PILING & GROUND ENGINEERING

RISK ASSESSMENTS & METHOD STATEMENTS

Contract Reference No. C00366

Brunswick Mill
Bradford Road
Manchester
M40 7EZ

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RISK ASSESSMENTS & METHOD STATEMENTS

NERO
PILING & GROUND ENGINEERING

The nature of the work undertaken by the company is repetative in all disciplines, as such general risk assessments have been completed that cover more than one nature of works. Where necessary more specific risk assessments are available

Before the start of the contract a site visit is to be conducted during which an inspection must be made and a prestart completed to detect any site specific hazards

On receipt of the site risk assessments all operatives shall read and acknowledge as understanding the hazards, controls and methods to carry out the task safely by completing the signature block. Queries shall be directed to the preparer of the documents.

Contract Name	Brunswick Mill, Manchester
Contract No.	C00366

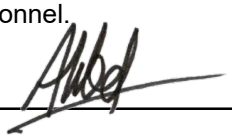
Site Method Statements

Reference	Title	✓
GEN-MS 01	Unloading Piling Materials	✓
GEN-MS 02	Safe Operation of Auger Rigs	✓
GEN-MS 03	General Excavations	✓
GEN-MS 04	Loading & Unloading Piling Rigs	✓
GEN-MS 05	Clearing of Concrete & Grout Pipes & Clearing Blockages	✓
GEN-MS 06	Vibration Monitoring	
CFA-MS 01	Continuous Flight Augered Piling	✓
CFA-MS 02	Lifting & Installation of Steel Casings by Crane	
CFA-MS 03	Use of CFA Piling Rig for Pre-Augering	
MP-MS 01	Setup & Driving of Pneumatic Grundomat	
MP-MS 02	Installation of 150/220mm Diameter Bottom Driven Mini Piles	
MP-MS 03	Safe Operation of Drop Hammer Rigs	
MP-MS 04	Sectional Flight Augered Piling	
MP-MS 05	Welding of Steel Cased Pile Sections	
TD-MS 01	Driven Precast Concrete Piling - Collet & Centrum Joints	
TD-MS 02	Driven Tubular Steel Piling	
RC-MS 01	Using a Cement Mixer	
RC-MS 02	Use of Excavator - Excavating & Lifting Operations	
RC-MS 03	Installing Insitu Concrete Slabs	
RC-MS 04	Installing Insitu Concrete Ground Beam	
RC-MS 05	Installing Heave Protection	
RC-MS 06	Local Excavation Around Piles to Cut-Off	
RC-MS 07	Cutting/Cropping of Steel Piles	
RC-MS 08	Control Measures in the Operation of Quick Hitch Attachments	

Site Risk Assessments

Reference	Title	✓
GEN-RA 01	General	✓
GEN-RA 02	Coronavirus	✓
GEN-RA 03	Bored Piling	✓
GEN-RA 04	Manual Handling	✓
GEN-RA 05	Concrete Pouring & Placement	✓
GEN-RA 06	Piling Adjacent to Railway Line	
CFA-RA 01	CFA Pile Installation	✓
MP-RA 01	Mini Piling	
MP-RA 02	Welding	
TD-RA 01	Top Driven Piling	
RC-RA 01	RC Works	
RC-RA 02	RBL HF Precast beam System	

I have prepared, briefed and issued the Risk Assessments, Method Statements & COSHH Assessments to NERO site personnel.

Signed:  Print: Alex Bird Date: 25.07.2023

I have been briefed, read and understand the hazards that are applicable to this project and confirm that I have been issued all the Safety Documentation associated to this project.

Signed: _____ Print: _____ Date: _____
Site Foreman

Signed: _____ Print: _____ Date: _____
Operative

Signed: _____ Print: _____ Date: _____
Operative

Signed: _____ Print: _____ Date: _____
Operative

SITE SPECIFIC METHOD STATEMENT	NERO PILING & GROUND ENGINEERING

Revision:	-	Date:	25/07/2023
Contract Name:	Brunswick Mill, Manchester	Contract No.	C00366

1. Scope of Works

1.1. Nero Piling are to carry out the installation of Continuous Flight Auger piles at Brunswick Mill, Manchester. CFA piling is fast, quiet, and virtually vibration free, the method is ideal when working next to buildings and in environmentally sensitive areas.



