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James Beadle

29/03/2021  
Ref: A201003-R04

By e-mail

## **RE: Remediation Statement – 2 Cambridge Road, SK4 4QN**

Dear James,

As you are aware, following phase 1 and 2 investigations at the site it has been concluded that remediation is required in respect of identified contaminant sources and potentially significant linkages.

The phase 2 investigation was intended target near surface soil and potential Made Ground across the site and which may later be situated in the proposed soft landscaped areas. Three trial pits were advanced by hand excavation to allow samples to be collected at varying depths and establish the nature and thickness of any Made Ground deposits encountered. This consisted of two to the proposed back garden and one to the front.

The hand pits generally encountered reworked topsoil and subsoil with various anthropogenic inclusions typical of construction and demolition waste.

At least one sample from each of the trial pits contained elevated levels of PAHs and lead. Asbestos was not detected.

The exceedances are considered to correlate with ashy material in the topsoil and Made Ground also underlying topsoil at the south of the site in the proposed new garden area.

It is considered that the testing confirms significant contaminant linkages are likely to be present with near surface soils/Made Ground on the site.

The Made Ground encountered generally consisted of brick and concrete with some ash in a soil matrix. Significant quantities of foreign putrescible organic material were not encountered, and the Made Ground is therefore not considered a significant potential source of ground gases.

Similarly, gross contamination was not encountered, and the exceedances are not considered a significant source of mobile or leachable contaminants capable of affecting controlled waters.

Proposed residential use of the is considered highly sensitive.

## **Objectives of the Remediation**

The main objectives of the remediation are to break the potential contaminant linkages as identified, so that the risk to the site users from exposure to contaminated soils can no longer be considered as likely to represent a significant possibility of significant harm.

It is desirable that the remediation results in a high degree of certainty that the potential contaminant linkages have been removed permanently.

However, the remediation should be undertaken in a way that is sustainable and proportionate in terms of economic and environmental costs. It is also a requirement that the remediation is undertaken in a manner that is acceptable to all significant stakeholders, including the local authority and the future users of the site.

## **Remediation Options Appraisal**

### **Contaminant Linkages**

In order to mitigate risks identified at the site, one or more elements of the potentially significant contaminant linkages (source, pathway or receptor) should be removed by the remediation so that there is no longer a potential linkage. The following is a brief assessment of the feasibility of removing each element from the potential contaminant linkage.

#### **Receptor Removal**

Removing the receptors from the linkages would involve permanently excluding people from using the proposed soft landscaped areas including the nursery garden. This option is clearly not feasible within the development and will not be considered further.

#### **Contaminant Source Removal**

There are currently no viable in-situ or ex-situ methods by which the metals or PAH compounds identified within the site soils could either be removed from the soil, or reduced to concentration so that no longer present an unacceptable risk to human health.

Source removal typically requires excavation of any contaminated media to a depth of 0.6m in all proposed soft landscaped areas.

However, excavation and disposal to landfill (often termed 'dig and dump') is generally considered unsustainable, and therefore to be minimised as far as practicable.

#### **Pathways Management**

Removing or restricting exposure pathways would involve placement of physical barriers to prevent exposure of site users to the soil. Clearly, the installation of barriers such as hard paving is hard is not compatible with the proposed garden.

#### **Most Suitable Option(s)**

It is concluded that a source removal approach provides the most practicable solution for remediation of the garden/soft landscaped areas.

The areas of hardstanding proposed may be considered to provide an engineered cap above the source material, potentially allowing it to remain in place, thereby reducing waste disposal cost and providing a more sustainable solution. However, it would need to be ensured that this material is suitable as engineered subbase and is not disturbed during construction works.

## **Summary of Remediation Strategy**

### **Soft Landscaped Areas**

As the garden is to be generally soft landscaped, removal of the contamination source will be required. Typically, contaminated media should be excavated to a depth of 0.6m.

In order to minimise excavation/disposal quantities it is considered that excavation of only the contaminated media should be feasible based on visual inspection. All soil containing gravel, ash, clinker, brick stone, cement, metal or other non-natural inclusions should be excavated to 0.6m, or until underlying natural are deposits exposed, if this is less.

It will be critical to ensure the base of these excavations is at least 0.6m below finished ground levels, or that clean underlying natural strata are exposed if shallower than this. In the event soil is placed and contaminated media remains at depths shallower than 0.6m, further excavation is likely to be required.

### **Hard Paved Areas**

Fully hard paved or built over areas are generally considered to be 'capped' with an engineered cover system preventing access/exposure to any contaminants remaining in underlying soil. Therefore, any areas covered with permanent concrete slab, tarmacadam or similar will automatically achieve the remediation objectives.

However, this method may be infeasible due to disturbance of the material likely to occur during the construction phase.

## **Waste Disposal**

Following waste classification, any excavated material should be disposed of at a suitably licenced facility in line with waste duty of care requirements.

## **Remediation Validation**

### **Validation Actions and Reporting**

The LPA may require a validation report to be submitted on completion of the remediation works.

