.

1.6 If during the remediation work or ground works any other suspected contaminated soil/material is found, that has not been identified in the original ground investigation, then remediation works on site should cease and the Local Planning Authority notified in writing within two days. The material should be chemically analysed and its location and extent on site should be accurately surveyed and documented. Any specific remediation proposals should then be agreed with the relevant overseeing bodies, i.e. NHBC, Environment Agency and Local Environmental Health Department, and a revised Remediation Strategy submitted and approved in writing by the Local Planning Authority. The remediation works on site should then proceed in accordance with the approved revised strategy.

1.7 The remediation method statement is subject to the approval of the Local Planning Authority, NHBC and Environment Agency. Approval in writing should be obtained from the above parties prior to work commencing on site.

1.8 The report has been produced on behalf of SB Homes LTD, and no responsibility is accepted to any Third Party. Any Third Party wishing to rely on the report and its contents should seek express written authorisation from Haigh Huddleston Associates.

2.0 THE SITE

2.1 The site is located at the former fire station, Manchester Road, Marsden. It is situated around Ordnance Survey grid reference 404939, 411461. A site location plan is included in the Appendix of this report.

2.2 The site is irregular in shape and divided into four separate areas by steel palisade fences and concrete post and chain link fences. The overall site area is approximately 0.30ha.

2.3 The eastern half of the site is primarily overgrown hard standing with the single storey stone constructed fire station adjacent the northern boundary. In the north west corner is an area of overgrown gravels surrounded by a steel palisade fence. A gas governor is located in the south of the site, in an area of hardstanding that is separated from the remainder of the site by a concrete post and chain link fence. The area to the east of this gas governor consists of overgrown made ground.

2.4 Significant mature tree and shrub growth is noted in the western area of the site.

2.5 The eastern, southern and western boundaries are formed by a stone wall. The north western boundary with the property to the north west is formed in a mix of chain link fence, concrete panel fence and steel palisade fence.

2.6 The site slopes gently from east to west at an average grade of 1 in 53. A high point of approximately 188.500m AOD is located in the eastern corner of the site and a low point of approximately 186.86m towards the western corner.

3.0 SUMMARY OF PREVIOUS INVESTIGATIONS

3.1 Site investigations were undertaken via trial pits and window samples.

3.2 The fieldwork generally proved a surface layer of made ground and fill material, underlain by soft silty clays and sands, as well as occasional thin layers of peaty material, loose gravels and alluvial materials.

3.3 The window samples generally proved 0.4-1.0m of fill consisting of gravels, sandstone and ash, underlain by grey brown clay, with refusal encountered at 3.0-3.9m below existing ground levels.

3.4 The sides of all seven trial pits remained stable throughout investigation. The trial pits were only left open for a short duration of time.

3.5 Elevated levels of contaminants were recorded in the samples of material taken from across the site, as well as in a water sample taken from TP01. The following contaminants were detected in elevated levels.

- Arsenic
- Lead
- Sulphate
- Sulphide
- Benzopyrene
- PAH (total)
- EPH (total)
- Copper (water sample only)

3.6 Three of the window samples were fitted with standpipes in order to monitor ground gas. A pre-existing gas monitoring station was also used. The gas monitoring undertaken on site showed a maximum carbon dioxide concentration of 4.1% with no methane detected. A maximum flow rate of 1.1 l/hr was recorded for all the boreholes.

3.7 During site investigation works, two large buried cylindrical structures were uncovered, identified as former gas holders, one in the approximate middle of the site, made of

metal, and the second in the south west of the site, constructed from stone.From the historical plans, a third gasholder may have existed in the north of the site, requiring further investigation. These will need to be excavated and removed before site works can commence. It is noted that there is potential for contaminated material to exist below the base of the gas holders. The stone from the south western gas holder may be suitable for re-use on site.

3.8 **RECEPTORS**

The possible receptors considered in this report are

i) Residential end users.
ii) Construction and maintenance workers.
iii) Controlled waters.

i) Residential end users.

Based on the chemical results obtained, and the proposed land use of the site it is considered that there is currently a **Moderate** risk to end users from relatively shallow ground contamination on-site.

Three elevated levels of each of Benzo(a)pyrene, EPH (total) and PAH (total) were found in the made ground of TP02 at 0.60m, TP06 at 0.50m, and TP07 at 0.40m.

