



Contamination Mitigation Report

Planning Approval LU/159/19/PL

2 Croft Cottages, Pier Road, Littlehampton, BN17 5LS

Condition 9

September 2021

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1.0 Generally

- 1.1 This Planning Report has been prepared on behalf of the Applicants, for the purpose of discharging Condition 9 of Planning Approval LU/159/19/PL
- 1.2 No other purpose is anticipated or accepted. Copyright of this report remains with Critchley Architecture And Design Ltd.
- 1.3 The presence of contaminated material on the site is not disputed. This reports sets out a robust methodology and a mitigation strategy to deal with the contaminated materials.

2.0 Assessment and Analysis

- 2.1 Condition 9, of the approval states:

“Prior to the commencement of development the following components of a scheme to deal with the risks associated with contamination of the site shall be submitted to and approved, in writing, by the Local; Planning Authority.

- 1. A preliminary risk assessment which has identified: all previous uses potential contaminants associated with those uses and a conceptual model of the site indicating sources, pathways and receptors potentially unacceptable risks arising from the contamination at the site.*
- 2. A site investigation scheme, based on (1) to provide information for a detailed assessment of the risk to all receptors that may be affected, including those off site.*
- 3. The site investigation results and the detailed risk assessment (2) and, based on these, an options appraisal and remediation strategy giving full details of the remediation measures required, and how they are to be undertaken.*

4. A verification plan providing details of the data that will be collected in order to demonstrate that the works set out in (3) are complete, and identifying any requirements for longer term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

The scheme shall be implemented as approved above, and, prior to commencement of any construction work (or such other data or stage in in development as may be agreed in writing with the Local Planning Authority). A Verification Report demonstrating completion of the works set out in the approved remediation strategy and the effectiveness of that remediation shall be submitted to and approved in writing by the Local Planning Authority. The report shall include results of sampling and monitoring carried out in accordance with the approved verification plan to demonstrate that the site remediation criteria have been met. The report shall also include a 'long term monitoring and maintenance plan' for longer term monitoring of pollutant linkages, maintenance and arrangements for contingency action, as identified in the verification report, and or the reporting of this in writing to the Local Planning Authority."

- 2.2 This Report sets out proposals to meet (3) and (4) above.
- 2.3 Reference should be made to : **'Phase 2, Site Investigation Report'** prepared by 'Your Environment' April 2021 – reference YEX1975. That report is submitted to meet the requirements of (1) and (2) above.
- 2.4 The 'Your Environment' report informs the subject report and proposals.
- 2.5 The 'Your Environment' report identifies at 9.3 contaminants :
 - Metalloids
 - Arsenic
 - Lead
 - PAH – Polycyclic Aromatic Hydrocarbons
 - Benzo fluorathane
 - Benzo pyrene
 - Dibenz anthracene
- 2.6 The presence of these contaminants is not denied, and the subject proposals are to mitigate their potential effects.
- 2.7 The 'Your Environment' report recommends at 12.1 removal of the contaminated soils, or containment under a capping layer.
- 2.8 The subject proposals are part for removal of contaminated material, and part for containment of the remaining material. Our view is that in a domestic situation, a capping layer is not effective in the long term, with the risk of future 'landscaping' changes by persons unfamiliar with the risks of contaminated soils.

- 2.9 The relatively shallow level of contaminated material at 0.6m allows that the removal of the material can be an economic solution to mitigate the contamination.

3.0 Process and Mitigation Measures

Preliminaries

- 3.1.1 Reference should be made to drawing 19023-407B, which defines the areas of work. Areas of work are defined by Zoning, for reference and are described below.
- 3.1.2 All persons involved with the mitigation works to be fully briefed on the proposals and the methods of working.
- 3.1.3 On site provision to be made for hand washing and equipment isolation and cleaning.
- 3.1.4 All operatives to be provided with impervious over trousers, gloves and wellington boots. Personal protection measures for operatives will be the responsibility of the appointed contractors

Process

- 3.2.1 Excavate reduced level of 150mm to **Zones B and E**. Cart away spoil to registered tip for disposal. Lay permeable membrane and overlay hardcore. This will give a working access to the site, prior to groundworks to the rear of the site. Subsequent works are proposed working from the rear of the site, back to the front boundary.
- 3.2.2 Excavate foul drain trench to garden of No.2 Croft Cottages. **Zone C**. Cart away spoil to registered tip for disposal. Line trench sides and bottom, with permeable membrane. Lay pipework in clean gravel. Backfill clean hardcore. Surface with clean imported soil.
- 3.2.3 Excavate for storm drainage 'crate' matrix as per **Zone C** – 3.2 above. Cart away spoil to registered tip for disposal. Take sample from trench invert for analysis. Line excavation with permeable membrane. Install crates. Overlay crates with permeable membrane. Backfill clean hardcore.
- 3.2.4 Excavate reduced levels to garden, **Zone D**. 0.6m deep. Cart away spoil to registered tip for disposal. Lay permeable membrane
- 3.2.5 Following 3.4 above, take two samples from the exposed invert for analysis. This will delineate any areas where there may be an unacceptable level of contamination requiring further disposal. Those areas testing 'clean' can remain and will not require further excavation.

