

# Appendix D

## **ASBESTOS MANAGEMENT PLAN**



# Asbestos Management Plan

**Bermondsey Project,  
Drummond Road, Bermondsey,  
London, SE16 4DG**

April 2021

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# 1 Introduction

This document relates to the proposed development at the Bermondsey Project, Clement Road, Bermondsey, London, SE16 4DG (the Site). The Site is split into two areas, the Biscuit Factory and adjoining Campus site to the north of Clements Road. The proposed development will comprise of residential properties and the expansion of the Campus site.

Keltbray (KR) have been appointed to complete the remediation works in line with the approved Remediation Strategy and enabling works to facilitate the on-going development of the Site. The general scope involves the excavation and treatment of impacted Made Ground soils, with subsequent reinstatement to form a working platform for follow-on contractors.

The site has been subject to a number of site investigation works confirming the presence of asbestos, in the form of asbestos fibres within the soil matrix and Asbestos Containing Materials (ACMs), described as cement type material, loose fibrous debris and sheeting/board debris. Due to the widespread asbestos contamination works will have to be managed to reduce the risk to human health resulting from the potential release of airborne fibres. This document aims to provide clarity on the methodology of works for the management of asbestos, and the control measures to be implemented throughout the duration of the works.

## 1.1 Document Scope

This Asbestos Management Plan sets out the procedures and practices to be implemented as part of the proposed earthworks associated with the remediation works carried out by KR. Follow on contractors will be informed of potential ACM to be present and must develop their own work-specific Risk Assessment and Method Statement in addition to this Asbestos Management Plan, which must be adhered to at all times by all site personnel.

This document has been produced in line with CIRIA C733 – *‘Asbestos in Soil and Made Ground – A guide for understanding and managing Risks’* and the Joint Industry Working Group (JIWG) – *Industry Guidance on Managing and Working with Asbestos in Soils in Construction and Demolition Materials’*.

This is a live working document and will be updated in light of any changes in site conditions and new information received to ensure most current practices are in place.

## 2 Work Methodology

### 2.1 Risk Assessment

Based on the available information from the ground investigation, asbestos has been identified as the main contaminant of concern within the Made Ground soils. This was found in the form of disperse fibres within the soil matrix and ACMs, such as cement tile and loose debris.

KR has used the Joint Industry Working Group (JIWG) 'Asbestos in Soil and Construction & Demolition Materials' Decision Support Tool (DTS) for CAR 2012 Work Categories, to determine the category of works based on three anticipated conditions of the site. The work sheets are included in Appendix B.

- a) Site condition 1 - Residual asbestos fibres in Made Ground soils with asbestos fibre content above trace levels (>0.001% and <0.05%)
- b) Site condition 2: Bonded ACM (cement tile) in Made Ground soils
- c) Site condition 3: Loose fibrous asbestos debris in Made Ground soils

The hazard and exposure ranking and risk assessment output is as follows:

**Table 1: Hazard and exposure output**

	Hazard	Exposure	Combined Hazard and Exposure
<b>Site Condition 1</b>	Medium	High	High
<b>Site Condition 2</b>	Medium	Medium	Medium
<b>Site Condition 3</b>	High	High	High

**Table 2: Site Condition 1 Risk Assessment output**

Probable Licensing Status	Non-Notifiable Non-Licensed Work
<b>Respiratory Protective Equipment</b>	EN149 type FFP3 disposable
<b>Dust Suppression</b>	Manual/localised dust suppression
<b>Hygiene/Decontamination</b>	Localised and basic personal decontamination facilities

**Table 3: Site Condition 2 and 3 Risk Assessment output:**

Probable Licensing Status	Notifiable Non-Licensed Work
<b>Respiratory Protective Equipment</b>	EN140 with P3 filter half mask

Probable Licensing Status	Notifiable Non-Licensed Work
Dust Suppression	Localised mechanical dust suppression
Hygiene/Decontamination	Localised and enhanced personal decontamination facilities

The historical site investigation highlighted localised incidents of asbestos fragments described as 'insulation board/debris' in the south-west of Phase 3. Therefore, considering the nature of asbestos as encountered in the ground which is degraded rather than intact, the most appropriate input parameter for asbestos type in Site condition 3, is 'loose fibrous asbestos debris'.

Based on the current information and DTS KR consider that the works to be undertaken at the site will fall under two categories:

- The excavation and treatment of ACM impacted soils is categorised as 'Notifiable Non-Licensed Works'.
- Where there is an absence of defined ACM but rather a residual asbestos fibres content in the Made Ground above trace levels, these works are categorised as 'Non-Notifiable Non-Licensed Works'.

KR will constantly review the data and the risks, with the potential for the ACM in areas not previously identified. A watching brief will be completed throughout the excavation works, inspecting ground conditions and arising's. Should conditions change at any time, then works will cease and only commence when works have been re-assessed and appropriate control measures put in place based on the outcome of the assessment.

Where asbestos fibre content is below trace levels, these works fall outside CAR 2012. Nevertheless KR will remain proactive and ensure that dust suppression is used at all times to prevent generation of dust as well as completing re-assurance asbestos air monitoring to confirm the absence of airborne fibres in the air.

## 2.2 Pre-Remediation Activities

Before any works takes place, all site personal will receive a site induction and be briefed on the site specific working methodologies for works with asbestos. The information to be provided during the induction will include awareness of associated asbestos hazards and control measures to be implemented for the duration of the works. In addition, all site personal will be presented with a site plan identifying the areas of concern and be trained on the Discovery Strategy that outlines the procedures to be followed in case of unexpected contamination is encountered.

