

TECHNICAL ADDENDUM TO REMEDIATION STRATEGY (Ref: 4551 22 07 04 Tech Adden 01 REV A BD SP)

SITE: Former St John's Ambulance Station, Armoury Drive, Gravesend, Kent, DA12 1CT

INTRODUCTION

This Technical Addendum has been written to supplement the original Remedial Strategy (Ref: 4551 22 04 29 Rpt 02 Rev A BD SP) for the site, in order to document several changes required to the previously proposed remedial strategy.

The original Remediation Strategy was based upon the conduct of remedial excavation and segregation of impacted Made Ground containing cement bonded asbestos sheeting fragments and exhibiting elevated concentrations of lead and PAHs (namely benzo(a)pyrene). The proposed Remedial Strategy prescribed the removal of these material across the site where identified up to 1.35m bgl (with an average depth of ~1.0m bgl) to suitably licensed waste facilities. However, since the original remedial strategy was written new info has come to light which gives rise to the need to adapt the previously approach.

Change in Strategy

The proposed changes to the Remedial Strategy are discussed below:

Remedial Excavation

The previously proposed remedial methodology involved the removal of the impacted Made Ground across the site up to ~1.35m bgl to the western side of the site and ~0.45m bgl to the eastern side of the site. However given that the existing and proposed site levels have been considered further by the Client greater flexibility is now required regarding the depth of remedial excavation. The remedial strategy regarding the removal of the Made Ground containing cement bonded asbestos sheeting fragments remains unchanged (ie all asbestos impacted Made Ground is to be removed from site under the supervision of an Environmental Consultant with supporting validation analysis) however the depth of the remedial excavation in relation to the Made Ground containing elevated concentrations of lead and PAHs is proposed to vary. Accordingly it is now proposed to remove the impacted lead and PAH Made Ground down to the proposed formation levels which range between 200mm below existing levels and 1m bgl (associated with footings) across the site. Refer to the attached plan (Fig 1 – Proposed Excavation Plan) which illustrates the depth of excavation proposed in different areas of the site.

In areas of proposed soft landscaping / gardens it is proposed to excavate and remove the existing Made Ground to sufficient depth that will facilitate the placement of an imported certified "clean" cover system to a minimum thickness of 475mm. In areas that will be covered by hardstanding / buildings it is proposed to excavate to formation levels which are variable as detailed in Figure 1.

Beneath the cover system and across areas that will be covered by hardstanding associated with the proposed buildings and areas of parking / access it is proposed that residual impacted Made Ground will remain in-situ. Validation analysis of samples of remaining Made Ground will however be conducted following the excavation

proposed to document the residual contamination that will remain on site however potential risks to future site occupants are considered to be mitigated by the hardstanding and “clean” cover system which sufficiently break human health exposure pathways. Potential risks to groundworkers / construction workers would be mitigated by the employment of good standards of hygiene as previously prescribed in the original remedial method statement. Future risks to site occupants should be mitigated by recording the presence of residual metals and PAH impacted Made Ground within the site’s Health and Safety File. This should also detail that if the site layout changes in the future then an Environmental Consultant should be engaged prior to any proposed changes to consider potential risks and ensure they are managed appropriately.

In the event that any more heavily contaminated Made Ground is encountered during the preparatory groundworks phase of the proposed development, this would be considered separately by an Environmental Consultant in accordance with the Discovery Strategy that is to be implemented on site and any required variations to the remedial strategy would be detailed.

All waste disposal requirements however remain unchanged and all waste arisings should be segregated according by material type / waste classification to facilitate appropriate disposal in accordance with Environment Agency WM3 guidance, to suitably licensed waste disposal facilities.

