

METHOD STATEMENT



<i>Project</i>	Drakelow Power Station – 1st Phase	<i>Postcode</i>	DE15 9UA
<i>Work Element</i>	Site Clearance, Slab Lift, Remediation & Earthworks		
<i>Produced for</i>	Countryside Properties		
<i>Prepared by</i>	Andy Gasse	October 2021	





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REVIEW AND APPROVAL BY SITE MANAGER

This document must be reviewed by the Site Manager prior to commencement to ensure it accurately reflects the work being undertaken on site. Further reviews may also be required due to other events, such as changes in legislation, prevailing site conditions or any change to design or working practices. Reviews are to be carried out weekly, or in timely response to an event, and any updates recorded.

DECLARATION BY SITE MANAGER

I confirm I have read and reviewed this document and will update and / or amend as required to suit my method of working and traffic management on site.

Rev	Name of Site Manager	Contact No.	Signed	Date
00	Mike Phillips	07793 936 958		



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1 INTRODUCTION

This method statement has been prepared for site clearance, remediation and earth works to Drakelow Power Station in Burton-on-Trent on behalf of Countryside Properties.

The Principal Contractor for the site is McAuliffe whose Construction Phase Plan should be read in conjunction with this method statement. This method statement will highlight the measures being taken to ensure minimal disturbance to the local environment and to comply with current Health & Safety legislation.

1.1 Scope of Works

Note: the works outlined below are anticipated, although the final scope and price is not yet agreed

The work covered in this document comprises the following, summarising the sequence of activities:

- Mobilise & site set up
- Pre-start inductions, briefings, checks, inspections
- Assess & set up work areas, fencing, traffic routes
- Identify existing services & features, assess & protect as required
- Working under or near overhead services
- Erect perimeter fencing – supplied by McAuliffe
- Erect exclusion fencing:
 - tree protection – *not currently in scope – TBC*
 - **invasive plants (being treated by others)**
- Remove trees / stumps: dispose off-site
- Strip vegetation / scrub / small trees: dispose off-site
- Strip organic surface ~100mm depth: stockpile to decompose in designated location on site
- Asbestos removal (debris): Hand pick ACM debris on ground - *not anticipated – TBC*
- Removal of slabs, basements, foundations, hardstandings
- Remediation of contaminated areas:
 - Hotspot removal
 - Asbestos in soils
 - Clean cover system
 - Ex-situ / In-situ treatment - *not anticipated – TBC*
- Site turn over to selected areas – depth of turnover varies according to area requirements
- Process hardcore arisings to 6F2: screen / crush
- Cut & Fill earthworks to required levels
- Loading materials for removal off-site – *not currently in scope – TBC*
- Import materials: 6F2
- Place 6F2 material:
 - Pile mats to plots
 - Clients' compound – *TBC*



- Spread & level topsoil – *not currently in scope, possibly required for pond areas – TBC*
- Demobilise from site

1.2 Proposed Methodology / Strategy

Drakelow Phase 1 is split into the following Build Areas / Phases (See McA Volumetrics):

- Build area 1CS (CS = Countryside)
- Build area 2CS
- Build area 3CS
- Build area 4CS
- Build area 1DW (DW = David Wilson Parcel of Land to be purchased off Countryside. We are providing enabling works preparation and piling mats at present).

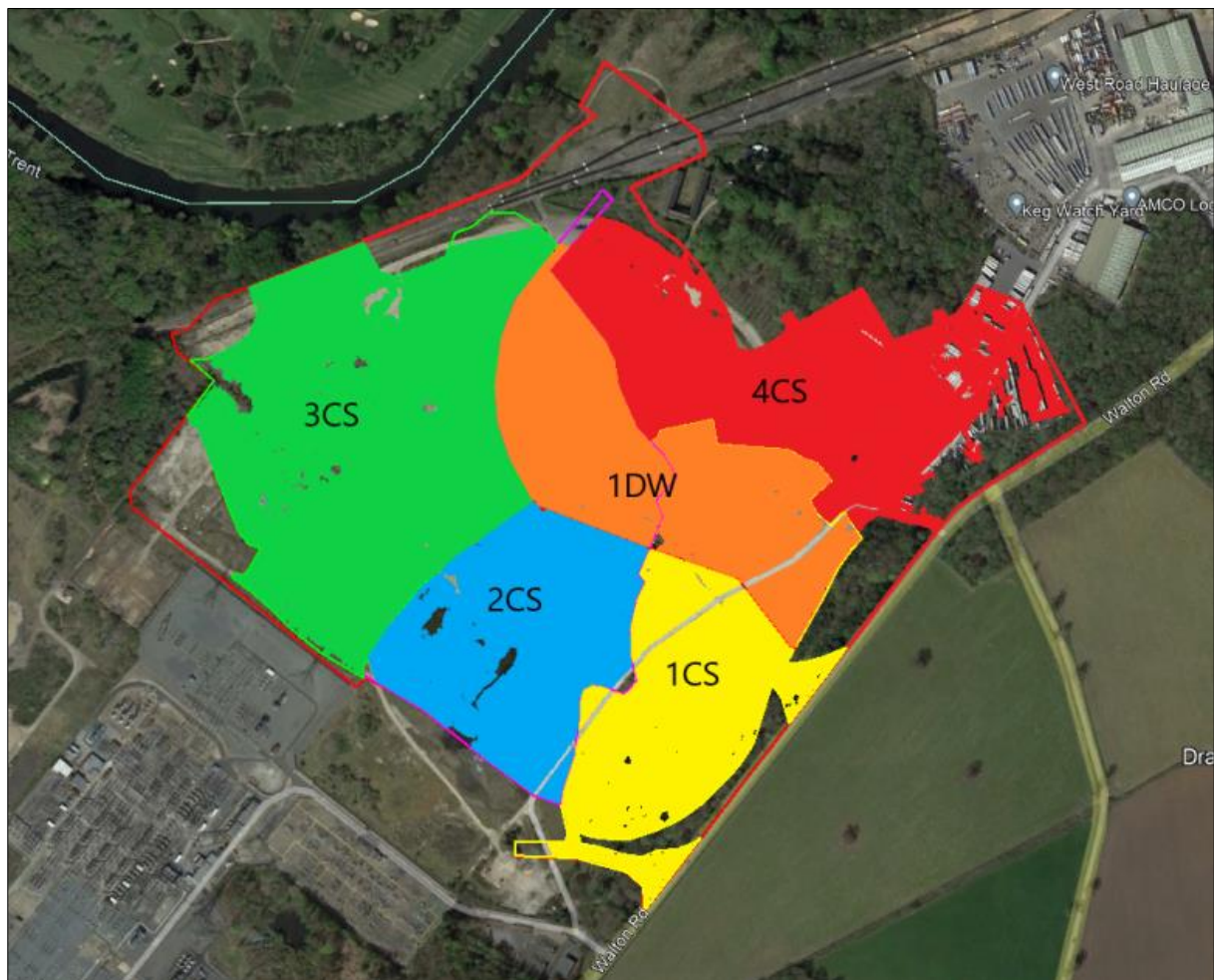
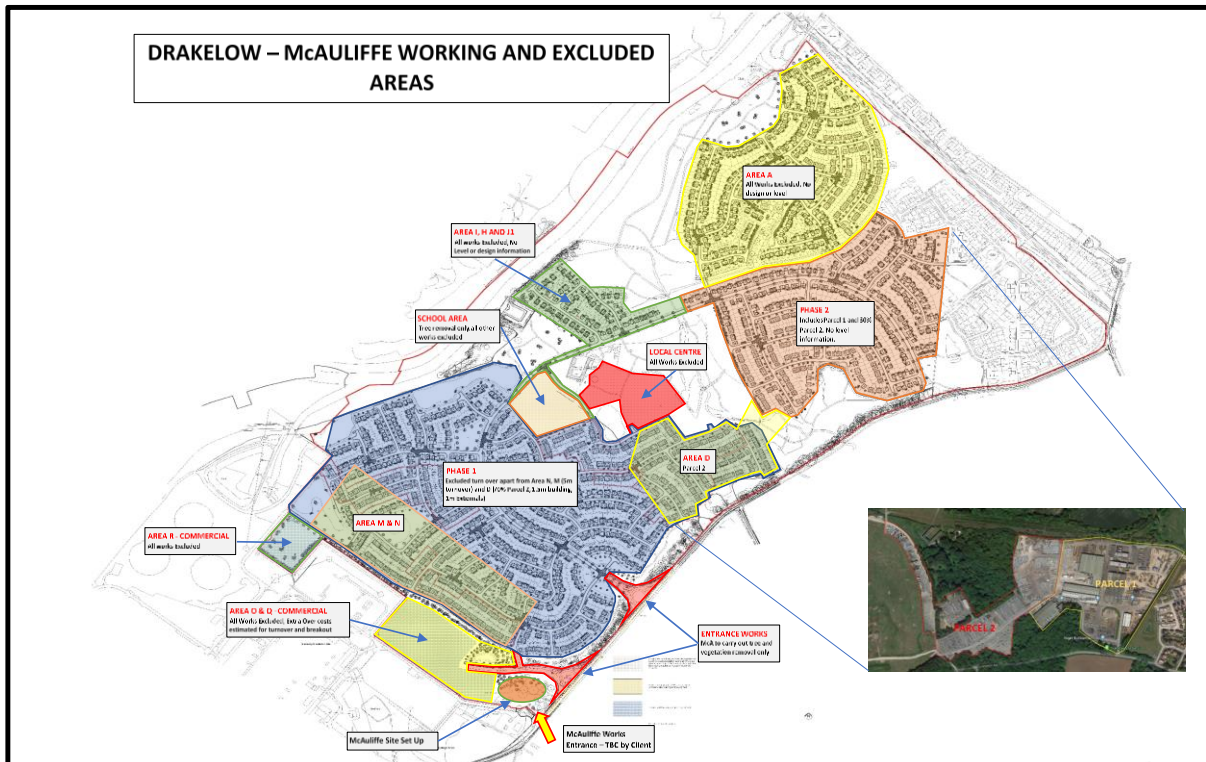
Sequence of Works

1. Tree/Veg removal- whole phase 1
2. Build area 1CS (CS = Countryside)
3. Excavation and breakout of Area M & N (Former power station) excavation to 5m depth and removal of all hardstanding and foundation.
4. Build area 2CS
5. Build area 3CS
6. Ponds 1A, 1B, 1C, 1D
7. Build area 1DW
8. Build area 4CS
9. Pond 3

In addition to scope outlined above:

- Tree protection fencing to be provided by client
- Remove trees / stumps – [Full Phase 1 tree removal](#)
- Removal of slabs, basements, foundations, hardstandings – Area M & N (Former power station) excavation to 5m depth and removal of all hardstanding and foundation.
- Remediation of contaminated areas:
 - Hotspot removal
 - Asbestos in soils – Area M, S, P enhanced Clean capping thickness to 1000mm. (To be reduced to 600mm with Terram layer, this is not confirmed yet). All other areas to have 600mm apart from area D, no capping required
 - Clean cover system – Area M, S, P enhanced Clean capping thickness to 1000mm. (To be reduced to 600mm with Terram layer, this is not confirmed yet). All other areas to have 600mm apart from area D, no capping required
 - Ex-situ / In-situ treatment – Contamination allowance of 1,000m³. Unknown from below former power station slab / foundations (slab 0.6m - 0.8m thick)
- Site turn over – [In area of obstructions only, Areas M & N + Road Box to 1.5m](#)

1.3 Site Plans





2 HEALTH & SAFETY

2.1 Management Structure

The responsibility for implementation of this document and all Health & Safety matters on site for McAuliffe rests with the Site Manager, who reports directly to the Production Director.

Contact List

Name	Position	Contact Number
Mike McAuliffe	Production Director	07801 230 293
Richard Quinn	Operations Director	07813 016 556
Matt Handley	Project Manager	07831 661 191
Chris Cassell	Contracts Manager	07973 526 553
Mike Phillips	Site Manager	07793 936 958

2.2 Competency of Personnel

The Site Manager will be SMSTS / SSSTS, first aid and asbestos awareness / removal trained.

