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John Small
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8th August 2016

Dear John,

RE: PEN Y BRYN, WREXHAM: CONTAMINATED LAND QUERIES

Following the latest comments from the NRW, we have updated the remediation strategy accordingly.

To expedite matters it may be worth carrying out this additional testing a.s.a.p. to enable the condition to be discharged.

We trust this is satisfactory, should you have any queries please call Mike Scott on 01244 661361.

Yours sincerely

M J Scott
Enc

TENTERS SQUARE, PEN Y BRYN: REMEDIATION STRATEGY

Introduction

1. Groundsolve Ltd (GSL). have been instructed to provide details relating to the remediation strategy for the above referenced contract. A Geo-environmental Report was carried out by GSL in June 2015. This was Revision A and updated the original report with findings from soakaway testing.
2. The development on site will comprise a mix of apartment blocks and retail units with associated car parking. The proposed site layout is presented on the accompanying drawing.

Background

3. The above report identified the following past site uses.
 - Private car park,
 - Auto Repair garage,
 - Overnight taxi storage,
 - Electrical equipment store,
 - Second hand furniture & Clothing store, Motor supply shop.
4. Chemical testing revealed elevated levels of lead, mercury and PAH fractions associated with the made ground on site.
5. It has been recommended that the made ground be removed beneath the car park construction down to the underlying natural sand and gravel. The made ground being replaced with imported granular material obtained from a quarry and topped with tarmac.
6. Only one small area of landscaping is proposed and it is recommended that the made ground be removed from this area as well and replaced with natural sand and gravel derived from soakaway excavations.
7. A remediation strategy is therefore required to address the risks from soil contamination.
8. Remediation measures will require verification and validation.

Site Preparation

9. Following removal of the made ground beneath car parking areas photographic evidence will be provided to prove this material has been removed from site,
10. All dockets for the removal of the made ground shall be supplied to WCBC as part of the validation report.

11. The landscaped area will also be reduced to the underlying natural ground and photographic evidence provided.

Remediation Strategy: Soil

12. Remediation is not proposed in areas where buildings and hardstanding will be constructed. The presence of buildings and hard cover will effectively eliminate any pathway between the soil (source) and site occupiers (target).
13. The sand and gravel to be placed in the landscaped area will be tested for the same suite of contaminants in the geo-environmental report, to confirm it is suitable for inclusion in the works. The sand and gravel will then be covered with a nominal 150mm of topsoil and capped with turf.
14. In addition, the underlying formation in the natural sand and gravel will be tested to ensure no downward migration of contamination has occurred from the made ground.
15. The suitability of the imported topsoil should be verified as follows:
 - (i) All imported material must be obtained from a reputable source and the supplier should provide a certificate of analysis confirming the chemical and physical nature of the material.
 - (ii) Independent analysis should be undertaken on the material after it has been imported to the site in order to confirm its chemical composition. Samples must be analysed in an accredited laboratory and results compared against the guideline criteria specified in the previous reports.
 - (iii) Testing should be carried out on at least one sample in the landscaped area. This sample should be obtained from the material after importation to site. The sampling and analysis regime should be agreed in advance with the contaminated land officer of WCBC.
16. A watching brief should be carried out during development to manage any potential unforeseen areas of contamination. These may be identifiable by material type, colour or smell. The remediation of unforeseen areas of contamination should be determined depending on type and extent of contamination. This will be carried out following the stripping of the made ground.

Validation: Soil

17. The remediation strategy should be supported by a Validation Report, which is to be produced following completion of the works.
18. The report should include details of material removed and imported to the site, results of chemical testing on imported soil, site plans and photographs.
19. Validation of suitability of imported topsoil will be required as follows:

- i. Evidence of source of material including transport dockets,
- ii. Suppliers certificates of chemical and physical analysis of material,
- iii. Certificates of independent analysis of material sampled from site,
- iv. Confirmation that the imported material is suitable for use.

20. The following additional material should also be incorporated into the validation report:

- (i) As built site layout clearly showing areas of buildings, hard cover and imported landscaping materials.
- (ii) Confirmation that no previously unforeseen, significant sources of contamination have been encountered.

All works must be agreed in advance with the regulating Local Authority and all documentation submitted to them in respect of any relevant outstanding planning conditions.