Information typically required for a validation report includes the following:

- 1) Full details of the source (company, location, permit, etc.) of imported clean cover material.
- 2) Chemical testing report for imported clean cover material.
- 3) Photographic evidence of excavation of contaminant source(s).
- 4) Independent confirmation of clean material placed.
- 5) Plan delineating areas subject to differing remedial solutions.
- 6) Copies of original waste transfer/consignment notes.
- 7) Overall validation report

### **Validation Action Responsibilities**

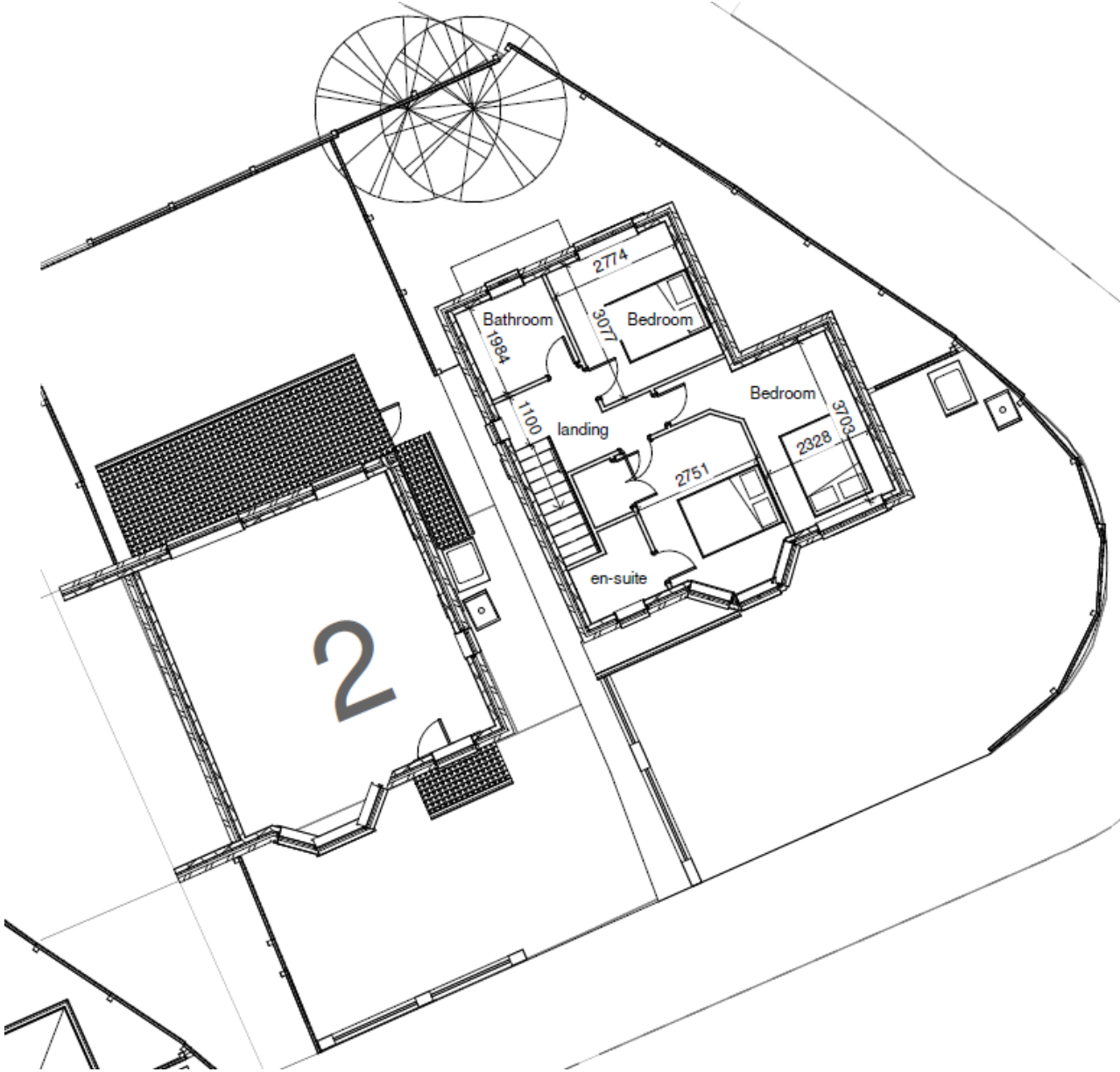
Actions items for which the client and/or their appointed contractor(s) will be responsible:

- 1) Full details of the source (company, location, permit, etc.) of the source of imported clean cover material.
- 3) Photographic evidence of excavation of sufficient depth to allow 0.6m of clean cover material and emplacement of clean cover material with representative scale.
- 6) Copies of original waste transfer/consignment notes.

Actions items for which the independent consultant (Adeptus) will be responsible:

- 2) Chemical testing report for imported clean cover material.
- 4) Independent confirmation of clean cover thickness – 0.6m.
- 5) Plans delineating areas subject to differing remedial solutions.
- 7) Overall validation report detailing all works undertaken.

# SITE LAYOUT PLAN



**Summary:**

> 80 m<sup>3</sup> of soil to be removed from site via suitably licensed company.

> Soft Landscape Area: 18 m<sup>3</sup> of top soil to be laid from accredited supplier.

> House Footing: 28 m<sup>3</sup> of concrete to be laid from accredited supplier.

> Hard Paved Area: 10 m<sup>3</sup> of MOT to be laid (150mm depth), capped with brick pavier via an accredited supplier.