It is anticipated that works will be completed in four main stages. The enclosed site plan, Figure 1 Appendix A, illustrates the different areas across the site and the anticipated Site conditions. The phases will be defined as:

- Phase 1 (BF-D&E) – Limited asbestos impact. Site condition 1 for ‘hot-spot’ excavation;
- Phase 2 (BF-P & BF-QQ) – Site condition 2;
- Phase 3 (BF-RST) – Limited asbestos impact across main area. Site condition 3 for ‘hot-spot’ excavation; and
- Campus site – Site condition 1.

Each phase of works under Site condition 1, 2 and 3 will be considered to be ‘dirty’ works due to licensing status of the site (see Section 3 and Appendix B of this document for further information). It should be noted that Non-Licensed Work is still covered by CAR 2012 and HSE guidance and as such appropriate mitigation measures must be in place to minimise asbestos exposure. Prior to works commencing exclusion zones will be set-up around the perimeter of KR’s working area using HERAS fencing and debris netting. Areas will be secured to control unauthorised access and will include localised decontamination facilities as required by the licensing status.

Before the start of intrusive works, a baseline air monitoring will be undertaken to record the background conditions. This will be completed by a UKAS accredited testing subcontractor.

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### 2.2.1 Remedial Excavation

Site will be excavated in four areas (Phase 1, Phase 2, Phase 3 and Campus Site) with Made Ground soils removed to formation level. Excavation works in Made Ground soils regulated under CAR 2012 will be completed under controlled conditions (see Section 3 and Appendix B of this document for further information). Workers involved in the excavation works must be trained and competent with appropriate control measures in place to ensure the management of asbestos exposure. The following steps detail the asbestos management of the works:

- Allocated area checked and clear of hazards before works commence;
- Appropriate PPE and RPE should be provided to all operatives as per the Joint Industry Working Group Decision Tool for CAR2012 Work Categories (*Appendix B*);
- Excavation works, break out activity, loading activity, haul road and stockpiled material should be sprayed down with 500l jet wash bowser (or similar) as required to reduce potential airborne asbestos fibres and dust emissions;
- Any material that need to be retained and stockpiled on site, for an extended period will be managed to avoid cross contamination and dust release. Such material will be placed in hardstanding and properly sealed. In the absence of a hard surface material will be placed on an impermeable membrane or within a 100mm of sacrificial layer;
- The excavations will be conducted under a watching brief by a UKATA CAT B supervisor; and
- Localised decontamination facilities will be provided in accordance with the licensing status.
- Reassurance asbestos air monitoring will be undertaken by a UKAS accredited testing subcontractor to monitor potential fibre release throughout KR works within areas of asbestos



impacted soils. All results will be monitored, reported and collated. If in anytime monitoring records elevated fibre release than works will be stopped, re-assessed and will only start once corrective control measures have been put in place. The control limit is specified in Regulation 2 of CAR 2012 as 0.1 fibres per cubic centimetre (f/cm<sup>3</sup>). The control measures will be assessed at the time, in line with the source and cause of the findings. Likewise, where the data show a consistency of low exposure levels below the control limit following a 3 month reporting period, KR will consider reducing the amount of re-assurance asbestos monitoring carried out as a result of the reduced exposure risk.

Excavated soils suitable for treatment will be moved to the processing area and stockpiled in accordance with chemical/physical characteristics ready for onward treatment. Material unsuitable for treatment, will be segregated and either directly loaded into a lorry or stockpiled on an impermeable membrane and sealed to prevent the release of airborne fibres, pending off-site disposal to a suitable licensed facility.

Asbestos contaminated soil does not necessarily require removal or treatment. Where impacted soils is to remain in-situ below the formation level, material is to be capped to remove the risk of exposure to site workers. These works should be completed in accordance with the approved Remediation Strategies (70075582-Bermondsey Main Site-Outline Rem Strat\_Oct20 Rev4 and 70075882-Bermondsey Campus-Outline Rem Strat\_Oct20 Rev4).

Should material not be of expected characteristics then works will cease and the steps described in **Section 4.1** will be followed.

#### 2.2.1.1 **Hotspot Excavation**

Hotspot excavation refers to the isolated and localised asbestos finds within areas of the site with limited asbestos impact. Hotspot locations are shown in Figure 1, Appendix A.

The excavation and management of hotspots will be completed in a controlled manner, with the following process to be implemented:

- A 5m x 5m area around these known locations will be marked out by a KR engineer representing the initial hotspot excavation;
- The area around the hotspot will be clearly delineated and set-up as a 'dirty' working area with appropriate control measures put in place (see Section 3);
- All impacted material within the 5m x 5m area will be directed either for onward treatment or off-site disposal based on chemical/physical characteristics;
- The area will be visually checked under KR reactive discovery strategy; and
- The extents of the excavation will be assessed to confirm the absence of asbestos.

Once the removal of asbestos impacted soils has been confirmed than controlled conditions can be lifted.

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#### 2.2.2 **Picking Methodology**

During the excavation, arising's will be segregated based on the chemical/physical characteristics and stockpiled in the allocated area for onward treatment. Material containing asbestos cement, will be screened and handpicked by UKATA Cat B asbestos trained operatives to remove visible fragments of

asbestos as far as practicable reasonable. Asbestos cement will be double bagged and placed in a dedicated and clearly labelled, lockable asbestos skip. Other deleterious material removed during the picking process will be separated into appropriate temporary stockpiles and/or skips.