All operatives working on site must hold a current CSCS card or CSCS Partner card relevant to the type of work they will be undertaking or plant / vehicle they will be operating. CSCS Partner cards bear the CSCS logo - examples of those accepted include CCDO, CPCS, CISRS, EUSR, NPORS, PAL, PASMA, TTM

2.3 Method Statement Briefing

All operatives involved in this activity must attend the McAuliffe site induction, followed by a briefing on this and any other associated documents (risk assessments, COSHH assessments etc.)

Operatives will be given the opportunity to raise any questions to ensure they fully understand this document. All persons are expected to raise matters of safety concern as soon as possible - these should be done in the first instance with the McAuliffe Site Manager.

In addition, all persons on site are positively encouraged to raise and discuss health & safety matters, report near misses or provide feedback - this should be done as they arise or soon after, rather than wait until the next safety briefing or toolbox talk. Feedback cards are available to fill out by persons for this purpose, anonymously if they wish.

Once briefed, operatives must sign the signature sheet at the end of this document to confirm their understanding and acceptance of the safe working practices described.

OPERATIVES MUST NOT COMMENCE WORK UNTIL THEY HAVE COMPLIED WITH THE ABOVE. FAILURE TO DO SO WILL RESULT IN A BAN FROM SITE AND DISCIPLINARY ACTION WHICH MAY RESULT IN DISMISSAL.

3 SITE ASSESSMENT

3.1 Extent of Works

The site perimeter is outlined yellow as shown on the plan below.



3.2 PPE (Personal Protective Equipment)

The minimum requirement for PPE to be worn when carrying out works on site is:

- Safety Helmet to BS EN 397
- Hi-vis Vest to BS EN ISO 20471
- Safety Footwear to BS EN ISO 20345

In addition, the following must be worn when specified either in this document, or in the associated Risk / COSHH Assessment, according to the risk that has been assessed:

- Eye Protection to BS EN 166
- Ear Protection to BS EN 352
- Gloves (mechanical risks) to BS EN 388
- Gloves (chemical risks) to BS EN 374
- Disposable Respirator to BS EN 149 (Type FFP3)
- Disposable Overalls (Type 5) to BS EN ISO 13982-1
- Half Mask Respirator to BS EN 140 with P3 filter
- Full Body Harness to BS EN 361

Personnel will need to wear flotation jackets or buoyancy aids when entering danger areas where there is risk they could fall into water and drown. The following are considered such danger areas:

- Within 2m minimum (measured horizontally) of the water's edge
- Within 2m minimum (measured horizontally) of the leading edge of a steep bank which, if a person stumbled onto, could not prevent themselves from falling into the water
- **Note: plant operators in an enclosed cab **SHOULD NOT** wear flotation jackets or buoyancy aids - this will compromise safe operation of the machine, and impede any escape from the cab.**
- Lifejackets to BS EN ISO 12402-4 (sheltered waters)
- Buoyancy Aids to BS EN ISO 12402-5 (swimmers only, sheltered waters, help at hand, **NOT A LIFEJACKET**)



In addition, lifebuoys (BS EN ISO 14144) should be provided at frequent and prominent positions near to, but set back from the water's edge to use for rescue if required.

3.3 Plant & Equipment

Plant & equipment required for this project includes, but is not limited to the following:

- 360° excavators (sizes range up to approx. 50t) & various attachments
- D6 Dozer
- Compaction plant (rollers)
- Articulated Dump Trucks (fitted with reverse alarms & cameras)
- Small hand tools
- Diesel bowzers (110% double skinned, with spill kit)
- Dust suppression equipment
- Crusher
- Loading shovel
- Waste skips
- Road wagons (fitted with reverse alarms & cameras)
- Decontamination unit

Examination and testing certificates applicable to plant & equipment will be checked by the Site Manager prior to commencing work and copies kept on site.

3.4 Hazardous Materials

The following table provides a list of potential hazardous materials whose presence is either known or, if not known, is suspected based on visual evidence:

Type of Material / Containers / Potential Source	✓ If Present or Suspected
Asbestos Containing Materials (ACM's)	✓
Underground & Above Ground Storage Tanks (UST's / AST's)	✓ possible
Other Storage Containers (e.g. drums) for Gas or Chemicals	×
Substations & Transformers - PCB's	× none observed
Biological Hazards (e.g. bird droppings, syringes, septic tanks)	× none observed
Other (specify)	none known

ACM's: Only operatives trained in accordance with the **Control of Asbestos Regulations (CAR) 2012** may carry out asbestos works. Asbestos removal will be carried out prior to other works commencing in these areas. Refer to Remediation Strategy. See also below.

UST's / AST's: Storage tanks, including septic tanks, will be investigated for hazardous content so that an early programme to clean, de-gas and remove contents will be targeted to prevent unauthorised release. Likewise, other storage containers will be investigated to determine the contents so they can be dealt with or disposed of appropriately. *Not anticipated*



PCB's: If substations / transformers are or were present there is risk of underlying soils being contaminated with PCB's. If discovered, operatives are to notify the Site Manager immediately who should seek further advice from the Project Manager. *Not anticipated*

Biological Hazards: Ground workers should remain vigilant for any biological hazards that may be present and advise the Site Manager immediately if any are discovered.

- Method for removing syringes, needles and other sharps are outlined further below. *Not anticipated*
- Septic tanks and cesspits will have the liquid / sludge contents pumped out and the inside of the structure cleaned if necessary before removal. *Not anticipated*

3.5 Material Arisings

The project may produce a variety of material arisings including, but not limited to the following:

- | | |
|------------------------------------|------------------------------|
| • General Waste | • Organic (Green) Waste |
| • Soils | • Hardcore / Rubble |
| • Metals | • Timber |
| • Plastic | • Plasterboard |
| • Refrigerators / Freezers (CFC's) | • Fluorescent Lighting Tubes |
| • TV's and Monitors | • Gas Cylinders |



4 SURPRISES, SUSPICIONS & UNKNOWN DISCOVERIES – PROCEDURES

4.1 Introduction

By virtue of the nature of the works, at any time during the project there is possibility of discovering items, debris, materials or hazards that are either previously not known about, or in areas where they are unexpected, or both.

It is realistic to assume that discoveries can occur at any time during the works and extra vigilance should be exercised by operatives at all times. Examples of unknown or suspect discoveries includes, but is not limited to:

- Tanks / Containers / Contents
- Asbestos / Hazardous Materials
- Protected Species / Habitats
- Historical Relics
- Contaminated Soils
- Buried or Concealed Structures
- Biological Hazards e.g. needle sticks
- Invasive Plants
- Unexploded Ordnance
- Existing Services & Sewers

IF ANY UNKNOWN OR SUSPECT DISCOVERIES ARE ENCOUNTERED, OPERATIVES ARE TO CEASE ACTIVITIES, SECURE THE AREA AND ADVISE THE SITE MANAGER IMMEDIATELY.

The Site Manager will determine an appropriate course of action and assess whether they are to be removed safely under controlled conditions ahead of the works.

Some works may be required to provide access for adequate assessment. Once the unknown feature has been identified and assessed (location, access, quantity, type), separate detailed RAMS may be required for removal. Note that methods for removal or dealing with some of the items above may already be covered within this document.

IN ALL CASES OPERATIVES ARE TO AWAIT THE SITE MANAGER'S INSTRUCTION BEFORE PROCEEDING.

4.2 Ecological Discoveries

Protected Species / Habitats

If, during the works, the presence of protected species (e.g. bats, nesting birds, badgers, newts etc.) is suspected or discovered, works will immediately cease in the area, the Client notified (and the ecologist, if one is appointed) and further instruction to proceed awaited.

Invasive Plants

If notable invasive plant species are suspected, such as Japanese Knotweed, Mare's Tail, Giant Hogweed or Himalayan Balsam, operatives are to cease activities, secure the area and advise the Site Manager immediately who will assess the findings and determine an appropriate course of action.

If invasive plant species are confirmed, the area will be cordoned off as an Exclusion Zone with signs prominently displayed and the Client notified for further instruction.



4.3 Discovery of Unknown Asbestos in Structures

There is always a possibility of discovering locations of unknown asbestos in structures, not previously identified during asbestos surveys or investigations. Such locations are:

- Previously Inaccessible Areas
- Basements & Cellars
- Materials used as Permanent Shuttering
- Within Concealed or Buried Ducts
- Beneath or Within Items of Plant
- Cast In-Situ to Concrete Slabs & Beams

Further asbestos may be identified during the works and extra vigilance is to be observed at all times. If unknown suspect ACM's are discovered, the Site Manager is to be notified at once, the area sealed off and all works in the immediate area cease pending assessment by the Site Manager.

4.4 Suspect or Contaminated Ground

During the works there is possibility of discovering suspect ground conditions or features that were previously not known about. Examples of discoveries include, but are not limited to:

- Invasive Plants / Impacted Soils
- Contaminated Soils
- Loose Asbestos Fragments or Debris
- Subsurface Structures

The Site Manager will determine an appropriate course of action depending on the findings. If required, the Client will be advised and further assessment by a Consultant should be arranged with samples taken to identify the suspect materials.

Suspect Asbestos in Ground

If asbestos is suspected in the ground it will be presumed as such until proven otherwise. The area is to be cordoned off as an Exclusion Zone with warning signs prominently displayed. The exposed surface is to be monitored for potential dust release and damped down if required - damping down to be done in moderation to prevent impacted soils being washed through and migrating to other areas.

It is quite common when uncovering ground to discover localised and small quantities of ACM fragments or debris. Removal procedures are outlined in this document.

However, if the extent is further widespread or ACM's are suspected as licensed, then further advice will be sought to determine a safe method to proceed which will likely include, as appropriate, sample / analysis, quantification, any relevant notifications and plan of work in accordance with **CAR 2012**.

4.5 Unexploded Ordnance (UXO)

Operatives and ground workers on site should remain vigilant to any potential buried UXO and seek immediate advice if any potential UXO is suspected.

Refer to **Emergency Procedures: Fire & Emergency Plan**.



5 STANDARD PROCEDURES

5.1 Pre-Start Activities

The Site Manager is to carry out the following prior to commencing or upon arrival to site:

- Check documentation required (as applicable) is available on site:
 - HSE notification – F10 (IMS Folder - Section 1 / by Principal Contractor)
 - HSE asbestos notification(s) – ASB5 / ASBNNLW (IMS Folder - Section 5)
 - Utilities / Services – disconnections, purging, isolations, live services, plans
 - Any other permissions, permits and licences required
- Check mains water supply is available (take meter reading and photograph)
- Check boundaries for security and integrity - advise Client / Principal Contractor of any potential breach areas and erect / supplement fencing to contain site if required.
- Check for biological hazards e.g. drug / needle abuse (sharps), animal faeces.
- Dilapidation photographs to be taken of adjacent structures, boundaries etc. These should continue to be taken regularly during the works.
- Implement the Site Traffic Management Plan (**STMP**) and display on site notice board for communication to all personnel on site. The **STMP** should identify location of welfare, fuelling area, hazardous working areas, exclusion zones, drop zones, safe traffic & pedestrian routes and site speed limits. The **STMP** is to be updated regularly when conditions change.

5.2 Proximity to Boundaries

Any conditions for these works stated within Party Wall Agreements, or other such agreements (arranged by the Client and advised to McAuliffe) are to be adhered to.

Whether or not party wall conditions apply, any works that are close to existing boundaries will be further assessed by the Site Manager to determine any protection measures required.

Due to insufficient space it may not be possible to erect fencing for an exclusion zone. In these cases, the Site Manager will assess the risk to retained features, 3rd parties or property adjacent to work areas, liaise with owners and / or occupants as applicable and, if necessary, station a banksman in adjacent properties to act as a watch brief. The banksman will communicate with the excavator operator using hand signals or 2-way radio.

5.3 Retained / Protected Features

The location of retained or protected features, such as listed buildings, retained structures or areas of archaeological interest, is to be assessed prior to set up and commencing works.

Retained and protected features are to be identified on site and safeguarded with signs prominently displayed. Fencing should also be erected if necessary to form an exclusion zone.