2. Access & Method

2.1. Nero Pilings prestart site inspection document is to be completed along with the FPS working platform certificate before Piling Rig mobilises to site.

2.2. Prior to any works commencing the MAIN CONTRACTOR must complete Nero Pilings permit to Dig form and have a competent person cat scan the piling area.

Service drawings should be made available and must be viewed before commencement of contract.

2.3. Nero Piling have made no allowance for any vibration monitoring associated with the piling element of works. This can be provided is requested.

2.4. All operatives **MUST** fully understand risk assessments and method statements and sign onto them prior to any works. (This will always be available on site within the job pack) The site manager will ensure that any additional precautionary measures are adhered to.

2.5. Nero Piling will enforce a strict exclusion zone for the safety of others - this must be always adhered to.

2.6. The Piling Rig will be delivered on a low loader with drop down ramps at the back.

2.7. The agitator and pump are to be delivered on a HIAB. The HIAB will need access directly beside the planned permanent locations for these to site.

2.8. The Piling Rig augers will be delivered on a flat bed lorry. We will require a 360 excavator to assist with unloading these items.

2.9. An excavator will be required for the duration of Nero Pilings works to assist with the mobilisation, set up and general piling operations.

2.10. Once all plant and equipment has been offloaded and site inductions have been completed the piling operation will commence.

3. Welfare Facilities Requirements – Client/PC

3.1. Welfare facilities to comply with CDM Regulations, 2007 shall be provided by the main contractor and be within a reasonable distance of the piling area. At minimum, these should include toilet and washing facilities with hot water along with suitable rest and drying rooms.

3.2. Hand cleaning facilities provided in welfare toilets/facilities.

4. Protection

4.1. All operatives will be inducted by the Main contractor (outside where possible) and advised of any site-specific risks relating to the area of the proposed works.

4.2. All protection of footpaths & haul roads is the responsibility of the main contractor. A pedestrian route should be constructed to minimise crossing paths of individuals.

4.3. PPE Requirements:

- Safety Glasses to EN 166
- Gloves
- Safety Helmets to BS EN 397
- Ear Defenders to BS EN 352
- Safety Footwear to BS EN 345
- Hi Viz clothing

4.4. A First Aid Kit, eye wash and spill kit will be available and kept in the supervisor's van, parked on site.

4.5. Protection of adjacent property including vegetation, footpaths, roads, buildings etc. is the responsibility of the main contractor. Nero Piling will ensure measures are taken to prevent damage or interference; however, this cannot be guaranteed.

5. Environmental

5.1. Refuelling of the rig will take place on the piling platform with fuel being transferred directly from the bunded bowser to the rig via the rig's filler hose and pump. Before the operation commences the crew must ensure that a fire extinguisher is to hand. A spill kit is to be available if drops of surplus fuel leak from the hose.

6. Working Platform

6.1. Working Platform design must be undertaken based on the maximum UDL bearing pressure for the piling rig being utilised.

6.2. Plate Testing must be carried out to ensure the working platform has been installed to a satisfactory standard for the above piling rig.

6.3. A minimum of 2.0m must be installed past the pile positions. Where the working platform has been built up substantially from the original ground level plate testing must be completed to ensure the stability.

6.4. Edge protection must be in place at the edge of the working platform where necessary.

METHOD STATEMENT	PILING & GROUND ENGINEERING

Activity/Process:	Continuous Flight Augered Piling		
Method Statement Ref:	CFA-MS 01		
Revision:	-	**Date:**	25/07/2023
Brun	Brunswick Mill, Manchester	**Contract No.**	C00366

1.0 Purpose and Scope

1.1 This Method Statement describes the process for the installation of Hollow Stem CFA Piles.

2.0 Health and Safety Controls

2.1 See all relevant Risk Assessments

2.2 Steel armed concrete boom pumps only to be used

2.3 The need for slow movements when slewing around whilst concrete pump is attached is to be clearly briefed prior to commencement of operations.

2.4 In liaison with the CPO and site management team must agree the position of the concrete pump and any necessary preparation of the site for its positioning. This will be communicated to the CPO (Concrete Pump Operator).

2.5 Ensure all personnel can communicate clearly and understand what is required by all parties.

2.6 The working area and radius of operation must be assessed by consulting any reach charts available with the pump and agreed by the CPO prior to operation and reassessed for each phase (if required) and communicated to all personnel involved in the operation.

