8990/lam/ej/cl007

7 SPRING PLACE, LONDON, NW5

RE: REMEDIATION STRATEGY

Introduction

The above site is to be redeveloped and a soils investigation has been undertaken by Ground Engineering and their document dated March 2004 includes a desk study, three boreholes and six trial pits plus testing for contamination. The document should be read as an appendix to this summary. Also provided is a summary prepared by Ellis and Moore of the ground conditions.

Scale of Contamination

From the reports that have been prepared there are elevated concentrations of arsenic, lead, Mercury and Benzo (a) pyrne together with TPH within the made ground. There are also elevated levels of Boron, Copper and Zinc.

Remediation Methodology

In order to remediate this site the proposal is to remove 1m of soil in all the gardens which are private and replace the soil with 200m of gap-graded aggregate with a geo-textile top and bottom and 800mm of clean top soil up to the finished levels.

In the areas where there are elevated levels of TPH it will be necessary to remove the soil on a localised basis.

Under the buildings it will not be necessary to undertake any remediation apart from the removal of TPH

Site Plans

Attached to this document are the following drawings.

Ellis and Moore Drawings

8990-01, 02, 03 and 015 showing details of the foundations. Also the A3 drawing section 11 through the boreholes indicating the varying strata.

Monaham Blythen drawings SP3A, SP34A AND SP37A which are sections through the building showing the ground floor slab and external levels. In addition we've mocked up Monaham Blythen drawings SP86 and their ground Floor cross section with the areas to be remediated.

Phasing of the Works

It is intended that the site works will commence in March 2006. The initial operations will be removal of soil and this will be followed by installation of piles, ground beams and drainage. The details are indicated on the drawings which show that approximately 550mm of soil will be removed prior to commencement of the excavation for the foundations.

Consents and Licences

A mobile plant will be used to install the piling and remove the surplus soil. The movements on site will be agreed with Network Rail as the site abuts the railway.

Environmental Monitoring

In the south west corner of the site the soil containing TPH will have to be removed. This will be done and monitored using PID metre to check that area left is free from hydro carbon contamination.

As it is the culverted stream on site is concerned the underground rivers map have been checked and confirm that the site is near the line of the Fleet River. A copy of the map is enclosed marked up with the approximate location of the site. It is considered that the risk of migration from this site into the watercourse is low as any contaminants will be contained within the reinforced concrete structure and the ground beams so that they cannot migrate to an adjacent site. If there are specific problems on the site then they will be dealt with so that there is no migration. Where the water course is suspected of being is an area of clay where migration is most unlikely.

Given the readings that have already been obtained on gas monitoring it is not felt necessary to undertake monitoring at this time.

Site Management

The contractors, Sandwood, will be taking into account the recommendations in the Ground Engineering report on working on the site and also will be working in accordance with the Health and Safety Plan (Construction).

Validation

As stated previously in the areas where there is a TPH problem this will be monitored using a PDI metre and the soil removed as necessary.

When the new soil is placed in the gardens 1 no suite of tests will be undertaken in each garden to verify that the soil near the surface is suitable for private gardens.

Certificates will also be provided for the soil that is brought to site and the transfer notes will be available to verify that contaminated soil has been removed from site. On site incoming services will be laid in ducts where they pass through the soil, as a protective measure.

Future Monitoring

During the site works there will be an opportunity to check whether or not the culvert that has been mentioned in the reports is on the site or not. Also, with the large volume of soil being removed adequate opportunity is available to check whether the soil is suitable, bearing in mind the majority of it is under the buildings where only the TPH contaminated soil is to be removed.

Given the strategy proposed above no future monitoring shall be required once the remediation has been completed.

If the remediation work is undertaken successfully then there should be no future problems with contaminants for the lifetime of the building.

<u>Conclusions</u>

If what is proposed above is undertaken then the rear gardens should be remediated such that the levels of contaminants are below the threshold for private gardens. The remainder of the site is covered in concrete and hence the remediation is not required except for the removal of the TPH contaminated soil. If alterations to the Strategy are required during the site works these should be cleared with the local authority in writing before they are implemented.