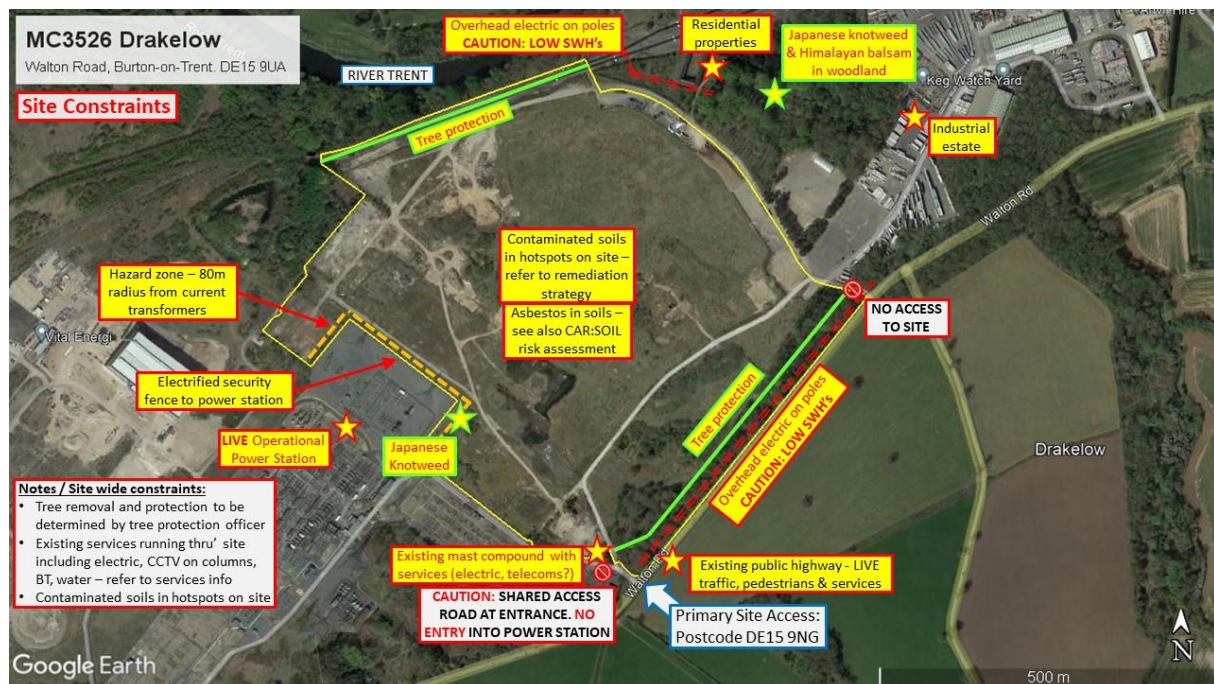
In addition, they should be identified on the **STMP** (Site Traffic Management Plan) to be displayed on site and updated by the Site Manager regularly when conditions change.

Consideration should be given so that activities are, where possible, located such that retained or protected features are not affected by or do not affect the works.

No works will be undertaken in areas where retained or protected features will affect, or be affected by the works, until protection measures (such as a safe stand-off) are established.

5.4 Site Constraints, Working Areas & Exclusion Zones

The site will comprise of several different areas, some of which will be fixed and some of which will move according to prevailing site conditions, progress of works etc.



During the works the only persons in the designated work areas will be employees or subcontractors of McAuliffe.

Consequently, there will be minimal interface between pedestrians and mobile plant / vehicles, apart from operatives crossing to or from their plant / vehicles at break times.

Areas are to be fenced off or delineated as appropriate with warning signs prominently displayed on site and updated to reflect the changing progress of the work.

In addition, they should be identified on the **STMP** to be displayed in the welfare and updated by the Site Manager regularly when conditions change:

- Hazardous work areas e.g. asbestos areas, drop zones, loading areas etc. are to be identified and protected with signs prominently displayed
- Fencing will be erected to form an exclusion zone with controlled access for designated operatives only
- Skips to remove waste material will be placed within the exclusion zones or loading areas
- Existing hazards and retained features are to be identified and protected with signs prominently displayed - fencing will be erected if necessary to form an exclusion zone

- Suitable locations for safe access routes will be determined with consideration to work areas, exclusion zones and haulage routes

5.5 Site Access

Site access will initially be gained via the existing access on Walton Road. All personnel shall report to the site office upon arrival. This is the **PRIMARY ACCESS** to be used for McAuliffe works.



Access to site will be controlled by utilising a **Double Gate System** which allows vehicles to enter a controlled holding zone directly from the public highway.

Generally, the Site Manager will be aware of incoming vehicles and can control safe and timely access into site. However, the double gate system will also allow safe access for vehicles that arrive unexpectedly, without restricting the highway.

Double Gate System: Gate 1 (G1) will be located adjacent to the public highway and left open during the day with signage displaying the operation of the site. Gate 2 (G2) will be set back from the highway at a distance long enough to accommodate vehicles entering the site but remain closed and locked - access through G2 will only be via contacting the Site Manager. In this way the public highway is kept clear whilst uncontrolled entry into the site is prevented. G2 will remain closed and locked except for entry and exit, or it is fully manned.

Visitors (including delivery drivers) will be unable to access the site without contacting the Site Manager or, during breaks, prevented from accessing the work zone.

When required an experienced banksman wearing high visibility clothing will be posted at the site entrance to protect pedestrians and supervise vehicular access.



To prevent reversing onto the highway vehicles will be turned around on site ready to exit site forwards if possible. Reversing on / off the highway is to be avoided where possible however, if absolutely necessary, it will require a banksman to monitor traffic and pedestrians.

5.6 Deliveries & Unloading of Plant & Materials

Deliveries of plant, equipment & materials will be co-ordinated as far as possible so that the Site Manager can prepare for receiving such with minimal fuss on site. Items will be delivered to site and off loaded in an area determined by the Site Manager.

Unloading of items (and, likewise loading when items leave site) will be carried out in a controlled manner. If necessary the loading will be monitored by a banksman, situated in a prominent position but at a safe distance from the activity.

Mobile plant will be driven from the transport either by the vehicle driver, or the site operator, provided they are suitably qualified and experienced for that category of plant.

5.7 Lifting Operations on Site

Lifting operations on site must be carried out in accordance with the ***Lifting Operations and Lifting Equipment Regulations 1998 (LOLER)***. Each lifting operation (i.e. an operation to lift or lower a load) needs to be planned, supervised and carried out safely. The person planning the operation should have adequate practical and theoretical knowledge and experience of planning lifting operations

For clarity, the following terms are defined:

- ***Lifting equipment*** means work equipment used for lifting or lowering loads, and includes MEWP's, forklift truck telehandlers, lorry mounted cranes (hi-ab), skip collection vehicles etc.
 - Lifting equipment also includes an **excavator** (or other earth-moving machinery) adapted to be used for lifting using lifting attachments (e.g. forks, grabs, lifting magnets), but not when used for normal earth-moving operations
- ***Lifting accessory*** means work equipment for attaching loads to machinery used for lifting. Lifting accessories include slings, removable eyebolts, chains, ropes, shackles, grabs etc.

Complex or non-routine lifting operations should be planned each time the task is carried out. This may involve using a specialist contractor e.g. contract lift

Routine lifting operations will be planned and undertaken using the procedures provided below and control measures outlined in the risk assessment

5.8 Routine Lifts

Routine Lifts can be planned by the Site Manager, or those using the lifting equipment such as the operator, or a slinger, provided they have appropriate knowledge and experience. Examples of routine lifts that may occur on site includes, but is not limited to the following:

- Loading or offloading items from a delivery vehicle using the vehicle hi-ab or an excavator
 - Such items include cabins, containers, bowsers, drip trays, fence panels
- Moving items on site using an excavator to lift from one place to another
 - Generally, the excavator will not travel during this, or will only travel a short distance



- Normal use of a forklift / telehandler for moving loads or items on site, or loading / offloading items from a delivery vehicle
 - Such items will generally be palletised or have suitable forklift carry points
- Normal use of MEWP's for safe working at height
- Use of an excavator with grab attachment to load materials into skips

Preparing for a Routine Lift:

- Assess the weight and size of the load, including how lifting accessories will be attached (dedicated lifting points should be used if these are provided)
- Check that the capacity or SWL rating of the proposed lifting equipment is sufficient to lift the weight of the load (including the weight of lifting accessories)
- Choose the appropriate accessories for lifting, including checking their rating & capacity
- Ensure test certificates or reports of thorough examination are valid and current for **all** lifting equipment and accessories to be used
- Carry out a visual check of lifting equipment and accessories to ensure they are free from defects (splits, breaks, deformities etc.)
 - Also carry out a visual check of any dedicated lifting points provided on the load / item
- Check ground conditions are suitable and stable in the lifting area or along transit routes
 - Use stabilisers or outriggers when stationary if provided
 - Also prepare a suitable place to set down the load
 - Avoid rutted ground, steep slopes or sharp changes in gradient
- The lifting zone, including the swing or slew radius should be kept clear
 - Erect barriers and signage if required to exclude non-essential personnel
 - Keep the anticipated path of the load free from obstructions
- Assess the environmental conditions, particularly the weather, available light and visibility
 - Some loads may become unstable during windy conditions
 - The operator should have all round visibility if possible - a banksman may be required
- Assess the surrounding conditions or activities
 - Avoid lifting near work areas, particularly other lifting operations and excavations
 - Do not lift near overhead services and obstructions
 - **Lifting equipment should keep more than 10m away from any overhead power lines**

Performing a Routine Lift:

- Attach the load to the equipment, using any accessories if required and an appropriate method
- If required, attach any tag lines needed to stop the load from swinging when suspended
- Initially perform a trial lift if necessary, to confirm the stability and centre of gravity of the load
 - Lift the load just enough for it to be suspended in the air and monitor it for stability
 - Lower the load to rest on the surface prior to making any required adjustments
- Perform the lift as planned
 - Avoid moving the load above occupied areas
 - **Persons must not walk under a suspended or lifted load**



- Upon completion of the lift, the operator should allow the load to come to rest
 - Ensure any accessories are 'loose' (not tensioned) prior to detaching them
 - Retract the lifting equipment and clear the lifting zone of any barriers
- Accessories should be visually checked to ensure they are still free from defects
 - If they are still in good visual condition, they should be stored safely ready for next use
 - **If visible damage is found** (splits, breaks, deformities etc.) this should be reported immediately to the Site Manager and the damaged accessory removed from use. This should also be recorded as a **Near Miss** and the cause of damage investigated

5.9 Fall Prevention of Personnel - Delivery Vehicles

There are a number of possible methods for unloading or loading plant, equipment & materials.

In all cases, the fundamental principle to adopt is to AVOID personnel accessing the bed of transport wagons. If this is not possible, **MINIMISE** the time personnel spend on the wagon bed.

Listed in order of preference, the possible methods below should be considered with the same priority to prevent operatives falling from height, or reduce the risk of this as far as possible:

- Use a vehicle designed to transfer the item to ground level prior to offloading e.g. roll-on roll-off flatbed
- Ground level control of plant travelling down ramps of vehicle beds e.g. winch and steel rope, remote control operated plant
- Powered lift of items from vehicle bed using plant already at ground level e.g. forklift truck
- Powered lift of items from vehicle bed using lifting equipment e.g. vehicle mounted crane
- Operate plant to drive off the vehicle bed e.g. using ramps / beavertail or low-loader

In some instances, any of the above methods may require personnel to access the vehicle bed. If this occurs, fall prevention systems should in place where possible as follows:

- Use a vehicle with proprietary edge protection on the bed e.g. handrails
- If edge protection is not possible, use fall arrest systems such as a harness and lanyard attached to a fixing point. Do not attach the lanyard to a fixing point other than one designed for the purpose, nor wrap / loop it to anything else
- If neither edge protection nor a fixing point is available, personnel should use dedicated hand holds and footholds / steps to access the vehicle bed. They should also minimise as far as possible the frequency of required access.