A jet wash bowser will be used to thoroughly suppress the treatment area to minimize any potential dust generation. During picking activities site management must remain vigilant, including ensuring that PPE and RPE are worn correctly. The suitable PPE and RPE will include:

- Type 5 paper suit BS EN ISO 13982 hood fully up;
- Sundstrom SR100 mask;
- Eye protection glasses BS EN 166 A 4; and
- Gloves, hard hat and safety boots (wellies or taped laced-up boots).

Material undergoing treatment will be visually assessed to ensure no visible fragments of asbestos are identified and is suitable for re-use on site.

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### 2.2.3 Material Management

Hazardous soils and material unsuitable for treatment and re-use on site will be removed from site under KR's Duty of Care in accordance with the Waste Regulations 2011 and Waste Duty of Care: Code of Practice

- Excavated material will be loaded and removed from site by lorry (in accordance with KR RAMS) under KR watching brief methodology by a competent and trained UKATA CAT B supervisor;
- Hazardous soils, and asbestos fragments will be removed from site via Keltbray Haulage in accordance with the KR traffic management plan (self-sheeted 8 Wheel Tipper), to a suitably licenced facility;
- An access road will be maintained outside the works area as far as practicable. If the loading of self-sheeted 8 Wheel Tipper Lorry is required within the designated dirty working area, the lorry driver will be instructed to remain in his cabin with doors and windows shut;
- Once the loading is complete, the driver will be required to activate the automated sheeting device and will be directed to a designated decontamination area where the lorry will be jet washed to remove any potential fibres. The decontamination zone will be located next to the exit point of the dirty area; and
- All plant decontamination process will be recorded in a decontamination register with individual plant forms (KRE-OPE-FRT-031 – Plant Decontamination Form, *Appendix C*) and photo evidence of the process taking place (see Section 3.2 of this document for further information).

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### 2.2.4 Re-instatement

Once the excavation has been extended to the formation levels, suitable treated material will be placed as fill to re-instate the ground and facilitate the construction of a working platform. As part of the re-instatement, where material is known to contain asbestos fibres above trace levels than works should be conducted under controlled conditions

- All site personnel in the working area to wear appropriate PPE/RPE in accordance with the licensing status;
- Unloading and placement activities will be damped down with a jet wash bowser as required; and
- Localised decontamination facilities will be provided in accordance with the licensing status.

Placed materials will be capped to manage the risk of asbestos exposure and reduce the risk of exposure in line with the approved Remediation Strategies (70075582-Bermondsey Main Site-Outline Rem Strat\_Oct20 Rev4 and 70075882-Bermondsey Campus-Outline Rem Strat\_Oct20 Rev4).

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### 3 Control Measures in 'Dirty' Working Area

The following procedure must be adhered to when setting up or working in a 'dirty' working zone. The dirty working zone is any controlled working area (CWA) where KR are likely to expose asbestos. Figure 1 below illustrates how the 'Dirty' and 'Clean' exclusion zones are to be accessed. The following procedures will be adhered to when setting up or working in a CWA:

- Netlon fencing, crowd barrier or HERAS fencing to act as an exclusion zone;
- Clear internationally recognised warning signage to demarcate the zone from clean working areas;
- Access and egress route from a Decontamination Unit (DCU) or changing area. In some instances where it is impractical to place DCU or changing area adjacent to the works area pedestrian routes should be agreed. These should be detailed in the daily briefing; and
- Operatives within the working zone must wear appropriate RPE and access / exit the area via the DCU or changing area as shown in Figure 1.