2.7 The safety method statement for operation of auger rigs must be on site and have been read and understood by all Operatives before any works commence.

2.8 Before any piling can commence an Underground Services Permit to Dig / Avoidance of Overhead Services Permit to Work must be completed by the Client / Main Contractor.

2.9 The piling foreman will be responsible to ensure that no unauthorised personnel are within the piling exclusion zone.

2.10 The piling foreman is to ensure that personnel are using the required PPE.

3.0 Environmental Controls

3.1 Operation must only be carried out in the site operational working hours.

3.2 COSHH Assessments must be available for all hazardous items used.

3.3 Fuel/ oil spills should be prevented. Drip trays and emergency oil spill kits should be used to catch and clean the spills/ leaks.

3.4 All waste must be disposed of via the correct means.

3.5 Vehicle engines must be turned off when not in use.

4.0 Equipment

4.1 List of equipment to be used on site for the piling operations:

- Comacchio CHF500
- 350mm, 450mm & 600mm Augers
- Putzmeister Concrete Pump
- Concrete Agitator
- Two Tool Compressor
- Double Bunded Fuel Bowser
- Jet Wash
- MEWP

5.0 Method and/or Process

5.1 Prior to starting work

5.1.1 The Site Foreman shall ensure that all the safety requirements for the piling operations are in place. This includes all relevant Method statements/Risk assessments have been read and understood and signed on to, that all permits and prestart forms are correct and in place and that all operators are using the correct/required PPE

5.1.2 The preparation for piling operations shall be in accordance with the site specific method statement.

5.2 Prior to Commencing Formation

5.2.1 The Piling Rig shall be unloaded and converted to its operational condition.

5.2.2 The auger strings are to be hoisted into position and locating pins inserted where the strings are joined. Do not hold pins which need driving with a hammer; use the tongs or special tool and wear eye protection.

5.2.3 If the Operative is required to work at any height where there is a risk of fall liable to cause injury when working on the locating pins the following safety precautions are to be followed:

5.2.4 A Safety Harness complete with 2 fall arresters or work restraint lanyards and a hard hat complete with chin strap must be worn.

5.2.5 All personnel without a task to perform should stand well clear of the operation.

5.2.6 Check that all warning devices are functioning before operation commences.

5.2.7 If climbing an insitu ladder on the mast remove all dirt, grease, and oil residue before climbing the rig. Ascend the ladder and securely attach the safety harness before inserting the locating pins ensuring 1 x lanyard is secured to the ladder always during the ascent and descent.

5.2.8 If the rig does not have an insitu ladder, then the operative is to use a Mobile Elevated Working Platform (MEWP). Only in cases of an emergency or a non-planned operation should a man basket attached to a forklift be used.

5.3 The Pile Formation Procedure

5.3.1 The Piling Rig shall be precisely located at the pile position where the piles to be formed, normally set out by others. The rig shall be set to within 25mm of the theoretical pile position to ensure that piles are constructed within the specified plan tolerance of 75mm, or project requirements.

5.3.2 The concrete pump will be set up in a predetermined spot as agreed with the client and for ease of access for the concrete delivery trucks. Where possible a line of sight needs to be maintained between the concrete pump operator and the rig operator/banksman if this is not possible 2 way radios need to be used. If a holding drum/agitator is to be used in conjunction with the concrete pump then a lay down area needs to be carefully considered due to the size of the area required. The concrete pump/agitator is to be manned by a trained/competent operator at all times.

5.3.3 The pile string shall be adjusted for verticality in 2 places and 90^0 to each other, to ensure that the piles are constructed within the specified verticality tolerance of 1 in 75.

5.3.4 The pump, line and auger stem shall be primed using the specified cement and the auger stem securely bunged.

5.4 Formation of Piles End Bearing on Rock

5.4.1 Bore to practical rig refusal into rock.

5.4.2 Commence pumping concrete.

5.4.3 Allow concrete pressure to build up to 1 –2 bar.

5.4.4 On build-up of pressure lift auger 100 to 150mm to blow bung.

5.4.5 Re-drill back down onto rock whilst continuing to pump concrete.

5.4.6 Allow concrete pressure to build up to 1 –2 bar.

5.4.7 Commence forming pile, rotating auger for first 0.5m of pile then straight pull thereafter.

5.4.8 Should instrumentation be available the pile shall be formed by volume ensuring that the volume supplied is greater than the minimum specified by the Engineer. Should the actual volume fall below the theoretical volume over any section of the pile then the pile shall be redrilled to below the effected section and reformed.