Whether or not edge protection or lanyards are used, the following provides guidance of good practice for accessing transport vehicle beds safely:

- Assess the ascent / descent from start point to end point – are you physically able to do it and are there sufficient dedicated hand holds and footholds at suitable spacing? Consider also if the use of a secured ladder would be better
- Ensure handholds, footholds, boots and hands are free from dirt, grease, oils etc. so that your grip is not compromised



- Always maintain 3 points of contact - use legs to carry your weight and arms to steady yourself – avoid leaning out or backwards

5.10 Use of Power Tools

Electrical power tools will either be battery powered or 110v AC. Use of 240v AC is not permitted unless via a suitably rated, centre tapped 240-110v transformer. Only 110v extension leads are permitted.

Task usage of hand-held power tools will be rotated between operatives to minimise exposure to Hand Arm Vibration and not exceed the specified limits. A Hand Arm Vibration register will be used to record and control exposure times.

5.11 Working at Height

Any working at height will require safe access equipment to be used:

- Low level work will generally require mobile scaffold towers or podium steps. *Not anticipated*
- High level areas will generally require MEWPs or scaffolding. *Not anticipated*

If working at height is required, ensure the correct equipment is used according to the risk assessment.

- **Under no circumstances** shall operatives combine access equipment to gain greater height e.g. step ladders or podium steps must not be used on platforms of mobile towers or MEWPs.
- **Under no circumstances** shall operatives use any access equipment hired by another contractor.

5.12 Excavations, Surface Voids, Openings & Pits

Excavations should not be left open for longer than is necessary - open excavations present hazards and create restrictions to access. If excavations need to remain open, sides will be battered or supported and mounds built to act as stop blocks.

Surface voids or openings will be covered if possible, or edge protection installed using barriers or sturdy handrails with toe boards as appropriate. In the case of a deeper void with a clear leading edge and no opportunity to batter (e.g. a cellar), barrier fencing will be erected and set back from the leading edge to secure the area.

Excavation sides will be battered no steeper than the safe angle of repose for the material where possible. If slope batters are steeper, or excavation sides have to be supported, these will be classed as temporary works and further assessment is required. Classifying earthworks as temporary works will be based on the following guidelines:

- General cut and fill operations undertaken over wide areas with shallow slopes and batters at gradients no steeper than the natural angle of repose of the material (up to 1:2) are generally not classed as temporary works.
- Temporary slopes formed in cohesive soils at gradients up to 1:1, **for short periods only and monitored frequently**, may be considered as a standard solution for temporary works and included in the TW Register. Monitoring will include the slope itself and any conditions affecting its stability, such as weather, site activities, traffic routes and site drainage.



- Temporary slopes that are not considered standard practice (e.g. steeper than 1:1) will be included in the TW Register. Slope stability analysis by a competent and qualified geotechnical engineer will be required and any temporary earthworks support designed.

5.13 Hot Works

Hot works should be avoided and alternative methods used instead where possible. If hot works cannot be avoided, a Hot Works Permit will be required for any hot works carried out on site including, but not limited to:

- using power tools for cutting, grinding or drilling
- welding e.g. for essential plant maintenance
- burning procedures i.e. using oxygen / propane flame cutting equipment

Hot work permits will be valid for 'one day' only, expiring 1 hour before the end of a working shift, and will refer to a specific task undertaken in a clearly defined area.

Separate permits will be required for other hot works or in other defined areas. New permits must be issued to replace expired permits if work extends into the next day.

Checks prior to and upon completion of hot works will be required before the permit is issued and subsequently closed out.

Hot works must be planned properly and primary considerations will include, but are not limited to:

- Are combustible materials nearby, including fixed items that may be damaged by heat?
- Are there other works in the vicinity (including other hot works)?
- Are there adjacent processes or works which involve the use of flammable liquids or gases?
- Are there any existing services that will be affected?

If any of the above conditions apply, hot works should be carried out in other areas if possible. Alternatively, consider whether it is suitable to erect screens and / or use fire blankets to provide protection from heat or sparks.

5.14 Prevention of Fire

The site operates a '**No Smoking**' policy. Smoking will only be allowed in a designated area in the welfare compound away from fuel / gas / chemical storage areas and will not be allowed in buildings. Cigarettes etc. must be extinguished safely before being discarded.

FIRES are NOT ALLOWED on site. Burning of rubbish, debris, vegetation from site clearance etc. is prohibited. Open fires, garden incinerators, barbecues, fire pits etc. are not permitted.

Accumulated debris will be regularly cleared in order to reduce the potential fire risk presented by loose combustible material.



5.15 Working Faces

Working faces will be left in a safe condition (raked, stepped, battered or benched as appropriate) at the end of each shift with suitable fencing and signage provided if required.

5.16 Excavators & Mobile Plant: Bucket / Attachment Changeovers

Minimal bucket and attachment changeovers are anticipated; therefore, a separate changeover area will be provided local to the activity. Changeovers will be done to the LHS of the excavator so that the dipper arm does not obscure the view of the operator.

Note: Site operatives are reminded that **pedestrians are excluded from operational areas of mobile plant**, including areas where mobile plant are changing attachments (save for the operator ensuring secure connection of the attachment when plant is idle and immobilised).

5.17 Known Plant / Pedestrian Interfaces

There are situations whereby pedestrians cannot avoid being adjacent to mobile plant, such as plant fuelling and bucket changing areas, whereby the operator (or a designated operative) will be tending to the machine outside of the cab.

To safeguard the operative during these activities, the areas will have fencing or barriers erected so that only one item of plant can use the area at any one time. In addition, the plant **must be** shut down when an operative is present.

5.18 Outdoor Working

The majority of work will be outdoors and exposed to the weather. Welfare facilities will provide drinking water, suitable rest, shelter & drying areas, as well as protective barrier creams and skin care.

Operatives should also take precautions to protect themselves from the elements, in some cases even when inside mobile plant or vehicle cabs:

- Keep yourself hydrated by drinking water regularly, especially on warm or sunny days. Drinking water will be available in the site welfare facilities
- Avoid prolonged exposure to the sun (harmful UV rays) by keeping skin covered and taking regular breaks in the shade
- During wet weather, keep dry with suitable clothing and footwear - do not put on wet clothing – use the drying room and bring spare clothing if required
- Keep warm during cold weather by wearing suitable clothing & footwear



6 ECOLOGICAL PROCEDURES

6.1 Ecological Constraints

The location of any known ecological works or protected species, including retained trees, or notable invasive plant species, is to be assessed prior to set up and commencing works.

In the absence of an ecologist, the Site Manager will undertake a walkover visual check of areas prior to disturbance.

If, **at any time**, the presence of protected species (e.g. bats, nesting birds, badgers, newts etc.) is suspected or discovered, works will immediately cease in the area, the Client notified and further instruction to proceed awaited.

Ecologically sensitive areas are to be identified on site and safeguarded with signs prominently displayed. Fencing should also be erected if necessary to form an exclusion zone.

In addition, they should be identified on the **STMP** (Site Traffic Management Plan) to be displayed on site and updated by the Site Manager regularly when conditions change.

6.2 Protected Species – Mitigation Works

Trees / Hedges

Tree protection plans have been provided showing which trees / hedges are to be removed and those to be retained / protected. In addition, trees for removal need to be identified by the ecologist on site.

Bats

No issues advised

Nesting Birds

No issues advised. Works that could affect potential nesting grounds will be undertaken outside of the bird nesting season. Nesting bird season is generally accepted to be from March to August inclusive.

If any disturbance works to potential nesting grounds are required during the nesting season, a nesting bird check will be carried out prior to their disturbance. The check will be done by the Site Manager who will confirm when works can proceed.

Badgers

No issues advised.

Great Crested Newt & Amphibians

No issues advised.

Reptiles

No issues advised.

7 ENVIRONMENTAL PROCEDURES

The works will be approached in a manner to minimise environmental impact due to dust, noise or vibration emissions, as well as management of silt from surface water run-off.

7.1 Dust Control

In order to suppress any dust that may be generated, dust emissions will be controlled by water spray targeted at the source of the dust.

Mains water sourced on site will provide the water feed and the quantity of water emitted will be regulated and controlled to prevent any flooding at ground level (if mains water is unavailable a licensed standpipe will be used, provided accessible hydrants are available).



Dust Control during Earthworks

Depending on the level of dust generated, either or a combination of the following dust control methods will be utilised:

- Towed water bowser or tank (pictured) with spray / spreader plate
- Piped water feed to spray bars fitted to plant (e.g. excavators, crushers, screeners)
- Dust Fighter unit or water cannon creates a damp curtain to prevent dust migration
- Natural suppression (damp weather conditions)

Dust monitoring will be undertaken periodically to confirm the control measures in place are effective. If required, methods and control measures will be reviewed if dust levels become excessive or are elevated unacceptably during the course of the works. Consideration of current and forecast weather conditions will also be made e.g. wind speed, direction, rain.

7.2 Noise

To prevent nuisance from noise generated by the site works, best practice methods will be adopted to keep noise levels down.

A modern fleet of plant and equipment will be used from reputable manufacturers to comply with recommended noise levels for plant. Regular servicing and maintenance will be undertaken to keep plant & equipment in good working order and compliant.

Plant & vehicles on site will adhere to site speed limits, avoid excessive revving and switched off when not in use e.g. during break times. No activities will be carried out outside of the permitted site hours.

If there is any concern with noise levels, noise will be monitored near sensitive receptors and / or at the site boundary using a noise meter.



7.3 Vibration

Activities need to be approached in a manner to minimise vibration near sensitive areas and structures, in particular high intensity vibration activities, such as using impact breakers and compaction plant. If these are unavoidable, they should be carried out remote from sensitive areas.

Alternatively, low vibration frequency methods should be utilised, as below, especially when working within 20m of an existing structure, in particular occupied properties:

- Rippers, munchers & pulverisors may provide an alternative to impact hammers and breakers
- Vibrating rollers may be able to be used dead weight i.e. with the vibration function off
- Transfer of vibration emitted through the ground can reduce using break joints or slit trenches

There are clear limits mentioned in BS 5228-2 for vibration due to construction and demolition. Table B1 of BS 5228-2 below provides the guidance on effects of vibration levels. These levels set out the human response to vibration, as in nuisance:

BS 5228-2 Table B1: Guidance on effects of vibration levels (nuisance)

Vibration Level	Effect
0.14 mm/s	Vibration might be just perceptible in the most sensitive situation for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3 mm/s	Vibration might be just perceptible in residential environments.
1.0 mm/s	It is likely that vibration of this level in residential areas will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.
10 mm/s	Vibration is likely to be intolerable for any more than a brief exposure to this level.

The guidance states that in general, vibration levels (measured at the base of a building) will likely cause damage as follows – a vibration level of:

- 10mm/s will cause cosmetic damage to buildings
- 15mm/s will cause structural damage to buildings and affect underground services

Note that the levels provided above are for guidance, and there are other factors to consider when measuring vibration, such as frequency and exposure. Specific site conditions and the presence of particularly sensitive receptors nearby, such as older or historic buildings, hospitals etc. should also be considered, as the thresholds for these may be lower.

The level of vibration at the site boundary, particularly to sensitive existing structures and underground services, will be assessed by the Site Manager. This should be an initial qualitative assessment based on site activities and proximity of likely receptors using the guidance in Table B1 above.

If there is any concern with vibration levels, vibration will be monitored near sensitive receptors and / or at the site boundary using a vibration monitor.

7.4 Silt & Surface Water Management

The activities on site need to be approached in a manner to prevent pollution or cross contamination of watercourses, waterbodies or other sensitive receptors and the surrounding area.



Surface water should not be allowed to exit the confines of the site without first having passed through a filtration system, either by natural means or man-made, to allow dispersion of and reduce the silt content that is carried.