Protected Trees

Since the original Remedial Strategy document was written it has become apparent that 3no. trees located on site adjacent to the western boundary are subject to Tree Protection Orders. A recent site meeting was therefore held between the Client, SEC and an Arboricultural Consultant to discuss these trees and associated requirements in relation to proposed remedial and construction related excavation groundwork given that excavation is required within the root protection zones. The following is proposed to facilitate groundwork (both remedial and construction related) and avoid compromising the trees;

- Conduct of additional site investigation locally to TP03 to better delineate the extent of Made Ground impacted with cement bonded asbestos sheeting fragments, to hopefully rationalise (subject to findings) the extent of asbestos remedial excavation required. As previously prescribed in the original Remedial Strategy risks to site investigation personnel should be mitigated by the use of PPE / RPE and dust suppression;
- Production of an Arboricultural Development Report by an Arboricultural Consultant in accordance with BS5837:2012 inclusive of a Tree Survey and Tree Survey Plan, Arboricultural Impact Assessment, Arboricultural Method Statement and Tree Protection Plan;
- Ecological inspection of the trees ahead of pollarding to mitigate potential risks to nesting birds and bats;
- Pollarding of the trees given their size and that the canopy overhangs the position of the proposed houses;
- Careful removal of hardstanding and any sub-base across the western area of the site by a small mechanical excavator with a ditching (toothless) bucket;
- Following removal of hardstanding and sub-base, excavation of soils will be conducted by hand to mitigate damage to tree roots. Where tree roots become too abundant (close to the tree trunks) for hand excavation then impacted Made Ground will remain and the cover system will be “feathered” up to the tree trunks subject to guidance by the Arboricultural Consultant; and
- Future management of the trees will be required however this is beyond the remit of the proposed contaminated land remediation and as such this is to be dealt with by others

Excavation to the Eastern Side of the Site without Environmental Consultant Watching Brief

Following a communication error ground to the eastern side of the site locally to one of the two asbestos impacted Made Ground hotspots (TP01) was excavated down by up to ~0.6m below the previous ground level, to match the existing level of the tarmac access drive which runs parallel. Therefore it is not possible to implement the previously agreed remedial strategy in relation to this asbestos hotspot. As such an alternative approach is now required.

The resulting stockpile of waste arisings will require disposal from site as Hazardous Waste (under a dual waste code 17 05 04 (soil) & 17 06 05* (cement asbestos fragments). Subject to landfill requirements regarding classification it may also be possible to dispose of the arisings as Hazardous Waste under 17 05 03*.

The area that has been excavated should be inspected by an Environmental Consultant and a representative number of shallow trial pits should be conducted across the area to help confirm that the excavation that has been conducted has removed the Made Ground containing cement bonded asbestos sheeting fragments. Additionally a representative number of soil validation samples should be analysed for asbestos from across the area of concern to provide further confirmation that the remaining soils are unimpacted by asbestos.

Furthermore following the removal of the impacted Made Ground stockpile of arisings from site, the underlying ground should be inspected and confirmatory validation samples should also be analysed for asbestos to confirm an absence of cross contamination with underlying soils.



Notes:
Do not scale. All dimensions are in millimetres unless otherwise stated.
This drawing should be read in conjunction with all relevant project information and contract documentation. All dimensions to be checked prior to mobilisation and/or commencement of works. All works to comply with all relevant legal standards, building regulations and authority tender requirements. Report any discrepancies, if in doubt ask.

Revisions	No.	Date	Description	By	Chk
1	01	24.08.23	Proposed Site Layout Block Plan	SM	

Client Name: Gravesend Borough Council

Project Name: 14-154 Albert Murray Close

Drawing Name: Proposed Site Layout Block Plan

Drawing Number: AMD-BPTW-22-00-08-A-0107

Project No: 14-154

Rev: 01

Scale: 1:250 @ A3

PLANNING ISSUE

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This map is not to be relied upon for accuracy and is for identification purposes only

SITE: Armory Drive, Gravesend

SCALE: NTS

JOB NO: 4551

FIGURE TITLE: Proposed Excavation Plan

REV: 01

FIGURE NO: 01

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