5.4.9 Should the instrumentation fail or not be available then the pile is to be formed by maintaining a positive concrete supply pressure.

5.5 Piles End Bearing in Granular Soil

5.5.1 Bore to specified depth / penetration into founding material.

5.5.2 Commence to pumping concrete.

5.5.3 Allow concrete pressure to build up to 1 –2 bar.

5.5.4 On build-up of pressure lift auger 100 to 150mm to blow bung.

5.5.5 Continue to pump concrete allowing concrete pressure to build up to 1 –2 bar.

5.5.6 Commence forming pile by straight pulling.

5.5.7 Should instrumentation be available the pile is to be formed by volume ensuring that the volume supplied is greater than the minimum specified by the Engineer. Should the actual volume fall below the theoretical volume over any section of the pile then the pile shall be redrilled to below the effected section and reformed.

5.5.8 Should the instrumentation fail or not be available then the pile is to be formed by maintaining a positive concrete supply pressure.

5.6 Piles End Bearing in Cohesive Soils

5.6.1 Piles End Bearing in Cohesive Soils.

5.6.2 Bore to specified depth / penetration into founding material.

5.6.3 Commence pumping concrete.

5.6.4 Allow concrete pressure to build up to 1 –2 bar.

5.6.5 On build-up of pressure lift auger 100 – 150mm to blow bung.

5.6.6 Continue to pump concrete allowing concrete pressure to build up to 1 – 2 bar.

5.6.7 Commence forming pile, rotating auger for first 0.5m of pile then straight pull thereafter.

5.6.8 Should instrumentation be available the pile is to be formed by volume ensuring that the volume supplied is greater than the theoretical volume over any section of the pile then the pile shall be redrilled to below the effected section and reformed.

5.6.9 Should the instrumentation fail or not be available then the pile is to be formed by maintaining a positive concrete supply pressure.

5.6.10 Where the formation process is complete the total cycle shall recommence at a new location.

5.6.11 An attendant back-actor shall be used to remove spoil from the top of the pile and the banksman shall locate and clean the spoil from the top of the pile until clean concrete is achieved for the whole cross-sectional area of the pile.

5.7 Installed Pile Depth

5.7.1 In the event that the design depth is not reached due to practical rig refusal, the piling foreman will notify the office who will treat the event as a Site Design Change.

5.8 Introduction of Steel Reinforcement

5.8.1 When concreting is completed; back the rig off and allow access for the attendant excavator to clear off the head of the pile removing any excess concrete/spoil arisings. Ensure the pile head is clear and insert the required steel reinforcement/cage, dependant on reinforcement/cage the attendant excavator or rig service winch can be utilised to lift and place the steel.

5.8.2 The specified reinforcing cage shall be placed centrally onto the fresh concrete either manually or mechanically to finish either: - above the level of the concrete to a specified height; or flush with the top of the concrete; or down to the toe of the concrete whichever is specified. The cage should always be visible at the head of the pile.

5.8.3 All protruding rebar to have end caps fitted until such times as piles are to be incorporated into the pile cap/slab.

5.9 Extraction of Steel Reinforcement

5.9.1 When there is a requirement to extract a cage or any rebar from the formed pile position the following process must be adhered to:

5.9.2 Extraction may only be carried out within **15 minutes** of the reinforcement being inserted into the formed pile position.

5.9.3 A lifting sling should be attached to rebar length and not the rings. The reinforcement is then extracted in a controlled manner and maintaining a perpendicular upward force. This method is repeated with the sling reattached every metre until the extraction has exposed the lifting ring. At this point the sling is then reattached to a rebar length and extracted fully from the position.

5.9.4 Once the reinforcement is completely extracted it is laid down and inspected for signs of damage, paying particular attention to the lifting rings, an assessment is then made as to its suitability to reuse. Should the product be deemed to be damaged then it is to be clearly segregated from the works and new product used.

5.9.5 In the event of the reinforcement not being able to be extracted or reinserted then the project manager must be informed without delay.

5.10 Pile Integrity Testing

5.10.1 Where piles are to be cropped by others, integrity testing is to be carried out before commencement of the cropping operations, or any other works within the locality of the piles.