The following methods are effective in reducing surface water silt content and all, or a combination of them, will be used on site when required and according to prevailing site conditions:

- Avoid excessive soil stripping - retain vegetation & topsoil within a stand-off zone of receptors for as long as possible
- Form bunds to contain surface water, emptied regularly to prevent overflow
- Create drainage grips & channels or re-profile the ground to divert water to vegetated areas for natural dispersion
- Likewise divert surface water to a sump area, emptied regularly to prevent overflow
- Install silt curtains along the edges or top of the bank of waterbodies and watercourses where these are lower than the site levels - ponds, lakes, field drains, ditches, streams, rivers, canals
- Prevent surface run-off entering gullies & manholes, alternatively, use a silt blanket or filter system over the cover / grating
- Avoid tracking or washing out next to drainage ditches, ponds or gullies
- Reduce soils from being transferred to the roads by minimising the frequency of plant moving off & on roads
- Monitor the weather forecast and consider the potential for wet weather



8 EXISTING SERVICES – UTILITIES & SEWERS

Works are to conform to the requirements of the Health & Safety Executive Guidance Notes below:

- HSG47 - Avoiding Danger from Underground Services
- GS6 - Avoiding Danger from Overhead Power Lines

The potential for services will be checked in accordance with the information provided, supplemented with on-site investigation to site perimeters, boundaries, work areas and transit routes, including survey scans with CAT & Genny cable avoidance equipment where necessary.

The location and status of services is to be assessed prior to set up and commencing works. Consideration should be given so that activities are, where possible, located such that existing services are not affected by or do not affect the works.

Removal or disturbance of ANY redundant services MUST be supervised by the Site Manager

8.1 Procedures & Pre-start Checks

Prior to work commencing, the Site Manager must ensure relevant information relating to existing services (i.e. utilities & sewers) e.g. location plans, disconnections etc. is within the **Site IMS Folder**.

Records & plans of existing services covering the whole works area must be available on site:

- **As a minimum**, plans for **each of the main** statutory utility providers must be available on site – electric, gas, water, telecoms, sewers. **DO NOT PROCEED IF THESE ARE NOT ON SITE**
- **Also**, sub-scan surveys (to BSI PAS 128) are to be provided and available on site. **DO NOT PROCEED IF THESE ARE NOT ON SITE**
- Disconnection / isolation certificates **must** be on site for **any** services that are to be disturbed, unless there is visual evidence they are disconnected. Gas pipes must be confirmed as purged by 'purging' certificates prior to removal. **DO NOT DISTURB ANY SERVICES WITHOUT THESE**
- Records & plans for other services or constraints that may be on site or nearby, such as private owned services, pipelines, tunnels, transport links etc. should also be on site, if available

Records & plans of existing services must be up to date:

- Ideally they should be no more than 3 months old
- If they are more than 12 months old, ask for new plans
- Service plans & records more than 3 years old **ARE NOT** accepted (unless verified by the owner)

Assessment of existing services MUST BE CARRIED OUT prior to any works:

- Records & plans of existing services are to be reviewed
- On-site investigation of the works area is to be carried out to identify evidence of existing services, such as cabinets, meters, taps & valves, markers, surface scars, posts, conduits etc.
- Refer also to the '**Underground Services**' section for **ANY** works that involve breaking or disturbing ground



No works will be undertaken where services are identified until a disconnection / isolation certificate is provided. Any **LIVE** or retained services **MUST BE PROTECTED** by a safe stand-off or exclusion zone.

Any services thought to be '*redundant*' or '*out of commission*' **MUST BE CHECKED** by the Utility Provider, or a qualified service contractor, and confirmed in writing as disconnected or isolated prior to being disturbed or removed, unless there is visual or official evidence they are disconnected.

Removal or disturbance of ANY redundant services MUST be supervised by the Site Manager

If there is any doubt about the status of a service it will be treated as **LIVE** until such time it's status is verified by the Utility Provider or a qualified service contractor. For clarity, unless stated otherwise, any requirements for **LIVE** services will also apply to services whose status is uncertain.

ALL existing services (either LIVE or to be treated as LIVE) whether underground, above ground or overhead, are to be identified on site and safeguarded by a safe stand-off or exclusion zone as below:

Safe Stand-offs and Exclusion Zones:

Identify the safe stand-off or exclusion zone **prominently** using physical, robust and visible barriers with signage erected along the whole length:

- Barriers must be robust and not easily prone to damage or being moved due to wind or being climbed over
- Barriers should be continuous along the whole length, both sides if required, with gaps left only for designated crossing points
- Narrow gaps may be left for pedestrian access **only** but these should be at occasional, selected, strategic positions (crossing points for mobile plant & vehicles are covered below)
- Barriers must be clearly visible – red & white coloured is preferred, or highlight with bright coloured netlon (e.g. orange or yellow) or red & white bunting / hazard tape
- Signs are to be prominently displayed at frequent intervals clearly identifying the hazard, exclusion zone and any designated crossing points
- The exclusion zone should stand-off **minimum 3m** from the suspected or traced line of the service, or may reduce to 1m if the actual service is **positively identified** (i.e. actually seen)
 - **Note** that overhead power lines require a stand-off of **6m or more** – see also below and refer to HSE guidance: GS6 - Avoiding Danger from Overhead Power Lines
 - Other high-risk services, such as medium, intermediate or high-pressure gas mains, HV & EHV electric cables, oil pipelines etc. may also require a greater exclusion zone or specific safe system of work – **check with the utility owner**

Note also that safe stand-offs & exclusion zones for services located just outside the site boundary but in close proximity e.g. in highway footpaths, may extend into the site. This is particularly relevant to overhead power lines and high-risk services as mentioned above.

Safe stand-offs / exclusion zones and designated crossing points must also be identified on the **STMP** (Site Traffic Management Plan) to be displayed on site and updated by the Site Manager regularly.

NO WORKS ARE TO BE UNDERTAKEN OR PLANT/MATERIALS STORED WITHIN THE EXCLUSION ZONES
Any exceptions to this **MUST** be covered by a specific methodology for the work. *None anticipated*



A **PERMIT TO BREAK GROUND** will be required for any excavations or other activities carried out on site that will break or disturb ground. Such activities, although not exhaustive, include the following:

- Breaking out or puncturing hard surfaces
- Topsoil or surface layer strip
- Ground improvement works e.g. soil stabilisation
- Excavations of all types - from **trial pits** to **turnover** to bulk **cut & fill** earthworks
- Uprooting trees & shrubs, including stump grinding
- Uprooting fence posts and the like
- Drilling, Probing or Piling e.g. site investigations, vibro-columns, sheet piles
- Hand digging to be carried out in relation to investigation of services
- Any works or activities carried out within service stand-offs or exclusion zones

8.2 Underground Services

To reduce the risk of damage to underground services and the consequential incidents and personal injuries or fatalities that this may cause, the following procedures (in addition to those above) **MUST BE ADHERED TO** for all sites:

- Service plans & records are to be reviewed and on-site investigation carried out to identify existing services, including lifting covers, tap boxes etc.
- In conjunction with the review of plans and on-site investigation, the site must be scanned for services with a calibrated CAT & Genny
- The extent of the CAT & Genny scan should include the following areas **as a minimum**:
 - Any areas of the site where it is suspected that services are present e.g. following review of service plans or on-site investigation, **must** be scanned
 - Also, the whole site is to be scanned, sweeping all areas on a grid, even if there is no other indication of services. The dimensions (length or width) of the site will determine the spacings of the scan grid:
 - Sites with dimensions of 50m to 100m will require a 5m to 10m grid spacing
 - Grid spacings may increase on larger sites, ensuring that at least ten grid sections are scanned e.g. a site 250m x 250m will be scanned on a 25m grid

If **ANY ONE** of the following is true, then the presence of underground services is **SUSPECTED**:

- **Either** record plans or sub-scan plans show potential services
- **Or** there is visual evidence on site (surface scars, tap boxes, chambers etc.)
- **Or** signals indicating services below ground have been given by the CAT & Genny scan

If the presence of underground services is **SUSPECTED**, further actions will be required. All suspect services must be physically marked and identified on site and an exclusion zone implemented to remain in place until further action or information deems it unnecessary:

Marking & Identifying Services on Site:

- Mark services on site **prominently** and erect signs to identify:
 - Use waterproof crayon, or biodegradable spray paint where the surface allows



- Wooden pegs are useful in soft, unsurfaced areas, although preferably offset from the line of the service and labelled as such
- Avoid using steel pins, spikes or long pegs, as these could damage any services at shallow depth
- Free-standing markers such as cones or barriers are particularly useful to highlight markings on both hard and soft surfaces, but are more prone to being moved, so should not be used alone

Positive Identification and Verification of Suspect Services

- To **positively identify** underground services and **verify** their actual position, services will need to be uncovered and exposed by hand dug trial holes
 - Once exposed, more accurate tracing using the CAT & Genny may be possible to determine the route of the service through site – again, hand-dug trial holes will be required to **positively identify and verify actual position of services**
 - Hand-dug trial holes should extend at least 0.60m either side of the located service

Any services thought to be '**redundant**' or '**out of commission**' **MUST BE CHECKED** by the Utility Provider, or a qualified service contractor, and confirmed in writing as disconnected or isolated prior to being disturbed or removed, unless there is visual or official evidence they are disconnected.

Removal or disturbance of ANY redundant services MUST be supervised by the Site Manager

If there is any doubt about the status of a service it will be treated as **LIVE** until such time it's status is verified by the Utility Provider or a qualified service contractor. For clarity, unless stated otherwise, any requirements for **LIVE** services will also apply to services whose status is uncertain.

- Mobile plant & vehicles **MUST NOT** cross over or transit above existing underground services unless using approved crossing points or routes:
 - Existing crossing points and routes should be used if possible – tarmac roads, concrete slabs etc.
 - If none are available, or they are inadequate to protect the service from the proposed loads, crossing points and haul routes will need to be constructed as temporary works
 - Crossing points will generally be constructed using sleepers, steel plates, crushed hardcore or a combination of such
 - In some cases, a specially constructed reinforced concrete raft may be necessary
 - The type and construction of crossing point should be agreed with the service owner
 - Crossing points and transit routes over buried services should be kept to a minimum and clearly identified on site to guide plant & vehicles. Likewise, plant & vehicles should be prevented from crossing services in non-approved areas

Location of Safety Stand-offs and Service Crossing Points:

Note: No requirements for service crossing points currently known – awaiting service investigations and information by Client to be completed and issued

See below for safety stand-offs for overhead power lines

8.3 Advance Service Works and Investigations

Note: Not anticipated – the method below is to be adopted should any arise.

Advance service investigation works are to be carried out by a specialist sub-contractor – trial holes are to be excavated by hand to locate and identify services.

Following this, if required they will be assessed by a qualified service contractor to carry out any disconnections if possible or confirm status. Works will be carried out under separate RAMS provided by the sub-contractor. **Removal or disturbance of ANY redundant services MUST ONLY be carried out by a qualified service contractor, or be supervised by the Site Manager**

8.4 Service Crossing Points for Mobile Plant & Vehicles

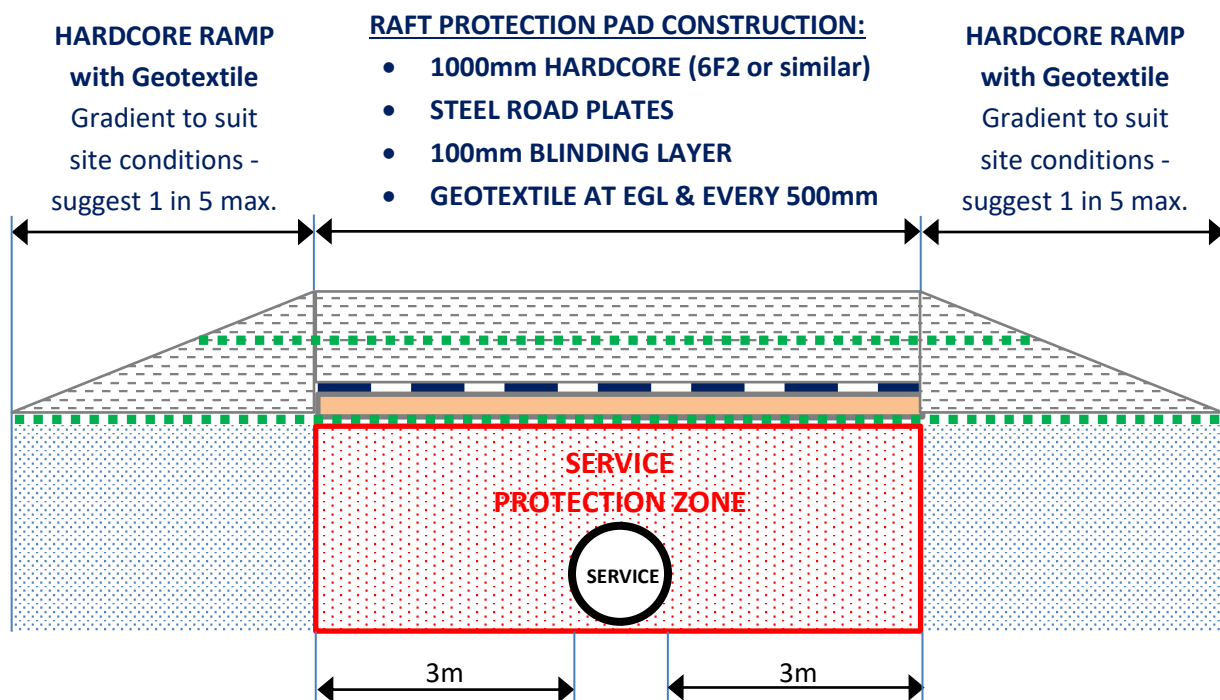
Note: Not anticipated – the method below is to be adopted should any arise.