Two elevated levels of Sulphate (0.65 mg/kg and 5.5 mg/kg) were recorded in the made ground at 0.6m in TP02.

Elevated levels of sulphide were found in TP05 at depths of 0.60m and 1.80m (260mg/kg and 1200mg/kg), along with an extremely elevated level in WS03 at 0.50m, of 10000mg/kg, associated with a white residue in the collected sediment samples. This is primarily a risk of corroding steel reinforcement.

Elevated levels of Arsenic (49mg/kg) and Lead (2600mg/kg) were recorded in the made ground at 1.50m in TP01, and the ashy clay fill at 1.80m in TP05. These potentially could pose risks to the health of site users if they are not effectively mitigated.

It is proposed to excavate and remove the gas holder constructions so they do not interfere with the proposed

We would recommend that made ground should be removed from any proposed soft landscaped areas on site, to accommodate a minimum 600mm capping layer. It is understood that the re-engineering of the ground in the south western part of the site will effectively remove any contaminated material. Any material excavated should be transferred to an appropriate storage facility.

The gas monitoring undertaken on site showed a maximum carbon dioxide concentration of 4.1% with no methane detected. A maximum flow rate of 1.1 l/hr was recorded for all the stations. Based upon the NHBC traffic light system in conjunction with CIRIA C665, when calculating the Gas Screening Value obtained by multiplying the maximum gas concentration by borehole flow rate, the site can be characterised as **Green**, or **CS1** by BS 8485:2105 Table 2 due to the low carbon dioxide and flow rate being recorded.

ii) Construction and Maintenance Workers.

It is considered that there is a **low** risk to construction and maintenance workers from the redevelopment of the site.

Construction workers should always wear PPE including overalls, boots and gloves when handling the contaminated materials onsite. In addition eating, drinking and smoking should be restricted to designated areas where the above hygiene facilities are available.

iii) Controlled Waters

There are thirteen recorded surface water abstraction licenses recorded within 250m of the site. Two are located 118m north of the site, one is located 183m north east of the site and the remaining ten are located 237m south east of the site.

Elevated PAH Total, Benzopyrene and copper results have been identified in the contamination testing of a sample of groundwater from TP01. A relatively impermeable clay strata has been found to underlie the site. No elevated contaminants have been identified within the natural sands or clay deposits underlying the site. This suggests

that the contamination, has been contained by the clay deposits. Only limited perched ground water was encountered during the trial pit investigation. Due to the above, we would conclude that the risk to controlled waters of leaching contaminants from the site is low.

3.9 From the above it is evident that a source/pathway/receptor linkage is plausible at the location. Therefore further remedial action will be required to either;

i) Break the pathway by providing an effective capping blanket ie encapsulating the contamination.

ii) Remove the contamination from the site.

iii) Treat the contamination on-site to a satisfactory level to ensure it is safe to remain on-site.

4.0 CONTAMINATION ASSESSMENT

4.1 Elevated levels of Benzo(a)pyrene and PAH total are noted in TP02 in the southwest of the site, as well as TP06 and TP07 in the northeast of the site, likely to be associated with locations where vehicles have previously been stored.

4.2 Elevated levels of Arsenic (49mg/kg) and Lead (2600mg/kg) were recorded in the made ground at 1.50m in TP01, and the ashy clay fill at 1.80m in TP05. These could potentially pose risks to the health of site users if they are not effectively mitigated.

4.3 Elevated levels of PAH Total, Benzopyrene and Copper were found in a water sample taken from TP01. It is considered unlikely that this will pose significant risk to groundwater due to the impermeable ground underlying the site, in particular the slabs thought to be present at the base of the gas holders, preventing leaching, as well as the location of the closest groundwater abstraction point being over 100m away from the site.

4.4 The most significant contamination is shown in the south eastern area of the site, where it is proposed to construct the largest block of flats (Building A). It is likely that the contamination pathways in much of the site will be severed by the tarmacking of ground for roads and pavements. However, it will be necessary to remediate the area, in order to prevent contamination reaching site users through any on site landscaping.

4.5 At present, we would recommend that made ground should be removed from any proposed soft landscaped areas on site, to accommodate a minimum 600mm capping layer. It is understood that the re-engineering of the ground in the south western part of the site will effectively remove any contaminated material. Any material excavated should be transferred to an appropriate storage facility.