5.10.2 Where the debonding method has been used, 1/3 of the piles should be tested at cast level. Once all the piles have been cropped to cut off level, 100% of piles should be tested again.

5.10.3 No pile integrity testing shall take place under 5 days from the time of cast and may only be performed after the pile has been satisfactorily trimmed

for testing purposes. The trimming is required to remove surface latency from the pile is to involve minimal disturbance, preferably to be conducted using a hand breaker.

5.10.4 All piles shall be free of standing water, spoil, exposed and with safe man access

5.11 Pile Cropping

5.11.1 The pile and its environment for 2.5m in all directions shall remain undisturbed after the start of hydration for 5 days apart from the trimming. After such time the pile is available to be cropped to the designed cut off level.

5.12 Pile Load Testing

5.12.1 Where pile static load testing is required it shall not take place less than 14 days from the time of the concrete being cast, unless cubes have been taken and tested from concrete used to form the test pile and which demonstrate the concrete has sufficient strength to be able to resist the maximum test load. Pile test may only be performed after the pile has been successfully trimmed.

5.13 Visual Inspection

5.13.1 Where the rig is to leave site without an as built survey of the pile positions, the Rig Operator must conduct a visual check along the line of piles and call the Area Office if it appears that a pile may require checking.

5.14 Records

5.14.1 Copies of all piling records shall be retained by the Company.

5.14.2 Where possible the Site Foreman shall obtain signature from the Client or his representative on the record sheets as an agreement to the accuracy of the recorded data.

5.15 Aborted pile position and exposed pile excavations

5.15.1 If a pile position is aborted, the piling rig will be backed away from the pile position and the open bore protected with a pile cover.

5.15.2 The client and/or groundworker is to be immediately notified that the pile position requires suitably backfilling to meet the requirements of the working platform design.

5.15.3 Under no circumstances are operatives to leave site with open or exposed piles excavations.

5.15.4 The Foreman is to ensure that these are backfilled before workers leave.

METHOD STATEMENT	PILING & GROUND ENGINEERING

Activity/Process:	Unloading Piling Materials		
Method Statement Ref:	GEN-MS 01		
Revision:	-	**Date:**	25/07/2023
Contract Name:	Brunswick Mill, Manchester	**Contract No.**	C00366

1.0 Purpose and Scope

1.1 The purpose of the Method Statement is to describe the procedure to be used when unloading piling materials.

2.0 Health and Safety Controls

2.1 See all relevant Risk Assessments

3.0 Environmental Controls

3.1 Operation must only be carried out in the site operational working hours.

3.2 COSHH Assessments must be available for all hazardous items used.

3.3 Fuel/ oil spills should be prevented. Drip trays and emergency oil spill kits should be used to catch and clean the spills/ leaks.

3.1 All waste must be disposed of via the correct means.

3.2 Vehicle engines must be turned off when not in use.

4.0 Process

4.1 **Unloading Pre-Cast Piles**

4.1.1 Establish an exclusion zone and ensure that the risk assessment reflects the conditions relevant to the site

4.1.2 Agree area with the Site Agent for the unloading and stacking of piles which should be adjacent to the area of piling operations. Area should have suitable access from the highway for 40’ articulated Lorries and be of sufficient size and bearing to allow for the unloading from both sides and storage of piles.

4.1.3 Position vehicle to be unloaded on firm level ground.

4.1.4 Decide on format that piles are to be stacked, where possible access should be made available to both sides of stacked piles.

4.1.5 Check weights of load to be lifted and lift one layer of piles at a time off the lorry depending on weight, size and make of forklift truck.

Note: Only personnel carrying a CPCS card that is valid to drive a Forklift is able to do so

4.1.6 Drive towards trailer, positioned central of stack of piles to be unloaded, raise forks into position, as to enter space between pile layers. Proceed forward until fork ends are beyond furthest pile in layer, then lift the sections using vertical lever until clear of remaining stack, then use tilt lever to tilt layer slightly backwards.

4.1.7 After checking for pedestrians and vehicles, if neither are obstructing route away from vehicle. Proceed backward until clear of vehicle then lower layer of piles to suitable travel height.

4.1.8 Proceed to stacking area, keeping to site speed limit. Using timber chocks provided with the load, lay timber chocks between pile layers and stack to a safe height, depending on ground conditions and surrounding area and size of pile to be stacked, but stacks are not to exceed 6 piles high in any conditions.