A temporary raft protection pad will be constructed to serve as a crossing point on top of the existing ground over buried services.

During the activity, mobile plant & vehicles will remain outside of the safety stand-off and reach in to place materials. The exception to this is the roller which will be used dead weight (i.e. no-vibration)

- Initially a geotextile (Tensar Triax Tx or similar) will be laid down across the footprint of the raft
- Steel road plates will be placed on top of a 100mm blinding layer of sand or fines, extending a minimum 3m from the services
- Crushed hardcore (6F2 or similar) will be laid and dead rolled in layers, up to a total depth of 1m for the extent of the raft (i.e. 3m either side of the service)
- Geotextile as above will be placed at every 500mm depth to reinforce the raft
- Ramps at either end will be formed at approx. 1 in 5 gradient

RAFT PROTECTION PAD CONSTRUCTION:





Crossing points will be clearly marked on site with fencing and signage guiding traffic through the permitted route:

- Crossing points will only be used one at a time, in turn, thereby preventing multiple vehicles / mobile plant overloading the crossing point at any one time
- Mobile plant and vehicle operators must ensure that their exit is clear and safe before using the crossing to ensure they keep moving and not 'sit and wait' above **LIVE** services
- The site speed limit of 10 mph must not be exceeded
- The raft crossing will be monitored for integrity – when the top running surface becomes rutted by more than 150mm, it will be re-graded with hardcore and dead rolled

8.5 Overhead Electric Cables

Exclusion Zones will be set up to protect any overhead power lines that are present on or near to site. Works are to be carried out in accordance with **GS6 - Avoiding Danger from Overhead Power Lines**.

Exclusion Zones:

Identify the exclusion zone **prominently** using physical, robust and visible barriers with signage erected along the whole length.

- Barriers must be robust and not easily prone to damage or being moved due to wind or being climbed over
- Barriers should be continuous along the whole length, both sides if required, with gaps left only for designated crossing points
- Barriers must be clearly visible – red & white coloured is preferred, or highlight with bright coloured netlon (e.g. orange or yellow) or red & white bunting / hazard tape
- Signs are to be prominently displayed at frequent intervals clearly identifying the hazard and exclusion zone

Note also that exclusion zones for overhead power lines located just outside, but in close proximity to the site boundary, may extend into the site.

Exclusion zones and designated crossing points must also be identified on the **STMP** (Site Traffic Management Plan) to be displayed on site and updated by the Site Manager regularly.

The exclusion zone should extend **horizontally** at the distance provided from the nearest wire on either side of the overhead line. The exclusion zone may also need to be extended near to any pylons or poles carrying the wires:

- Keep away from the base of pylons
- Do not undermine or disturb cable stays or other anchor points of poles – as a guide, ensure the exclusion zone set up gives a minimum 3m stand-off from anchor points
- Be aware of overhead power lines transferring underground down the pole (possibly via a transformer) which then loop in the ground next to the pole. CAT scan any areas where underground cables are suspected and extend the exclusion zone if necessary - ensure the exclusion zone set up gives a minimum 3m stand-off from the suspected line of the service
- **NOTE:** Distances above may need to increase on the advice of the line owner.

PLANT, VEHICLES & EQUIPMENT MUST NOT REACH INTO OR BREACH THE EXCLUSION ZONE. NO WORKS ARE TO BE UNDERTAKEN OR PLANT / MATERIALS STORED WITHIN THE EXCLUSION ZONES

Adjacent Drakelow Power Station:	
National Grid: Simon Flavahan simon.flavahan@nationalgrid.com or Tom Heath Senior Project Manager – Central Asset Operations 07785 725 984 thomas.heath@nationalgrid.com	• Pylon / gantry in adjacent power station carrying 400kV overhead wires – see Google Earth picture below ○ 15m safety stand-off unless confirmed otherwise • Faulty porcelain current transformers in power station could explode causing projectile fragments: Hazard zone = 80m radius from equipment • Electrified fence along boundary is low voltage and switched off during power station daytime shifts, approx. 7am – 7pm ○ 3m safety stand-off unless confirmed otherwise • Main gate on Walton Road should remain open (McA need to use this) • National Grid have a second security-controlled gate into the power station (no access allowed for McA)



Safe Working Heights (SWH's) for overhead power lines **have not** been provided.

NO WORKS TO BE CARRIED OUT NEAR OR UNDER OVERHEAD POWER LINES:

- Exclusion zones to be set up **6m from overhead LV** power lines
- Exclusion zones to be increased to **15m for overhead HV 400kV** power lines



9 ASBESTOS

9.1 Introduction

The site investigation report provided included screening soils for asbestos contamination.

- Asbestos in soils has been identified
- Asbestos fragments or debris on the ground have not been identified

9.2 Removal of Asbestos

Licensed Asbestos

Any licensed asbestos subsequently discovered will be removed by a Licensed Contractor under a separate plan of works and risk assessment with a two-week notification to the HSE (ASB5).

Operatives working with licensed asbestos must be trained to the minimum standard required by the **Control of Asbestos Regulations (CAR) 2012** for working with licensed asbestos.

The methods stated in this document HAVE NOT BEEN compiled for any LICENSED asbestos works.

Non-Licensed Asbestos

Any non-licensed asbestos (including>NNLW) will be removed by operatives trained to the minimum standard required by **CAR 2012** for working with non-licensed asbestos.

Methods for typical non-licensed asbestos works are outlined in this document.

9.3 Non-Licensed Asbestos Work - General Procedures

*This section applies to **any non-licensed asbestos tasks** and should be read in conjunction with the specific task methodology outlined elsewhere in this document.*

Assessment of Resources

The Site Manager will make assessment of resources and equipment that are required for the task (e.g. DCU, PPE / RPE, asbestos skip) and arrange for such to be brought to site if not already available.

All operatives involved with ACM removal (including plant operators) will receive a toolbox talk relating to the works required. This will include a check (and issue if required) of appropriate PPE (including face fitted RPE) and prompts for correct fitting, usage and disposal using asbestos removal bags for disposal with the asbestos. PPE requirements apply to all persons entering the asbestos area.

The following PPE is additional to the site minimum requirement:

- Disposable Overalls (Type 5) to BS EN ISO 13982-1+A1:
 - Wear one size too big to help prevent ripping at the seams
 - Seal loose cuffs with tape
 - Avoid wearing long sleeve shirts beneath – these are difficult to cover properly
 - Do not tuck overall legs inside footwear – this lets dust into footwear
 - Wear the hood over the top of RPE straps



- Respiratory Protective Equipment (RPE) – use RPE with a UK-assigned protection factor (APF) of 20 or more. The following RPE is suitable for most short duration non-licensed work. RPE is not suitable for people with beards or stubble and should be face fitted:
 - Disposable Respirator to BS EN 149 (Type FFP3) or EN 1827 (type FMP3)
 - Half Mask respirator to BS EN 140 with P3 filter
 - Semi disposable respirator to BS EN 405 with P3 filter
- Gloves - if you wear protective gloves, use single-use protective gloves:
 - If you need to wear latex gloves, use only 'low-protein powder-free' gloves
 - Dispose of used gloves as asbestos waste
- Footwear:
 - Wipe clean footwear (e.g. wellingtons) if possible
 - Disposable overshoes are not preferred as they can cause a slipping risk
 - Avoid laced footwear if possible, if not, cover the laces with tape

Safe Working Practices

Strict hygiene procedures must be maintained - no smoking, drinking or eating whilst working. Remove PPE and wash hands, arms and face thoroughly before meal breaks.

The area will be deemed a 'Hazardous Work Area' and is to be identified and protected with signs prominently displayed. Fencing should be erected to form an exclusion zone with controlled access for designated operatives wearing the appropriate PPE only.

Mobile plant and equipment should be restricted from travelling onto the affected area unless necessary - transit routes should avoid the known or suspected areas. If possible utilise plant and equipment by reaching in from a position outside or adjacent to the affected area e.g. using a power wash with long hose and lance to reach and fine water spray the area.

The affected area should be dampened with a fine spray of clean water or PVA spray prior to and during removal to suppress dust and prevent release of airborne fibres. Damping down should be done in moderation to prevent flooding and surface run-off.

Monitoring will be undertaken by an external 3rd Party company where required and practices altered in accordance with results.

Decontamination Procedures

A decontamination area will be set up and cordoned off on the edge of the affected area, split into 'dirty' and 'clean' zones. This will serve as the gateway for designated operatives to access the asbestos affected area (dirty zone) wearing the required PPE for asbestos works. Prior to leaving the dirty zone, decontamination procedures must be adhered to. The following provides guidance of best practice.

A specialist, fully serviced decontamination unit should be provided in the decontamination area for asbestos related works where possible however, in certain situations, such as discovering unknown asbestos, or hand-picking ACM debris, and where works are low risk, a bucket & rags should be placed in the decontamination area to allow operatives to decontaminate themselves. If there is more than one person carrying out works, operatives should use the 'buddy system' and help clean each other.



Rags must **only** be dampened / wetted in the bucket **before** use (do not re-wet or put rags back in the bucket after using them to wipe). Used, soiled rags must be placed in asbestos waste bags. If additional wiping is required, operatives will need to dampen a fresh rag. This method keeps the bucket and water free from contamination, so that the water can simply be poured to ground once finished with.

Any equipment used in direct contact with ACM impacted materials or soils should be cleaned or wiped down with damp rags. Soiled rags are to be placed in asbestos waste bags. Operatives boots should be washed in a boot wash prior to entering the DCU if available.

Operatives should remove PPE in sequence using the following principles to minimise the risk of exposure to asbestos fibres:

- Face masks should be removed last (see below).
- If gloves are worn then these should be removed (including tape for sealing cuffs) to enable easy removal of other PPE. Tape and all types of gloves to be placed in the asbestos waste bag.
- PPE which can be wiped clean, such as hard hats, can be removed as required to enable removing other PPE in the sequence.
- Overalls should be removed from the body next, working from the top down, carefully rolling the overall inside out progressively as it is removed.
- Keep boots on at this stage if possible, although not if the overall needs to be ripped off over the boot. Dispose of used overalls as asbestos waste.
- Boots with laces should have the covering tape removed. All types of boots should then be wiped down with damp rags, even if they have been through a boot wash. Covering tape and soiled rags to be placed in asbestos waste bags.
- Finally, face masks should be wiped as much as possible and then removed. Re-usable face masks with removable filters should be wiped down thoroughly with a damp rag. Spent filters / disposable masks / soiled rags are to be placed in asbestos waste bags.

Upon removal of PPE, operatives should immediately and thoroughly wash hands, arms and face.

Disposal of ACM Waste

Asbestos waste, fragments and debris should be kept as intact as it is found and double bagged at source, labelled '**Asbestos Waste**' and placed into the asbestos skip. Larger pieces will be wrapped in polythene and placed whole in the asbestos skip.