4.6 In addition to the above it is worth noting that the finished floor level for the development is lower than the existing ground level. This will essentially necessitate the removal of an average 500mm depth of existing site level to accommodate. Therefore, an additional 600mm of the remaining material will need to be removed from site to accommodate the proposed 600mm minimum clean capping. Since the majority of the contamination on site is within the made ground close to the surface, this will

effectively remove the majority of the contamination. We would therefore estimate a conservative 1200-1500mm strip of surface material across the site.

4.7 During the removal of the made ground it is proposed to remove the gas holder constructions from site, samples should be taken for chemical analysis from the base and sides of the excavations.

4.8 A white residue, corresponding with extremely elevated levels of sulphide was encountered while undertaking TP05 and WS03. If any of this residue is encountered during site works, it should be removed from site and transferred to an appropriate waste site, as per section 10.3.13 of this report. Furthermore, any ground encountered with an odour of hydrocarbons should be removed in the same manner.

4.9 No clean topsoil has been found on site. An amount of topsoil and subsoil sufficient to implement a minimum 600mm capping layer will therefore need to be imported to the site for use in landscaped areas.

4.10 Should any additional suspected areas of contamination be exposed during site construction, an engineer should be contacted to determine if additional chemical testing should be undertaken. The on-site staff should maintain a photographic record and dates of any exposed contaminated material.

4.11 All imported material should be tested for the range of contaminants listed previously in Table 4. Only material found to be below published trigger levels should be deemed uncontaminated and accepted for use on site.

4.12 If the imported material is from a Greenfield site, a minimum of 3 samples or 1 per 250m3 of imported material should be taken for testing, whichever is greater. If it is from a brownfield site, a minimum of 6 samples, or 1 per 100m3 of imported material should be taken for testing, whichever is greater. Material provided by a commercial supplier should be certified to the same level of testing, with the certificate less than two months old.

4.13 All imported certified material should be placed immediately. If this is not possible, or the material is not certified and sampling is to be carried out prior to being laid, it should

be securely stored on site prior to use to prevent possible contamination from any materials on site.

4.14 The areas of made ground removed off site should be taken to a licensed waste site and full documentation should be obtained. Any material to be taken off-site should be suitably quarantined prior to removal to prevent cross contamination. Any relevant chemical test results should be given to the landfill operator, so that they can determine if this material is suitable to be disposed of in their licensed landfill.

5.0 REMEDIATION PHILOSOPHY & SEQUENCE OF WORKS

5.1 All existing services and drainage systems should be identified on site and protected throughout the remediation works. Existing land drainage routes are indicated on the plan to the rear of this report. Service providers should be contacted regarding the closing down and removal of any services that are not to be retained on site.

5.2 Prior to construction commencing, staff and construction workers should be made aware of contaminated materials on site and should follow the Health & Safety Procedures identified in the rear of this report.

5.3 The remediation of the site will be carried out in two phases. Firstly, Phase A will include the remediation of the northern and eastern parts of the site, which are currently accessible. Investigation of the potential third gas holder, located in the western corner may also be commenced in this phase. Phase B will commence once the western part of the site is made fully accessible, and will involve the remediation of this area.

5.4 The façade of the fire station on the northern site boundary is to remain in place. Ground slab of the existing fire station building to be broken out and removed.

5.5 Exposed material from beneath gas holders and ground slab to be sampled for contamination testing prior to site regrading.

6.0 PROPOSED PROGRAMME OF DEVELOPMENT WORKS

6.1 All existing services and drainage systems should be identified on site and protected throughout the remediation works. Service providers should be contacted regarding the closing down and removal of any services that are not to be retained on site.

6.2 The existing ground floor slab of the existing fire station building should be broken out and removed from the site as the first stage of the remediation works.

6.3 Contamination was found in the samples of surface materials taken across the site. In the first phase of the remediation works, this contaminated material is to be scraped and removed from the northern and eastern parts of the site, to a depth of 1200-1500mm BGL. At this point, the potential third gas holder in the west of the site should be investigated, however it is unlikely that it will be possible to remove the construction if it is found, due to the limited access to the western area of the site.

6.4 Surface material should be stockpiled behind protective fencing. Further sampling will be required to provide a robust sample set confirming it's suitability for re-use on site.