4.1.9 Repeat this operation until vehicle is totally unloaded.

4.1.10 Sign relevant paperwork.

4.2 **Unloading Steel Cages**

4.2.1 Establish an exclusion zone and ensure that the risk assessment reflects the conditions relevant to the site

4.2.2 Agree area with the Site Agent for the unloading and stacking of cages which should be adjacent to the area for Piling Operations. Area should have suitable access from the highway for 40’ articulated Lorries and be of sufficient size and bearing to allow for the unloading from both sides and storage of piles.

4.2.3 Position vehicle to be unloaded on firm level ground.

4.2.4 Decide on format where cages are to be stacked, where possible access should be made available to both sides of unloaded cages.

4.2.5 Excavators used as lifting appliances are fitted with anti-drop valves (if lifting loads greater than 1 tonne) and will be used and inspected in accordance with the Lifting Operations and Lifting Equipment Regulations (LOLER) and shall have purpose made and tested lifting eyes attached. All lifting appliances will have a certificate of thorough examination and will be fitted with an audible safe working load indicator and have a lifting chart displayed in the cab.

4.2.6 Ensure the excavator and lifting equipment (chains, slings etc.) have satisfactory and current certification. Only lifting gear of the correct rating is to be used and is to be attached to the excavator lifting eye. Lifting accessories are to be regularly inspected by those using them, and any damaged or suspect items are to be removed from site and replaced accordingly.

4.2.7 Full 360° vision is to be provided by the use of mirrors or assistance cameras as appropriate, and all cab shutters will be removed during operation of the machine. Operators are to be guided by a banksman using recognised hand signals. The working areas is to be segregated from other works and personnel.

4.2.8 Track towards trailer positioned central to cages. Raise arm and position chains above cages ready for straps to be attached. Wait for operative attaching straps to move well clear of the lifting operation and then slowly raise the arm lifting the cages.

4.2.9 After checking for pedestrians and vehicles if neither is obstructing the route away from the vehicle proceed backward until clear of vehicle then lower cages to suitable travel height and proceed to storage area.

4.2.10 Repeat this operation until vehicle is totally unloaded.

4.2.11 Sign relevant paperwork.

4.3 **Unloading Steel Pile Sections**

4.3.1 Establish an exclusion zone and ensure that the risk assessment reflects the conditions relevant to the site

4.3.2 Agree area with the Site Agent for the unloading and stacking of piles which should be adjacent to the area of piling operations. Area should have suitable access from the highway for 40' articulated Lorries and be of sufficient size and bearing to allow for the unloading from both sides and storage of piles.

4.3.3 Position vehicle to be unloaded on firm level ground.

4.3.4 Decide on format that piles are to be stacked, where possible access should be made available to both sides of stacked piles.

4.3.5 Check weight of load to be lifted and assess state of load to be unloaded i.e. is tube loosely stacked or banded tube.

4.3.6 If tube is loosely stacked greater care should be taken to unload as the risk of individual tube sliding off forks is greater and if possible tube grabs should be used.

4.3.7 If tubes are greater in length than 8 metres then a mechanical aid should be used to unload these singularly.

Note: Only personnel carrying a CPCS card that is valid to drive a Forklift is able to do so.

4.3.8 Drive towards trailer positioned central of tack of piles to be unloaded, raise forks into position, as to enter space between pile layers. Proceed forward until fork ends are beyond furthest pile layer, then lift the sections using vertical lever until clear of remaining stack, then use tilt lever to tilt layer slightly backwards.

4.3.9 After checking for pedestrians and vehicles, if neither are obstructing route away from vehicle proceed backward until clear of vehicle then lower layer of piles to a suitable travel height.

4.3.10 Proceed to stacking or laying down area keeping to the site speed limit. Using timber chocks if available stack steel to safe height and secure to avoid stack collapsing.

4.3.11 Repeat until the vehicle is totally unloaded, sign relevant paperwork.

METHOD STATEMENT	PILING & GROUND ENGINEERING

Activity/Process:	Safe Operation of Auger Rigs		
Method Statement Ref:	GEN-MS 02		
Revision:	-	**Date:**	25/07/2023
Contract Name:	Brunswick Mill, Manchester	**Contract No.**	C00366

Contents

1. General Safety Rules and Responsibilities
2. General Safety
3. Rig Starting, Running and Stopping
4. Emergency Stop Procedure
5. Auger Operation

1.0 General Safety Rules and Responsibilities

1.1 Only properly trained and certified personnel must be used to operate company equipment or sling loads (including transport drivers).