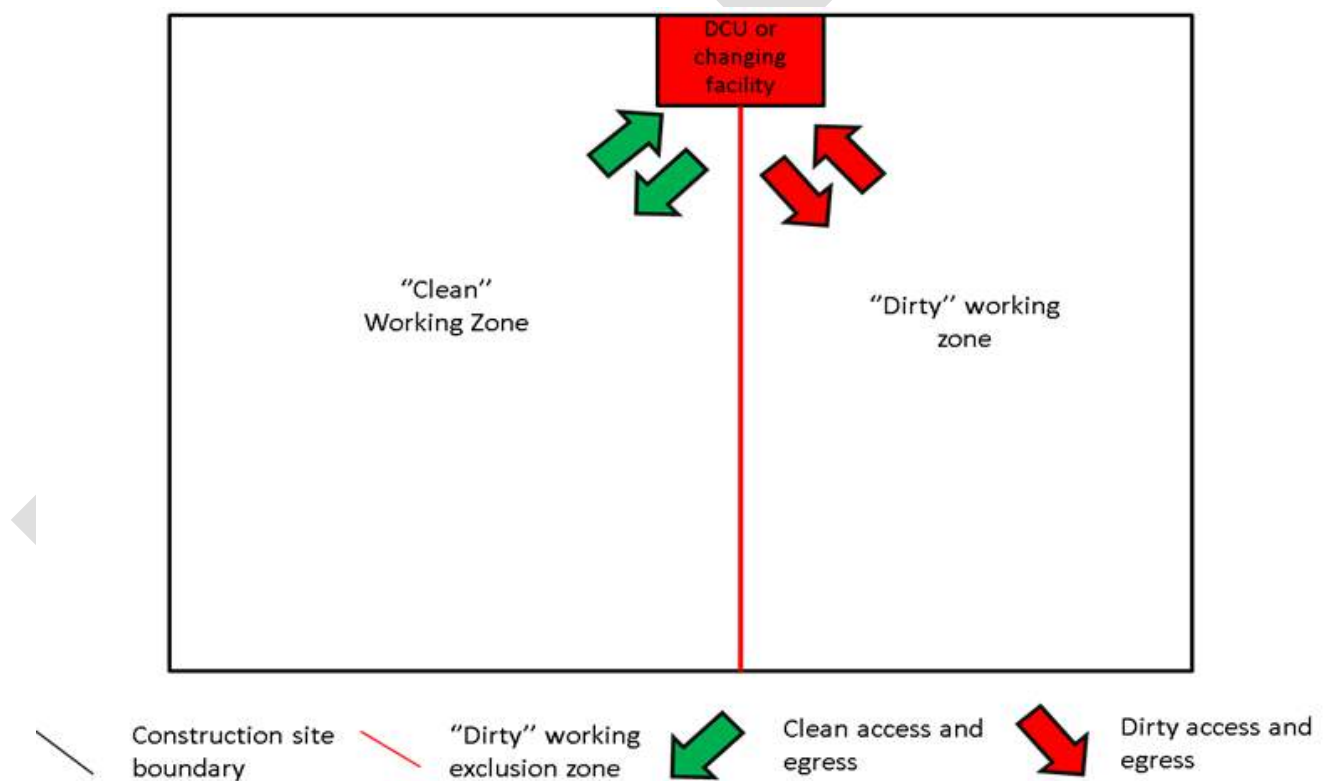


Figure 1: Illustration of Working Zones

## 3.1 Site Operatives

Table 4 shows the controls and RPE requirements for operatives working on site.

**Table 4: Controls for Site Operatives**

	Ground Operatives	Dumper Operatives	Plant Operatives
<b>UKATA Cat A and UKATA CAT B training for all operatives</b>	Yes	Yes	Yes
<b>Face fit tested operatives</b>	Yes	Yes	Yes
<b>Occupational health medicals (updated yearly)</b>	Yes	Yes	Yes
<b>Dirty working zone segregation</b>	Yes	Yes	Yes
<b>Use of decontamination unit on entering and exiting the dirty area</b>	At all times	At all times*	For access to plant
<b>Use Type 5 Disposable overalls BS EN ISO 13982</b>	Yes	Yes	Not required while operating plant
<b>Use of RPE (Sunstrom SR100 Half masks/disposable FFP3 maks)</b>	At all times	At all times	Not required while operating plant
<b>*with the exception of vehicle movement and tipping activity where the plant decontamination protocol is deployed with operative remaining on their vehicle for this process.</b>			

## 3.2 Plant and Equipment

The following controls will be required for all plant and equipment utilised on site:

- Well maintained plant with up to date service records;
- Plant decontamination protocol prior to exiting the dirty area; and
- Plant decontamination activity to be recorded in a decontamination register with individual plant forms (KRE-OPE-FRT-031 - Plant Decontamination Form, *Appendix C*) and photo evidence.

Plant decontamination procedure shall be completed in line with KRE-OPE-PRO-012 Plant Decontamination Procedure document (*Appendix D*).

## 4 ACM Discovery Strategy

During all excavation works, a visual assessment of the soils being removed will be undertaken continuously, looking for visual evidence of ACM. If unexpected contamination is identified (e.g. a cache of asbestos containing material) then the following actions will be implemented in order to ensure that the material is appropriately characterised.

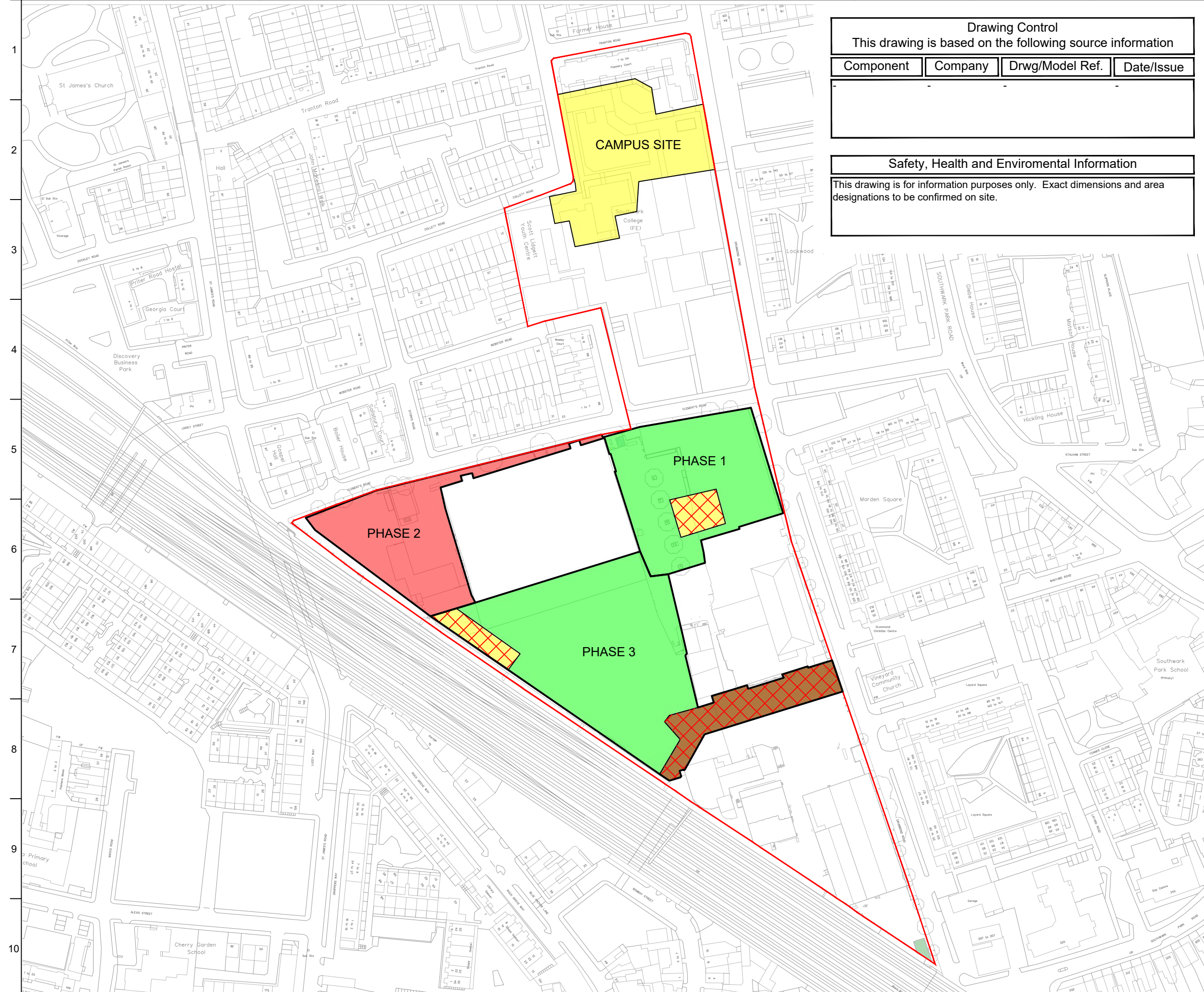
1. Local excavation activities will be temporarily suspended while an assessment of the area is undertaken, this included photos to be taken of the potential asbestos contamination. The Site Manager and the Technical Lead will be informed immediately.
2. The material will be assessed to identify whether or not the works will fall under licensed working conditions or if the works can continue under NNLW controls, a sample will be taken and analysed in an accredited laboratory.
3. The material will be covered or dampened down until a designated area has been set up to receive the ACM within the treatment area. The material will be stockpiled on an impermeable surface and dampened down or sheeted as required.
4. If the works are deemed to fall under NNLW conditions the material will be excavated whilst being sprayed, stockpiled and then put over the picking belt in accordance with the picking methodology.
5. If removal of the material is deemed to be licensable works, an ASB5 will be raised and the area will be covered until work is able to recommence in the area. Signage will be placed around the area. The material will then be picked over the picking belt in accordance with the picking methodology.
6. The excavation faces and bases will be inspected to ensure the visible asbestos has been removed, the excavation should extend as far as there is visual evidence of asbestos, unless otherwise unpractical. The excavation works will then continue as proposed.