Where practical the skip will be a closed skip and taken to a licensed facility for disposal. The skip will be removed once full, otherwise it will remain on site should any further unknown asbestos be discovered and removed upon completion.

If the ACM waste is too large or bulky to place into an enclosed asbestos skip, it may be stored short-term temporarily on a sealed surface or geotextile for loading into a larger skip (geotextile needs to be 1000 gauge non-woven – 'Multitrack 1000' or similar).

Stored ACM debris should be kept damp and / or covered until it can be removed so that fibre release is controlled and suppressed. Excessive periods of storage are to be avoided - this can be managed by co-ordinating progress of works with the removal process.



The Site Manager will forward plan the works and arrange for collections to be made in a timely manner. This will include liaising with the removal haulier to know what size of vehicle is due to arrive for collection on a day by day basis so that production on site is controlled to prevent temporary storage of ACM debris accumulating excessively.

9.4 Hand Pick of Loose Asbestos Fragments or Debris

Note: Not anticipated – the method below is to be adopted should any arise.

Refer also to the 'Non-Licensed Asbestos Work - General Procedures' section of this document.

Localised and small quantities of loose asbestos fragments / debris on the ground will be removed by hand picking prior to other works continuing in the area.

The area will be cordoned off and warning signs erected. A decontamination area will be set up on the edge of the affected area, also cordoned off. These areas will be restricted to designated operatives wearing the required PPE for asbestos works.

If a decontamination unit is not already available on site, a bucket & rags may be used for **low-risk** hand pick works to allow operatives to wipe themselves. Rags must **only** be wetted in the bucket **before** use (do not re-wet or put rags back in the bucket after using them to wipe). Used, soiled rags must be placed in the asbestos waste bag.

If additional wiping is required, operatives will need to get a fresh rag. This method keeps the bucket and water clean and free from contamination, so that the water can simply be poured to ground once finished with.

Once the initial area has been dampened, operatives will conduct a walkover inspection, picking out ACM fragments and debris as it is found. ACM fragments and debris picked will be double bagged and placed into the lockable asbestos skip

If required an excavator will carefully clear the ground but keeping a safe distance from ACM's all the time to prevent damage. Once the ground is cleared the excavator will stand down or retreat whilst operatives inspect the soils for ACM fragments and hand pick out debris.

Dampening of soils will progress as the extent of the affected area becomes known and continue throughout the process until all debris is removed.

As works progress and sections are completed the surrounding soils will be inspected for any residual ACM fragments or debris, again to be picked out. A final walkover inspection will be conducted to confirm all fragments have been removed.

9.5 ACM Impacted Soils

The earthworks area consists of made ground with trace levels of asbestos fibres identified within the soils. The remediation strategy consists of removing targeted hotspots and ensuring impacted soils are below suitable clean cover materials.



With this in mind, the earthworks operations will require additional controls to address the issue of working with ACM impacted soils:

- Keeping material damp to prevent dust
- Minimising plant travelling over impacted soils
- Cleaning plant (tracks, buckets, blades etc.) prior to moving into clean areas
- Cleaning haulage vehicles and loading areas

9.6 Air Monitoring for Asbestos Works

Air monitoring carried out to demonstrate the effectiveness of the controls in relation to asbestos works will comprise the following:

- Background air monitoring prior to start of works
- Boundary air monitoring prior to start and intermittently during works
- Personal air monitoring during the works



10 SITE CLEARANCE

10.1 Debris Clearance

Initially the site will be cleared of rubbish and debris to separate it from the vegetation as much as possible. The majority of this will be carried out by an excavator with grab attachment, selecting and picking up debris and placing directly into skips, with materials being segregated progressively into separate waste streams.

Smaller items will be hand-picked out by operatives and placed in stockpiles close to the clearance activity, ready for the 360° excavator with either a bucket or grab attachment to pick up and place in a skip for disposal off-site.

10.2 Discarded Needles

Note: Not anticipated – the method below is to be adopted should any arise.

Any sharps are to be collected using an extended grabber and placed in a concealed sharps container. Operatives should rest the container on a level and stable surface prior to placing items in with the grabber so that hands are kept away from the sharp item. Once complete the container is to be sealed and the grabber placed in a heavy-duty polythene bag. All are to be removed off-site and incinerated by an appropriately licensed contractor.

10.3 Invasive Plants / Japanese Knotweed Removal

Invasive plants have been identified on site, namely Japanese Knotweed and Himalayan Balsam. These are currently outside the works area, under treatment by the Client's contractor and to be fenced off.

10.4 Site Clearance – Vegetation, Scrub & Trees

Note: refers to small tree / scrub clearance works carried out by McAuliffe.

Tree removal works carried out by specialist tree removal contractor under separate RAMS.

Bushes and low-lying vegetation will be stripped across the surface using the excavator with a bucket. Trees & shrubs will be uprooted using a 360° excavator with grab attachment. Once lifted, the excavator will lightly shake to remove surplus soil from the root ball and allow it to drop on the ground.

Uprooted trees & vegetation will be placed in temporary stockpiles or loaded directly into green waste skips for removal off site to a licensed recycling facility. Stockpiles will not necessarily be in one area but will be situated locally through the works in manageable sizes to minimise the amount of travelling. The excavator will periodically tend to stockpiles as required to keep them contained and safe.

Stockpiles should be placed in a suitable location within the site, away from boundaries, existing features, overhead cables and pylons / poles.

10.5 Site Clearance – Organic Surface Strip

The organic surface layer will be stripped ~100mm depth using an excavator and / or dozer and loaded into dump trucks to be hauled and tipped in the designated stockpile area.



11 SLABS & HARDSTANDINGS

11.1 Slabs & Hardstandings – Constraints

During works to slabs & hardstandings, excavators are not to sit on voided ground (service ducts, basements, cellars etc.) or above sensitive underground services.

The presence of any voids below a slab will influence the sequence and will be assessed by the Site Manager for consideration in the on-site programme.

To safeguard against flying fragments and debris the site will be contained as far as is practicable. Personnel will be kept away from plant operation by use of a banksman or exclusion fencing.

Additional screens, such as Heras fencing with debris netting are to be erected close to the activity when the risk of flying fragments increases e.g. when using hydraulic breakers.

11.2 Removing Slabs, Hardstandings & Subsurface Obstructions

Existing slabs, hardstandings and foundations are to be broken out and removed. Prior to removal, slabs butting up to adjoining structures will be assessed to ensure a clean, natural separation will occur, generally on a nearby joint however, if required a saw cut will be made.

To lift the slab the excavator will puncture holes at approx. 2m centres. Using a bucket or ripper tooth the slab will be lifted - this allows the slab to break up along the puncture lines under the mechanical strength of the excavator and avoid excessive vibration.

Deeper foundations present within the footprint of the building will be removed whole where possible. If required the foundation will be hammered in situ and broken up to be dug out.

The hydraulic breaker will be used to initially break up ground bearing slabs, column bases, foundations (up to 2m below ground) and any basement walls. Following this, the ripper tooth and bucket will be used to complete break up and removal to avoid excessive vibration.

The resultant voids will be backfilled and compacted with selected crushed demolition arisings or suitable site won material.

As slabs and foundations are removed they may be further processed in preparation for crushing on site. Tarmac roads and car parks will be lifted in a similar manner to slabs, although the use of a breaker is likely to be less frequent.

All hardcore, brick and tarmac will be separately processed where possible. Any other waste will be taken off site and a copy of the Duty of Care - Waste Transfer Note, detailing description, producer and carrier of waste, will be kept on site and available for inspection.



12 REMEDIATION

12.1 Contaminated Ground

Contaminated soils have been identified in made ground and localised hotspots on site (see also 'Hotspot Removal' section).

Remediation works for contaminated soils to be carried out in accordance with the Remediation Strategy produced by the appointed consultants Travis Baker.

The remediation strategy consists of removing targeted hotspots and ensuring impacted soils are below suitable clean cover materials.

12.2 Tank Removal

Note: Not anticipated – the method below is to be adopted should any arise.

Prior to removal of tanks, contents will need to be identified to determine an appropriate method to clean, de-gas and remove. Removal of contents will be carried out under a separate method statement, specific to the work and the identification of tank contents.

Following removal of tanks, a visual and olfactory inspection will be carried out to the underlying soils and side walls for any evidence of contamination leakage. Suspect contaminated soils will be removed and placed in a bunded quarantine area on site for on-site treatment or disposal as appropriate.

If on-site treatment is required this will be subject to a separate remediation method statement carried out under an Environmental Permit held by McAuliffe.

12.3 Hotspot Removal

Known Hotspots

Known localised areas of contamination (hotspots) will be marked on site and targeted for removal and segregation ahead of other works to prevent cross contamination with other areas. Refer to the approved remediation strategy for locations.

Contaminated soils in these hotspots are assessed as suitable for re-use on site below a minimum depth of clean cover.

- Asbestos in soils – Area M, S, P enhanced Clean capping thickness to 1000mm. (To be reduced to 600mm with Terram layer, this is not confirmed yet).
- All other areas to have 600mm apart from area D, no capping required

Suitable fill areas will be prepared ahead of hotspot excavation where possible so that material can be placed directly to fill, negating the need for separate quarantine. If this is not possible, materials will be segregated and quarantined as the procedure below.

Removal of the hotspot will be validated – the base & sides of the hotspot excavation will be sampled and tested for contaminants of concern.



If validation is not achieved, further excavation will be carried out to remove contamination and the testing process repeated until the base & sides are validated.

Other Hotspots

In the case of previously unknown hotspots being discovered, for example, following the removal of any UST's, or for other visual / olfactory identified hotspots, these should be marked on site and the following procedure adopted:

- A bunded quarantine area for each type of contamination will be constructed on an impermeable surface
- The hotspot material will be excavated down to known depth of contamination, or as directed by the site consultant or a geo-environmental engineer, and placed in the quarantine area
- Typically, the hotspot should be excavated to form a square approx. 2m x 2m min. to enable the base and sides to be inspected and tested for validation
- Inspection & testing for validation will be by the consultant or a geo-environmental engineer
- The excavation is to be surveyed, left open and fenced off until such time as laboratory results are received to validate the base and sides
- If validation is not achieved, further excavation will be carried out to remove contamination and the testing process repeated until the base & sides are validated
- Analysis of the quarantined materials will be carried out to determine a further course of action (i.e. treatment, re-use on site or disposal)



13 EARTHWORKS

13.1 Earthworks Cut & Fill with Turnover

Following any required site clearance, site strip, removal of slabs etc. along with any activities associated with the RMS that can be done, earthworks will commence.

The earthworks process will involve the following main aspects:

- Turnover of made ground – depths vary according to location of site
- Excavation to formation levels
 - *During the excavation process, assessments of the material will be made to determine suitability for re-use in accordance with the RMS*
- Separation, stockpiling and processing materials for re-use
- Filling to formation levels using suitable excavated material
- Disposal of surplus or unsuitable excavated material (if required / instructed)
- Place imported / site won 6F2 pile mat

Initially the earthworks will involve a turnover exercise to proof dig the made ground down to natural or maximum varying depths according to location on site. Redundant underground obstructions (foundations, manholes etc.) discovered during the turnover process will be removed whole if possible, or hammered in situ and broken up with a hydraulic breaker to be dug out.

Oversized material will be separated and stockpiled for further processing through the crusher / screener. The formation will be trimmed and rolled ready to receive suitable site won fill materials.

Earthworks cut areas will be excavated to the required formation level. As cut operations progress any made ground left below formation will be turned over as a proof dig exercise down to natural or maximum varying depths according to location on site. Again, any oversized material will be stockpiled for further processing.

If significant oversized material is removed during the turnover exercise, any suitable material from the nearby cut operation can be placed directly into the area to infill the voids to minimise plant movements around site. The remaining material will be moved on site according to its assessed condition in accordance with the requirements of the RMS:

- Suitable materials will be transported directly to the fill area for placing and compacting in accordance with the specification to the required formation levels
- Oversized material will be separated and processed by crushing to a suitable size for use as fill
- Unsuitable material will be separated and stockpiled for further processing or disposal off site as appropriate (**Note:** no off-site disposal of earthworks materials anticipated for this project)

Processed materials will be returned to the fill area for re-use as earthworks fill according to suitability.