1.2 No lifting appliance or item of lifting gear must be used to lift a load in excess of its tested S.W.L.

1.3 Never use a winch rope to lower augers into a borehole or to extract augers from a borehole. Only use the winch to hoist augers for positioning ready for connection to the drill head. Always use the drill head for lowering into any borehole and for extracting augers from any borehole.

1.4 No equipment must be manually handled in such a way as to place any employee at risk of injury. If this cannot be avoided, additional labour MUST be requested, it is always preferable to use mechanical assistance to handle heavy components.

1.5 . It is the responsibility of the site supervisors/foremen to ensure that the procedures in this document are followed, and that all operatives are fully conversant with the procedures contained in it.

1.6 The contents of this document apply to all NERO controlled sites, in respect of direct labour, self-employed and sub-contract companies engaged to perform the functions detailed (This includes transport drivers).

1.7 Specific selection of the equipment to be used and other detailed Health and Safety Site Specific issues must be identified at the planning stage of the contract

and agreed with the site foreman/supervisor and principal contractor prior to the commencement of works.

1.8 All Auger & Drill rigs are fitted with interlocked mesh guards preventing entanglement during operation of Augers & Drill rods (see associated Risk Assessment(s)).

1.9 The working platform should comply with the working platform design.

1.10 All services must be clearly defined and a signed Permit to Dig and Overhead Avoidance Services Permit must be available on site.

2.0 General Safety

2.1 Wire Ropes

2.1.1 Personnel should be kept at a safe distance from wire ropes which are being used for hoisting and lowering; operatives must never straddle the ropes or reach across them as serious injury can result from a whipping wire rope or from a breakage. The rig operator must be alert at all times when hoisting, lowering or pulling.

2.2 Stability

2.2.1 Extra care should be taken when operating the smaller rigs to ensure that the rig remains stable when operating in rotational mode

2.2.2 When using Post Drill Rigs mounted on a base plate, the operator must ensure that the base plate is secured in position by way of driving securing pins around its perimeter to minimise movement.

2.3 Operator Co-ordination

2.3.1 It is imperative that all members of the operating crew appreciate that when changing Augers, one operator will be in close proximity to the auger flights, whilst the other will be operating the controls. The Rig Operator must have a clear line of sight during any lifting operations. It is therefore vital that each crew member is absolutely clear of the others intentions and actions. Failure to communicate correctly may result in serious personal injury. The Rig Operator must not activate rotation or other controls when it is possible that projected spanners/components could strike anyone or when persons could be entangled by the auger or trapped/struck by ascending/descending augers or any movement of the catch plate. The rotational speed is limited to 15rpm when the guards are open to facilitate Auger replacement.

3.0 Rig Starting, Running and Stopping

3.1 Observation of the following will assist with the safe operation of the auger rig and should be taken into consideration before starting the operation.

3.1.1 The operator must hold a valid certificate and be competent in the use of all equipment to be used.

3.1.2 Always wear personal protective equipment supplied by the company, as laid down in the company induction programme and site rules – no loose/flapping clothing.

3.1.3 Avoid spilling flammable fuels and oils, always use funnels when topping up engines with fuels.

3.1.4 Report any faults to the rig or equipment without delay and if necessary, for reasons of safety, isolate the rig from use.

3.1.5 Ensure that daily maintenance schedules are carried out and recorded according to company practice.

3.1.6 Carry out the correct Start-up, run and shutdown procedures

DO NOT IN ANY CIRCUMSTANCES: -

3.1.7 Carry out any maintenance when the drill rig or equipment is operating.

3.1.8 Operate the rig or equipment outside the scope of its designed intended use.

3.1.9 Tamper with or adjust hydraulic or compressed air safety or relief valves.

3.1.10 Open any flushing medium valves until hoses are securely attached and correctly restrained.

3.1.11 Allow any unauthorised person to operate the rig or equipment.

3.1.12 Tamper with or isolate interlock guards, cut-offs, emergency stops or other safety equipment.

3.1.13 Carry out any unauthorised repairs.

IF IN DOUBT ABOUT ANY MATTER: ASK YOUR SUPERVISOR OR MANAGER FOR HELP BEFORE RISKING POSSIBLE ACCIDENTS TO YOURSELF AND/OR OTHER MEMBERS OF THE CREW

4.0 Emergency Stop Procedures

4.1 Emergency Stop Devices

4.1.1 These protective devices are mandatory and are fitted in order that actual or impending dangerous situation is averted quickly without creating any additional hazard.