This procedure relates only to the discovery of asbestos finds. For any other type of unexpected contamination (e.g. TPH) refer to the site general Discovery Strategy.

**Appendix A: Figures**

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**Drawing Control**  
This drawing is based on the following source information

Component	Company	Drwg/Model Ref.	Date/Issue

**Safety, Health and Environmental Information**

This drawing is for information purposes only. Exact dimensions and area designations to be confirmed on site.

- NOTES:**
- This drawing is to be read in conjunction with all relevant engineer's drawings, architect's drawings and specifications.
  - For setting out information, refer to the relevant architect's drawing. All elevations and levels are in metres and are related to Ordnance Datum (O.D.).
  - All dimensions are in metres unless noted otherwise.
  - Drawings should not be scaled either by hand or from the computer digital data, only figured dimensions are to be used.
  - The contractor shall be responsible for the design, build and temporary works. They shall provide all temporary works during construction.
  - Specific temporary works constraints arising from the permanent works design, if and where applicable, are noted on the Keltbray Remediation drawings to which they relate.
  - Any discrepancies in the information provided should be immediately reported to the Engineer prior to the commencement of work.

**KEY**

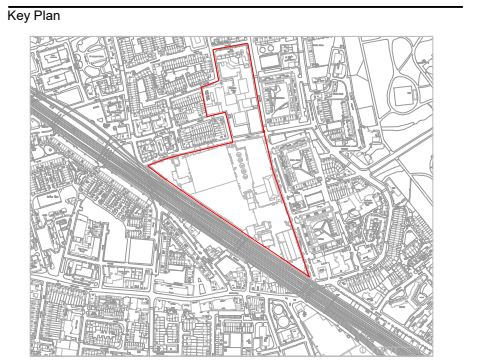
	SITE BOUNDARY
	MINIMAL ASBESTOS IMPACT WITH ASBESTOS FIBRE DETECTED BELOW TRACE LEVELS CAR 2012 DOES NOT APPLY.
	SITE CONDITION 1, SOILS IMPACTED WITH ASBESTOS FIBRE CONCENTRATION ABOVE TRACE LEVELS. NON-NOTIFIABLE NON-LICENSED WORKS.
	SITE CONDITION 2, SOILS IMPACTED WITH ASBESTOS CEMENT. NOTIFIABLE NON-LICENSED WORKS.
	SITE CONDITION 3, SOILS IMPACTED WITH LOOSE FIBROUS DEBRIS. NOTIFIABLE NON-LICENSED WORKS.
	HOTSPOT MANAGEMENT

P01	16.04.2021	WH	16.04.2021	DV
FIRST FOR ISSUE				
Rev	Date	By	Chkd	Appd

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**GROSVENOR**

Project Title  
**BERMONDSEY BISCUIT FACTORY**



Drawing Title  
**ASBESTOS MANGEMENT PLAN**

Scale at A3  
**NOT TO SCALE**

Role  
**X - SUBCONTRACTOR**

Suitability  
**S2 - FOR INFORMATION**

Keltbray Remediation Job No	Rev
<b>T6347</b>	<b>P01</b>

Name  
**BFX-KRE-X-000-XX-DR-CE-0009**  
Phase - Originator - Role - Zone - Level - Type - Element - Number



**Appendix B: Joint Industry Working Group Decision Tool for CAR2012 Work Categories**

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Project Reference	DC1220
Site Name	Bermondsey Project
Client	Grosvenor
Run by	Dafni Varthali
Date	1-Apr-21
Scenario details	Asbestos fibre concentration >0.001% and <0.05%

**Decision Support Tool for CAR2012 Work Categories**

Stage 1		Score
Hazard Factors		
Select ACM type (run model for each type to generate 'Worst Case' output)	Free dispersed fibres/fibre bundles	2
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Moderate/frequent occurrences of visible contamination by ACMs	3
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Low quantities - >0.01 to <0.05 %wt/wt	2
Sub-total		15
<i>Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs</i>		
Hazard ranking		Medium

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool. ☹  
 It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.