- 3.2.6 Those areas that still show contamination be excavated a further 150mm, and again removed for off-site disposal. The test sampling of the exposed surface will be repeated.
- 3.2.7 Backfill surfacing to crates and infill to garden area (3.3 and 3.4 above) with clean topsoil.
- 3.2.8 At **Zone A** – cut through previous membrane as 3.1 above, on line of foundation trenches. Excavate foundation trenches. Cart away spoil to registered tip for disposal. Pour concrete foundations to 225mm below ground level.
- 3.8.9 Overlay foundation and floor slab areas – **Zones A + B** with impermeable gas membrane. Joints lapped 600mm , double taped.
- 3.2.10 Drive – **Zone E** – Level off hardcore as 3.1 above. Sand blind. Lay second permeable membrane. Surface with paving blocks laid on sharp sand.
- 3.2.11 Any variations to the above are to be recorded and plotted on to an updated issue of drawing 19023-407, to be retained ‘as built’.

4.0 Compliance

- 4.1 All material removed from the site for disposal will be subject to WAC testing (Waste Acceptance Criteria), which with the contamination test results, will be used to determine an appropriate waste classification (by means of applying the HazWaste model). This procedure optimises the various levels of contamination in the waste material and allows the most economic and effective disposal.
- 4.2 As above, at each level of excavation and ‘clean’ testing, the end result will be a contour map showing the total removal of the contaminated material. The remaining material can be shown to be ‘clean’ from the final test results, and recorded as such in a closing report.
- 4.3 The design, detail and specification of the proposals will be part of the submissions to the Building Control Officer. He has an inspection responsibility for the drain and foundation trenches which are the deeper parts of the excavations.
- 4.4 A 100 diameter perforated sampling tube to be installed vertically, adjacent to the crate matrix, with a sealed access cap, for future sample testing as appropriate.
- 4.5 As at 2.1/4 above, the Local Planning Authority to be notified of the commencement of works, to present an opportunity for inspection by authorised persons.

- 4.6 For the vehicle movements to remove the contaminated material from site, the measures appended below , in our practice note for protection against Mud Transfer and wheel washing will be followed.
- 4.7 No excavation and movements of excavated material to be undertaken during periods of heavy rainfall.
- 4.8 All imported soil to be fit for residential garden use, (3.7) above, and to comply with the British Standard BS3882.
- 4.9 As above, a final Report to be prepared to include a schedule of test results, plans and sections of the treated areas, and details of material disposals.

Critchley Architecture And Design Ltd.

1st September 2021

Appendix A

Discharge of Standard Planning Conditions

Measures to Prevent Mud of Highway

Purpose

It is a common feature of Planning Approval notices, to include a Condition to agree with the Local Planning Authority, measures for the prevention of transferring mud from the approved site onto the public highway. Sometimes referred to as the 'wheel wash' Condition.

On large sites it will be possible to provide a formal truck washing facility within the site, in which case specific recommendations will be made.

The following notes relate to the appropriate measures to be taken for small sites where full facilities cannot be provided, but where there is still a clear responsibility not to transfer mud onto the highway.

Equipment to be Maintained on Site During Groundworks

- a) Water supply hose with control valve.
- b) Buckets.
- c) Stiff hand brushes and long handled brushes.
- d) Long handled shovels.
- e) An electric pressure washer and lance.
- f) Temporary hardstanding (Wash down area). This could be an area of hardcore from demolitions, the base course for a car park, or if neither is appropriate, temporary road sheets to provide a clean standing area for washing vehicles.
- g) Sludge pump. Optional to clear silt from the washdown area, depending on local conditions.

Method Statement

1. Minimise vehicle movements into the site. Endeavour to unload delivery vehicles at the entrance or 'crane off' from the highway.
2. Endeavour to load 'muck away' vehicles at the site boundary, such that they do not enter site.
3. For soiled vehicles, remove mud from wheels, allow to drain off, clear mud from exit route, discharge vehicle, clear any mud transferred onto highway back into site area.

End