6.5 The metal perimeter and stone base of the gas holder in the north of the site to be removed, and re-usable materials stockpiled. Samples to be taken from the base and sides of the excavation for chemical analysis.

6.6 Piling mat to be constructed to enable the construction of the foundations for the development.

6.7 Following the construction of apartment buildings, all soft landscaped areas to receive a minimum 600mm thick clean capping layer, consisting of 450mm subsoils, and 150mm clean topsoil.

6.8 Once full access to the western area of the site is possible, the remediation of Phase B May commence, and steps 6.3-6.7 should be repeated for the western area. It should be noted that the gasholder in the west of the site is likely to be 5-6m deep (to be confirmed by further investigation), and will require pumping to remove the perched groundwater within it. The fill material from within this gasholder will need to removed

and crushed, before the stone perimeter and base can be excavated and stockpiled for re-use. These steps may also be required if the potential third gasholder is discovered.

7.0 CAPPING LAYER CONSTRUCTION

7.1 Contamination was found in the samples taken across the site. Furthermore, in many places on site, the proposed ground levels for the development are below the existing levels. In order to both remove the contamination, and enable the construction of the capping layer, 1200-1500mm of surface material should be scraped across the site. A 600mm thick clean capping layer consisting of 150mm clean topsoil growing medium and 450mm of clean subsoils should then be implemented. The removal of the contaminated material should be undertaken and validated by an engineer's visual inspection and photographic evidence.

7.2 Should there be a requirement to import materials on to the site, these materials should comply with Section 10.0 of this documentation.

7.3 All material excavated from the contamination hotspot to accommodate the clean capping layer should be immediately stockpiled to prevent cross-contamination.

7.4 Full documentation including duty of care certificates should be obtained to confirm the removal of any material from site. These should be included within any final validation report.

8.0 GAS AND VAPOUR PROTECTION WORKS

8.1 Following the initial site investigation works gas monitoring was undertaken at the site to determine if ground gas migration would adversely affect the development.

8.2 Basic radon protection measures are required for the site.

8.3 The gas monitoring undertaken showed a maximum carbon dioxide concentration of 4.1% with no methane detected. A maximum flow rate of 1.1 l/hr was recorded for all the boreholes.

8.4 The gas risk assessment is based on a high sensitivity end use. Based upon the NHBC traffic light system in conjunction with CIRIA C665, when calculating the Gas Screening Value obtained by multiplying the maximum gas concentration by borehole flow rate, the site can be characterised as **Green**, this is due to the low CO2 concentrations and flow rate found on site.
Carbon Dioxide: 0.0041 x 1.1 = 0.00451l/hr.

8.7 When consulting BS 8485:2015 Table 2 the site can be characterised as CS1 for Type A buildings. Consulting tables 5 - 7 we would recommend the following to achieve a score of 2.5:

- Fully vented minimum 150mm deep void below suspended slab. To be increased to 250mm where the proximity of trees affect the foundation construction.	**2.5 Points**
- Continuous membrane across the cavity/party walls.	**0 Points**
- Cavity tray in the external walls.	**0 Points**
- Fully sealed service entries and ducts to manufactures specification.	**0 Points**
- Beam and block floor slab.	**0 Points**
Total	**2.5 Points**

9.0 WASTE CLASSIFICATION

9.1 Material that is to be removed from the site will contain elevated levels of contamination, above the current accepted guidance levels. Therefore these materials should be taken to an appropriate licensed waste site.

9.2 Any relevant chemical testing should be made available to the landfill operators so they can determine if this material is suitable to be disposed of in their waste site.

9.3 Full documentation including duty of care certificates should be obtained. These should be included within any final validation report.

9.4 Approval from the Environment Agency is required before moving contaminated material around the site. This includes excavating contaminated material and depositing in the same area. It is likely that the Environment Agency will allow the contaminated material to be moved around the site provided that elevated contamination is not placed in an area where less contamination is present. This would require the more heavily contaminated fill materials to remain within a particular area and not moved to any other parts of the site.

10.0 ENVIRONMENTAL SPECIFICATION FOR IMPORTED FILL

10.1 Suitable topsoil, subsoil and uncontaminated fill should be imported to the site where there are insufficient existing materials available on site. This material should be imported from a source that is not suspected of being contaminated.