Stage 2		Score
Exposure Factors		
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.1 fibres/ml (4 Hr TWA) or <0.6 fibres/ml (10 minute STEL)	2
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected	4
Best description of primary host material matrix (soil/made ground)	Made Ground - Recycled Aggregate, Track Ballast	4
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Low	2
<b>Sub-total</b>		<b>16</b>
<b>Exposure ranking</b>		<b>High</b>
<b>Combined hazard and exposure ranking</b>	<b>31</b>	<b>High</b>

**Stage 3**

## Risk Assessment Outputs

Probable Licensing Status	Non-Licensed Work
RPE*	EN149 type FFP3 disposable
Dust Suppression**	Manual/localised dust suppression
Hygiene/Decontamination***	Localised and basic personal decontamination facilities

\*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

\*\*Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

\*\*\*Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

Project Reference	DC1220
Site Name	Bermondsey Project
Client	Grosvenor
Run by	Dafni Varthali
Date	1-Apr-21
Scenario details	Asbestos cement tile

**Decision Support Tool for CAR2012 Work Categories**

Stage 1		Score
Hazard Factors		
Select ACM type (run model for each type to generate 'Worst Case' output)	Bonded ACMs: cement, vinyl, composites, textured decorative coatings, bitumen products	1
Extent of degradation of ACMs at outset of work	Degraded (Significant degradation in ACM; material has lost its basic integrity)	3
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Non-friable ACM or ACM with fibres firmly linked in a matrix	0
Distribution of Visible Asbestos Across Affected Area	Moderate/frequent occurrences of visible contamination by ACMs	3
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - >0.1 %wt/wt	4
<b>Sub-total</b>		<b>11</b>
<i>Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs</i>		
<b>Hazard ranking</b>		<b>Medium</b>

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Stage 2		Score
Exposure Factors		
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.1 fibres/ml (4 Hr TWA) or <0.6 fibres/ml (10 minute STEL)	2
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected	4
Best description of primary host material matrix (soil/made ground)	Made Ground - Recycled Aggregate, Track Ballast	4
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Very low	1
<b>Sub-total</b>		<b>15</b>
<b>Exposure ranking</b>		<b>Medium</b>
<b>Combined hazard and exposure ranking</b>	<b>26</b>	<b>Medium</b>

**Stage 3**

## Risk Assessment Outputs

Probable Licensing Status	Notifiable Non-Licensed Work
RPE*	EN140 with P3 filter half mask
Dust Suppression**	Localised mechanical dust suppression
Hygiene/Decontamination***	Localised and enhanced personal decontamination facilities

\*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

\*\*Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

\*\*\*Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

Project Reference	DC1220
Site Name	Bermondsey Project
Client	Grosvenor
Run by	Dafni Varthali
Date	1-Apr-21
Scenario details	Asbestos insulation debris

**Decision Support Tool for CAR2012 Work Categories**

Stage 1		Score
Hazard Factors		
Select ACM type (run model for each type to generate 'Worst Case' output)	Loose fibrous asbestos debris	3
Extent of degradation of ACMs at outset of work	Disaggregated (dominated by loose fibrous material; extreme degradation in ACM and/or free asbestos fibres/fibre bundles)	4
Friability and degree of bonding by matrix (ACM matrix, not ground materials)	Friable ACM or ACM with fibres not linked in any matrix (free dispersed fibres/fibre bundles)	4
Distribution of Visible Asbestos Across Affected Area	Sporadic/random occurrences of visible contamination by ACMs	2
Amount of asbestos fibre in selected ACM/fibre type as % of host material	Large quantities - >0.1 %wt/wt	4
Sub-total		17
<i>Note: the asbestos licensing regime is unaffected by the type of asbestos fibre present in ACMs</i>		
Hazard ranking		High

No warranty, expressed or implied, or reliance, is provided in relation to the use of this tool. ☹  
It is contingent on users to satisfy themselves that the output from the tool is relevant and appropriate to the assessment being made.



Stage 2		Score
Exposure Factors		
Anticipated airborne fibre concentration - Control Limit or SALI?	<0.1 fibres/ml (4 Hr TWA) or <0.6 fibres/ml (10 minute STEL)	2
Anticipated duration of exposure to asbestos	> 2 hours in a 7 day period and Up to 10 hours in a day (e.g. full time occupational exposure)	4
Activity type and effect on deterioration of ACMs during work	Not low intensity, significant deterioration expected	4
Best description of primary host material matrix (soil/made ground)	Made Ground - Recycled Aggregate, Track Ballast	4
Respirable fibre index for ACM - RIVM report 711701034 (2003)	Medium	3
<b>Sub-total</b>		<b>17</b>
<b>Exposure ranking</b>		<b>High</b>
<b>Combined hazard and exposure ranking</b>	<b>34</b>	<b>High</b>

**Stage 3**

## Risk Assessment Outputs

Probable Licensing Status	Notifiable Non-Licensed Work
RPE*	EN140 with P3 filter half mask
Dust Suppression**	Localised mechanical dust suppression
Hygiene/Decontamination***	Localised and enhanced personal decontamination facilities

\*Where RPE has to be worn continuously for long periods (e.g. more than 1-hour), then powered RPE may be necessary.