Fill areas will be constructed to required levels using one of the following methods:



- End product compaction – fill material placed and compacted to achieve a minimum specified geotechnical standard, and tested in-situ to demonstrate this has been met e.g. CBR's, plate bearing tests, sand replacement, NDG's
- Method compaction – fill material placed and compacted in layers according to its classification. The method will identify depth of layers, type & size of roller & minimum number of roller passes per layer

The specific method to be used will be identified in the earthworks specification produced by the appointed consultants, Travis Baker.

Unless specified otherwise, fill areas will be constructed to required levels as follows:

- Fill material will be placed in 300mm layers, tracked in and rolled once to seal the layer
- The final surface should be well compacted to protect the underlying fill material

All earthworks fill materials will be placed and compacted in accordance with the earthworks specification provided.

Earthworks areas (cut and fill) will be subject to geotechnical testing as required by and to demonstrate compliance with the specification. ***Progress of the works must be managed to allow testing to be carried out in a timely manner and compliance with the specification achieved.***

Earthworks operations to be carried out progressively to minimise excessive batters and gradients. Working faces will be left at a safe angle of repose, no steeper than 1 in 3 at the end of each shift.

Once the earthworks operation is complete the final surface will be trimmed and rolled to seal the formation prior to any follow-on works or handover.

Surplus or unsuitable materials will be stockpiled on site for disposal off site if required / instructed.

13.2 Loading Materials for Removal Off-Site

Note: Not anticipated – the method below is to be adopted should instruction be given.

Materials stockpiled that are surplus / unsuitable for the site will be loaded by an excavator into road going tipper wagons for removal off-site.

The works will be forward planned and co-ordinated for haulage vehicles to attend in a timely manner. This will include liaising with the haulier if required to determine the size and quantity of vehicle(s) on a day-by-day basis so that progress on site is controlled accordingly.

The current site has existing roads & hardstanding covering most of its area. Generally existing hardstandings will be utilised for as long as possible to minimise dust and mud on site. Alternatively, haul roads using site won hardcore arisings will be constructed up to the area where materials will be loaded. Where possible a circular haul route will be used to minimise reversing, although this will be dependent on available space and proximity of other activities on site.



Wagon drivers will be briefed upon arrival and directed accordingly. If a circular haul route is not available they will be directed to turn around in an area nearest to the loading area (e.g. bell mouth). They will then reverse along the road to the loading area under guidance from a banksman.

If the loading area is occupied or unavailable at the time, vehicles will be directed to a nearby waiting area on site ready to take their place in turn. This should be minimised as far as possible by the co-ordination and forward planning mentioned above for timely attendance. Haulage vehicles should avoid queueing on the public roads outside the site.

During loading, the wagon driver will remain in the cab. If they need to leave the cab, they must ensure the excavator is not placing a load into the body at the time. Wagon drivers must wear the specified PPE when leaving the cab.

Once loaded, the wagon driver will need to check the load to ensure it is safe. If fitted, the wagon will be sheeted using its own automatic sheeting system. Prior to moving from the loading area, the vehicle will be checked and cleaned if necessary. Following this the loading area will be checked by operatives and any debris cleaned.

13.3 Topsoil Placement

Note: Not anticipated – the method below is to be adopted should instruction be given.

Topsoil will be placed using an excavator and / or dozer to the required depth - refer to drawings / specification for each area as the depth may differ between areas.

The choice to use either an excavator or a dozer, or both, will be subject to the area where topsoil is placed and will be assessed by the Site Manager so that the most appropriate item of plant is used.

Topsoil will be tipped directly onto the required areas and received by the excavator or dozer. Subject to suitable access routes, nearby features or prevailing site conditions, topsoil will be tipped directly in the location to be spread, as much as possible, to minimise plant movements over completed areas.

Topsoil will be spread and levelled over the whole area to the required depth with the final surface trimmed with the excavator or dozer.

13.4 Pile Mats, Working Platforms & Road Capping

Pile mats will be formed using 6F2 crushed demolition arisings or imported material, according to site requirements:

- The formation will be trimmed and compacted ready to receive materials
- Pile mats will generally be placed in max. 300mm layers and tracked in with the machine to enable piling works to be carried out

14 MATERIAL PROCESSING

14.1 Crushing & Screening Plant – Safety Procedures (LOCK OUT)

Introduction

A **LOCK OUT** procedure is designed to prevent injury caused by the unexpected start up or movement of a crusher or screener. The person working on the equipment **MUST HAVE** control of the **LOCK OUT**

LOCK OUT procedures are to be followed EVERY TIME the equipment is to be cleared, cleaned, adjusted, maintained or repaired.

When used as intended, lock out also protects personnel from energy stored in devices such as springs, accumulators, batteries, hydraulic systems etc.

Procedure

1. **TURN OFF** THE ENGINE AT THE STARTER PANEL AND **REMOVE THE KEY**
2. LOCK THE PANEL AND PUT THE KEY IN A SAFE PLACE
3. AFTER 20 SECONDS ROTATE THE ISOLATOR SWITCH FROM THE **ON** POSITION TO **OFF**
4. FIT THE LOCK OUT HASP AND YOUR UNIQUE PADLOCK ON THE MAIN POWER ISOLATOR
5. KEEP THE KEY TO ENSURE NO ONE CAN REMOVE YOUR LOCK AND TURN THE POWER BACK ON
6. NEVER GIVE **YOUR** KEY TO ANYONE ELSE
7. WHERE MORE THAN ONE PERSON IS WORKING ON THE EQUIPMENT THEY **MUST** FIT THEIR LOCK ALSO
8. PLACE A TAG ON THE LOCK THAT IDENTIFIES YOU
9. RELEASE STORED ENERGY FROM THE SYSTEM IF REQUIRED SO THAT THE MACHINE IS IN ZERO ENERGY
10. TRY TO START THE MACHINE TO MAKE SURE IT IS ISOLATED AND **OFF**



AFTER CARRYING OUT THE WORK

11. REPLACE ANY GUARDS ETC. AND REMOVE ALL TOOLS
12. TAKE YOUR LOCK AND TAG OFF THE MAIN POWER ISOLATOR
13. TURN ON POWER
14. UNLOCK OPERATORS CONTROL PANEL AND **WARN OTHERS** BEFORE STARTING THE MACHINE



14.2 Crushing Operations

Crushing of suitable hard arisings will produce graded aggregates on site.

Procedure

In advance of the works, the Environmental Health Officer of the Local Authority for the site will be notified of the activity, in accordance with the conditions of the crushing licence held.

Prior to and during the crushing process the material stockpile will be sorted to remove any waste and other materials that are not to be crushed. Waste materials including pallets, timber, shrubs, plastic etc. will be picked out and set aside.

The concrete crushing plant will be positioned on firm, level ground in agreed locations away from the site boundary and sensitive receptors to noise. A clear access to and from the crushing plant will be maintained at all times.

A suitable water supply will be provided to connect to the dust suppression system. The crusher operator is to ensure the water supply is connected and working prior to commencing crushing.

Concrete and brick demolition arisings will be stockpiled adjacent to the crusher. Steel reinforcement / members will be separated from the concrete using a 360° excavator fitted with a hydraulic concrete cruncher – this will pulverise concrete slabs, columns and beams, using powerful crushing jaws. The concrete lumps will be reduced to a maximum 600mm x 300mm x 150mm in size.

The pulverised hard material is fed into the hopper of the crushing plant using a 360° excavator. Where practical the crusher will be fed from behind (not the side) of the hopper, facing the crusher and in an anti-clockwise manner (due to the maintenance platform location).

The hopper has a feeder control to regulate the quantity of material that is fed directly into the crusher. It is important that the conveyors are not overloaded. The crusher has a throttle to control the speed at which the material is being crushed.

A dedicated access platform with double handrail is provided next to the loading hopper. From here the crusher operator can periodically check production and safe operation of the machine. Operatives must not stand on the platform full time during operation, and should minimise time spent on board when the plant is running. Blockages and maintenance issues can also be assessed from the platform.

The operator will initially monitor the loading of material and assess the non-concrete materials, which are within safe reaching distance while the crusher is running.

Crushers generally have an automatic dumping operation to release blockages without operative involvement - when overload occurs the feeder will stop the crusher and the product conveyor will continue to operate.

If the blockage does not clear automatically, the operator will stop the crusher and follow **LOCK OUT** procedures if material requires removing from the hopper.

Crushed material falls onto the screen feed conveyor, any reinforcement is removed with a magnet. If required, materials are graded / separated into respective sizes and fall on to the discharge conveyors for temporary stockpile adjacent to the crusher.

A front-loading shovel or excavator will be in attendance to manage the temporary stockpiles and move them away from the crusher to the site stockpile.

A labourer may need to be in attendance to pick out any deleterious material (wood, plastic etc.) from the temporary stockpiles. The labourer and attending machine operator must liaise with each other throughout to co-ordinate their activities safely.

Stockpile locations will be agreed with the Client. Material will be stockpiled at agreed heights with a safe angle of repose no steeper than 1 in 3.

PPE - additional to the site minimum requirement (Crusher Operator & Labourer):

- Gloves (BS EN 388:2003)
- Eye Protection (BS EN 166:2002)
- Ear Protection (BS EN 352:2002)
- Dust Mask / Respiratory Protection (BS EN 149)

Environmental Considerations

The noise generated by the crushing process is comparable to road noise at the site boundary. Noise assessments will be carried out as required to determine ear protection zones.

The picture below shows individual water feeds for suppression to the crusher and separate Dust Fighter unit on a site with residential gardens adjacent.





14.3 Screening Material

Note: Not anticipated – the method below is to be adopted should instruction be given.

Screening of soils or made ground will remove any rubbish encountered to generate material suitable for reuse. Screening of made ground will also produce the following approx. sized material and separate into stockpiles (screen sizes can be altered if required to suit Client specification):

Type 1 size material:

- Less than 50mm

Mid-size:

- 50mm to 90mm

Oversize:

- Larger than 90mm

Procedure

A safe location for the screen will be identified on firm and level ground and all conveyors checked to ensure they are visible and free from obstructions. The material stockpile will be made safe & stable with a ramp for plant access, and managed as such during the operation.

The 360° excavator will load the screen from an elevated position on top of the stockpile to ensure the operator has good visibility of the screen hopper and process area. As each material is produced the belt stockpiles will be emptied periodically using a loading shovel (or excavator) and stored in designated areas away from the operation. A dump truck may be positioned under the highest producing belt to assist the operation. As the works progress the screen will be re-positioned if necessary to ensure the operation remains safe.

The operation involves as-dug material generally in a damp condition with negligible dust release expected, although this will be monitored and dust suppression used as required.

Operatives on foot will not be allowed in the screening area, except for designated operatives required for the process, such as operation of the screener, adjustment of belts and picking from stockpiles.

Plant movements should stop during switch on / off and adjustment tasks of the screener. When picking from stockpiles, the picking area will be guarded with visible barriers / signage to safeguard operatives from plant movements.

In all cases, good visual contact and communication between plant operators and operatives on foot will be maintained. Plant operatives must stop work when signalled to do so. Operatives on foot must ensure that plant operators have acknowledged their signals (e.g. 'thumbs up') and plant movements have stopped prior to entering an area.

PPE - additional to the site minimum requirement (Screener Operator & Labourer):

- Gloves (BS EN 388:2003)
- Eye Protection (BS EN 166:2002)
- Ear Protection (BS EN 352:2002)
- Dust Mask / Respiratory Protection (BS EN 149)



15 METHOD STATEMENT BRIEFING CONFIRMATION

To be read by all personnel receiving instruction and briefing

In signing below, I acknowledge that I have received instruction in respect of the works to be carried out on this site and the hazards and risks associated with this work activity and described above.

I understand the hazards and the control measures to be applied and I have had the opportunity to have any questions answered on any related matters in respect of this element of work.

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