10.2 All imported material to be used for the capping/topsoil layer should be uncontaminated and comply with the specification for Engineering Fill. All imported material should be tested for the range of contaminants listed in paragraphs 10.5 to 10.7. Only material found to be below published trigger levels should be deemed uncontaminated and accepted for use on site.

10.3 If the imported material is from a Greenfield site, a minimum of 3 samples or 1 per 250m^3 of imported material should be taken for testing, whichever is greater. If it is from a brownfield site, a minimum of 6 samples, or 1 per 100m^3 of imported material should be taken for testing, whichever is greater. Material provided by a commercial supplier should be certified to the same level of testing, with the certificate less than two months old.

10.4 All imported certified material should be placed immediately. If this is not possible, or the material is not certified and sampling is to be carried out prior to being laid, it should be securely stored on site prior to use to prevent possible contamination from any materials on site.

10.5 Where the level of any determinant exceeds the Tier 1 concentrations, as listed below, this material is unsuitable for use on site.

CONTAMINANT	ICRCL – TTV / DEFRA – SGV MG/KG
Arsenic	37 (4)
Cadmium	22 (4)
Chromium	130 (2)
Lead	200 (4)
Mercury	1.2 (1)
Selenium	250 (1)
Copper	2400 (1)
Nickel	180 (1)
Zinc	3700 (1)
Cyanide (total)	25
Sulphate	0.24% (3)
Sulphide	250
Thiocyanate	50
PAH (Total)	40
TPH (Total)	250
Phenols	280 (1)
PH	6-8
Asbestos	No fibres present

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(2) DEFRA CLR SGV's withdrawn used for initial comparison

(3) BS 8110 1985 Table 6.1

(4) Category 4 Screening Level

10.6 Screening values for speciated PAH (Domestic gardens with plant uptake) are indicated below:

CONTAMINANT	SCREENING CRITERIA FOR PAH
Acenaphthlene	210 (1)
Acenaphthylene	170 (1)
Anthracene	2400 (1)
Benz[a]anthracene	7.2 (1)
Benzo(a)pyrene	5 (2)
Benzo[b]fluoroanthene	2.6 (1)
Benzo[ghi]perylene	320 (1)
Benzo[k]fluoranthene	77 (1)
Chrysene	15 (1)
Dibenzo[ah]anthracene	0.24 (1)
Fluoranthene	280 (1)
Fluorene	170 (1)
Indeno[123-cd]pyrene	27 (1)
Naphthalene	2.3 (1)
Phenanthrene	95 (1)
Pyrene	620 (1)

(1)
(2) Category 4 Screening Level

10.7 LQM S4UL Screening values for speciated TPH (Domestic gardens with plant uptake) are indicated below

Petroleum Hydrocarbons	**LQM S4UL Screening Values**
Aliphatics	
C5-C6	42
C6-C8	100
C8-C10	27
C10-C12	130 (38)
C12-C16	1100 (24)
C16-C35	65000 (8.48)
Aromatics	
C5-C7	70
C7-C8	130
C8-C10	34
C10-C12	74
C12-C16	140
C16-C21	260
C21-C35	1100

10.8 The supervising engineer on site will also inspect the proposed materials visually prior to being brought onto site. Where soils are imported which contain materials, which are visually unsuitable, then the onsite supervising engineer reserves the right to refuse such materials.

10.9 Unacceptable materials include significant (greater than 5% by volume) quantities of whole brick, rebar, concrete, cobbles, tarmac, paper, plastic, glass, timber and organic materials.

11.0 VALIDATION

11.1 Photographic evidence to be recorded of the excavation of all contaminated soil, and waste transfer tickets provided. Photographic evidence should also be recorded of the successful excavation of the gas holders. Samples should be taken from beneath the excavated material, as well as from the base and perimeter of the gas holder excavations to confirm that all contaminated material has been removed.

11.2 Any imported clean material decided to be necessary should have been certified with testing having taken place within two months of the material being imported to site. In the absence of this, soil samples should be taken from the capping layer and chemically analysed to demonstrate that there are no elevated levels of contamination present.

11.3 If contaminated material is found in the capping layer the extent of it must be established by further testing. All contaminated material must be removed from the site and replaced by equivalent uncontaminated material.