\*\*Reduction in control measures possible if natural mitigation factors are present (e.g. raining, wet ground)

\*\*\*Guide only; suitability of selected personal hygiene measures may be reviewed on a site/contamination-specific basis

**Appendix C: Plant Decontamination Form**

DRAFT

Date: 

 Plant No: 

 Plant type: 

 Plant moving from; 

 Plant moving too; 

*All plant decontamination must be carried out in dirty areas under controlled conditions*

*Large lumps of spoil removed from the tracks, buckets, wheels or skips?*

 Y

 N

*Buckets, attachments, wheels and skips jet washed*

 Y

 N

*Cabin and parts of the body that come into contact with spoil jet washed*

 Y

 N

*Carry out plant checks, Oil, water etc.*

 Y

 N

*Change plant ID card from Red to Green*

 Y

 N

*Once the above is completed the plant is suitable for use in clean areas.*

Cleaned on behalf of Keltbray Remediation

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Print: \_\_\_\_\_

**Appendix D: Plant Decontamination Procedure**

DRAFT

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# Plant Decontamination Procedure

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## Company Proprietary Information

The electronic version of this document is the latest revision. It is the responsibility of the individual to ensure that any paper material is the current revision. The printed version of this procedure is uncontrolled, except when provided with a document number in the field below:

Document No	KRE-OPE-PRO-012	Rev	00
Uncontrolled Copy	<input type="checkbox"/>	Controlled Copy	<input checked="" type="checkbox"/>
		Date	Feb 17



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## 1. Introduction & Purpose

The purpose of this procedure is to provide information on the Keltbray Remediation (KRE) Plant Decontamination Procedure. As a remediation Contractor the Plant and machinery we use to undertake work can be exposed to contaminated materials (predominantly contaminated soils), to prevent Gross contamination onsite when moving between 'Clean' and 'Dirty' operations a process of decontamination must be followed. This procedure should be read in conjunction with Project Method Statements and Risk Assessments.

## 2. References

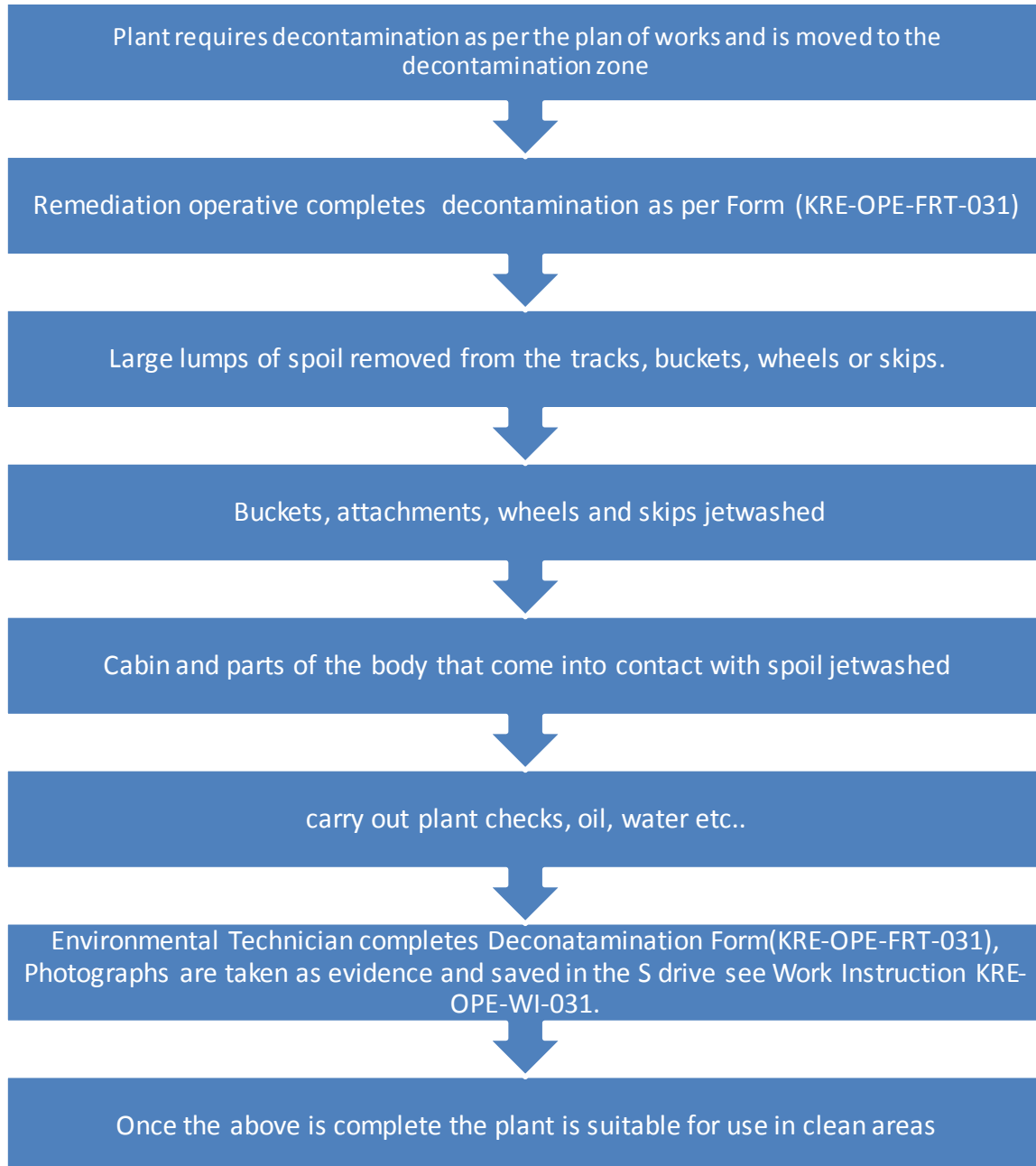
Standard	Title & Description	Clause

## 3. Mobilisation

The requirements of the decontamination procedure need to be taken into consideration during mobilisation, it must be ensured that materials are procured and delivery dates arranged in line with the project program.

## 4. Live

Outline Plant Decontamination Procedure detailed below;



Plant and equipment requiring decontamination (as per the plan of works) will be moved to the designated Plant Decontamination Zone (PDZ) and jet washed by a suitably qualified Remediation Operative to remove contaminated material (predominantly soils contaminated with ACM's, Hydrocarbons or Japanese Knotweed). When cleaning special attention should be afforded to the wheels/tracks of the machine and the attachment used for handling spoil (generally a bucket).

Where practical the decontamination zone should be located adjacent to any material processing areas to localize contamination. The area should be large enough to provide 1 m of clearance between the internal boundaries of the Heras fenced exclusion zone with the largest piece of plant on site in the zone).

The decontamination zone acts as a water permeable bund and will capture/contain contaminated components i.e. soils, ACMs, organic content etc. by means of a layer(s) of geo-textile placed on the floor inside the decontamination zone overlapping sandbags or similar placed on the perimeter. All entry points into drains/manholes within 5 m of the area should be protected with sandbags, the decontamination zone should have clearly visible signage displayed on the outside of the fence. Please see image below as an example



The final design/material used to construct the decontamination zone will be determined by the nature and type of the contaminants present at the site. For example if significant hydrocarbon were present, it is likely that an oil absorbent material would be used in the bund construction in addition to a geotextile. If asbestos contamination is present in made ground/soils then a non-woven geotextile would be used to contain this.

The activity of decontaminating plant must be risk assessed on a site specific basis, however generally the Remediation Operative would require the following training to be considered suitably qualified to undertake the task;

- CAT B Asbestos Awareness
- Face fit tested to mask stated in Risk Assessment (FFP3 or Sundstrom SR100 half mask)
- Safety Critical or Non-License asbestos medical
- CSCS card

The Remediation operative would be required to wear the appropriate task specific PPE and RPE in line with the Project Specific RAM's, generally;

- Hard Hat BS EN 397
- Full Face Visor (BS EN 166 D.1.F.3 CE Certified)
- Hi Visibility clothing
- Safety Boots BS EN 345 S1P
- Gloves BS EN 420
- Sundstrom SR100 half mask/ FFP3 mask
- Disposable overalls Type 5 –BS EN ISO 13982

The above PPE should be worn correctly in accordance with Manufactures Instructions;



Each time Plant is decontaminated the Environmental Technician will complete a Decontamination Form (KRE-OPE-FRT-031) see work instruction (KRE-OPE-WI-35). A minimum of 1 photograph should be taken by the Environmental technician / Remediation operative as evidence to accompany the Decontamination Form (KRE-OPE-FRT-031), photographs will be stored electronically in a new folder titled Plant Decontaminations on the S drive in the photographs folder

of the Technical and environmental folder. Photographs should be saved with the date and the decontamination form number as the title. See some examples of photographs below;



Following the completion of all plant decontamination or when the decontamination zone becomes degraded through over use; it should be decommissioned. Decommissioning of the decontamination zone should only start when it has completely dewatered. Decommissioning must take place under the same controls as the plant decontamination itself.

All the sandbags, geo-textile and other material use in the construction of the decontamination zone must be collected up and placed into a banded skip (DPC lined). These waste materials must be classified/consigned correctly (see KRE-OPE-PRO-005 - Muckaway Procedure). Once all decontamination zone materials have been removed and the underlying ground is exposed, the ground surface must be cleaned up. This can be completed in one of two ways; if the ground is solid i.e. concrete or tarmac a road sweeper should be used to clean/remove any residue (the sweeper must then tip the collected residue to a pre-agreed location for either for direct re-use in the works, re-use following a permitted on-site treatment or off-site disposal to a suitably licensed facility). If the underlying ground is not solid i.e. soil/made ground then the surface scrape of a sufficient depth of material (100mm) must be carried out and either send for suitable off-site disposal or if appropriate to be re-used in the works (if a permitted method of on-site treatment is possible i.e. soil stabilization of hydrocarbon contaminated soils, then this material can be re-used in the works. Agreement with the technical team must be sought at an early stage in the project before proceeding)

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## 5. Role and Responsibilities

It is the responsibility of the Site Manager to manage this process and ensure that plant is decontaminated as per this procedure and recorded correctly. However this can be delegated to a Junior Site Manager.

## 6. Associated Documents

Master documents are be signed by the initiator and date indicated to evidence their authority. Forms are controlled via their FRT number and revision status. Standard documents, e.g. pre-printed material are listed in the appropriate procedure or work instruction. References to documents and records:

Ref.	Title & Description
KRE-OPE-FRT-031	Plant Decontamination Form
KRE-OPE-WI-035	Plant Decontamination Form Work Instruction
KRE-OPE-PRO-005	Muckaway Procedure

## 7. Terms & Definitions

Term	Definition
<b>KRE</b>	Keltbray Remediation
<b>RAMS</b>	Risk Assessments and Method Statements
<b>ACMs</b>	Asbestos Containing Materials