11.4 All site records and results of the shallow trial pits should be consolidated into a validation report. The report shall be completed in accordance with 'Yorkshire and Humberside Pollution Advisory Council: Verification Requirements For Cover Systems'.

11.5 All topsoil must be in place and notification given to the validation engineers at least 2 weeks prior to the expected completion date. This will allow time for onsite investigation and chemical analysis to be undertaken and report compiled in line with the CML initiative.

11.6 Clean material imported should be visually inspected to confirm it doesn't contain unsuitable materials (i.e. glass, brick, etc).

11.7 The Gas Protection Measures should be independently inspected and a photographic record to prove its installation should be kept.

12.0 HEALTH AND SAFETY

12.1 The following is intended as supplemental to normal good practice health and safety requirements. These are listed as routine requirements and should be adopted as a minimum when working on the above site.

12.2 Construction workers should be made aware that the site is contaminated. They should avoid coming into contact with these materials where possible and always wear PPE including overalls, boots and gloves when handling the contaminated materials onsite.

12.3 The following legislation and guidance should be complied with: -

12.3.1 Health and Safety Executive Document "Protection of Workers And General Public During The Redevelopment of Contaminated Land"
12.3.2 The Construction Design and Management Regulation 1994.
12.3.3 The Control of Substances Hazardous to Health Regulation 1994.
12.3.4 Special Waste Regulation 1996.
12.3.5 Environmental Protection Act 1990.

12.4 Washing and other welfare facilities in accordance with current Health and Safety Legislation should be made available on site. Eating and smoking should be restricted to designated areas where the above hygiene facilities are available.

12.5 To ensure safety of personnel all sides of excavations should be suitably supported or battered back where excavations are over 1.2m deep. Where there is a risk of harm from collapse of the sides of the excavations at depths less than 1.2m the same rules should apply.

12.6 The general public and any unauthorised personnel should be prevented from gaining access to the site. Any visitors likely to come into contact with the contaminated soils/fills should be made aware of the hygiene requirements.

12.7 Where excavations have not been backfilled they should be adequately fenced off with warning signs erected.

12.8 There should be no fires lit onsite during any of the construction phases of the redevelopment.

13.0 APPROVALS

13.1 Proposals for the remediation of contaminated land may require the approval of numerous bodies.

These include:

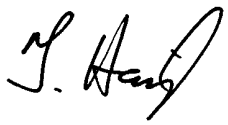
a) Kirklees Environmental Health Department as required by the building and planning regulations.

b) The NHBC or similar as they will provide the insurance costs to cover the property.

c) The Environment Agency if there are risks of contamination to ground or surface water systems. They will also require notification if material is removed from site and taken to an appropriate tip.

d) Relevant highways and drainage authorities and other service companies may also wish to know about the level of contaminants.

Prepared by



T. Haigh. B.Sc., C.Eng., M.I.C.E.
May 2019

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APPENDIX

Site Location Plan

Site Remediation works Plan

FORMER FIRE STATION

MANCHESTER ROAD

MARSDEN

HD7 5JX

0m Scale 1:50 4m
0m Scale 1:100 8m
0m Scale 1:200 16m
0m Scale 1:500 40m
0m Scale 1:1250 100m

(When to scale of original plan bar = 8cm)

Manchester Road

Fire station facade to remain

Bus Shelter

Floor slab to be broken out

1.3m high stone wall

2.4m high steel pallisade fence

Former Fire Station

1.8m high stone wall

Gas Holders to be removed samples to be taken from base and sides of excavation.

Investigation required to confirm presence of potential third gas holder

Phase A

Made ground across site to be scraped 1200-1500mm

concrete panel fence

chain link fence

Phase B

2.4m high concrete post and chain link fence

Gas Plant

steel pallisade fence over stone wall

max 2.0m high stone wall

stone wall

Stone construction - material to be retained for re-use

NOTE:
1. Tree locations indicative only.
2. Perimeter of site is banked up with earth so not a true reflection of ground levels.

N

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Client: SB HOMES LTD

Project: FORMER FIRE STATION, MANCHESTER ROAD, MARSDEN

Detail: SITE REMEDIATION WORKS PLAN

Dwn	Chkd	Date	Scale	Dwg No.
DP	MD	10.05.19	1/200@A2	E17/7092/201