4.1.2 They are situated in the danger zone and will stop all rotation, feed and hoisting movements as quickly as possible in order to prevent the dangerous situation developing further. The danger zone is the zone within and around the drill rig in which a person is exposed to risk of injury. For an auger rig it is the area in which a person can be reached by operational movement of the drill rig, its working devices, its auxiliary equipment or swinging or falling equipment.

4.2 Emergency Stop Activation

4.2.1 If a hazardous situation occurs, an emergency stop button must be activated by the nearest person and the drill rig functions stopped.

4.2.2 Assess whether injury to a person has been caused.

4.2.3 If this is the case summon immediate medical assistance in accordance with company procedures.

4.2.4 Report incident to the company so that the necessary safety investigation can take place.

4.2.5 Do not re-start the drilling operation until authorised by your supervisor.

4.2.6 If an injury to a person has taken place, ensure that it is correctly recorded and reported

4.2.7 If objects become wrapped around augers great care must be exercised in cutting or removing the material wrapped round the auger

4.2.8 If bolt cutters, hacksaws or burning torches have to be used to cut out entrapped objects into short sections, the lead driller must ensure that the second man and any tools are well clear before engaging rotation. Rotation of the auger must be slow and controlled to prevent loosened pieces flying off. Burning torches should only be used by trained and competent personnel.

4.2.9 Ensure that any loose sections of the entrapped material are cleared well away before commencing any other work. Safe and secure footing is essential at all times.

4.3 Manual Handling

4.3.1 As augers are heavy they should be supplied for use in the minimum practical length for handling safely. Manual handling regulations must be observed at all times. Mechanical handling aids should be used whenever practicable to reduce manual handling to a minimum.

4.3.2 Because of the bulk and weight of augers great care must be taken to ensure that they are safely secured when being transported to and from site and that they are safely stored or racked when in use on site.

4.4 Sampling & Spoil Removal

4.4.1 If hand samples are required to be taken from the auger flights, they must be taken with the auger stationery.

4.4.2 If it becomes necessary to remove spoil/arisings from the area around the borehole then rotation of the auger string must be stopped whilst this operation is being carried out. The working area should be kept clean and tidy underfoot so as not to create a slip/trip hazard or to allow obstacles to be hidden by mud.

5.0 Auger Operation

5.1 Equipment Required

5.1.1 Rig and catch plate/fork tool
5.1.2 Drive adaptor
5.1.3 Power pack and hydraulic hoses
5.1.4 Hand hammer and suitable punch
5.1.5 Fork-spanner
5.1.6 Spring clips (Auger Pins)
5.1.7 Guide bush
5.1.8 Cutter heads (as required)

5.2 General

5.2.1 Select the correct drive adaptor and secure.

5.2.2 Select the correct size guide bush.

5.2.3 Before the cutter head and first metre of auger are attached, it is vital to establish that the cutter head is in good condition and the correct size (i.e.

at least ½ inch larger in diameter than the auger flight). This is to ensure that it is the cutter head that cuts the hole and not the auger flight

5.3 Operation

5.3.1 Having attached the cutter head and the auger flight section; close and secure the guards, introduce the auger gently by way of operating the control levers and continue to feed the auger into the ground, ensuring that the spoil is being brought to the surface. ** Ok in cohesive materials, could be a problem in wet no cohesive soils **

5.3.2 If it is not happening, it can be assisted by continuing to rotate the auger and operating the traverse control lever to raise/lower the flight within the hole, thereby clearing the spoil completely.

5.3.3 If it is felt that the progress of the operation is slow, it may be necessary to test the free running rotation by way of lifting the cutter head from the base of the hole and ensuring that the available power is being transmitted to the cutter head and not simply being used to turn the auger in the hole. (If when cutter is raised from the bottom, the rig is still under load, the flight may not be central and, therefore, a large proportion of the available power may be taken up by the auger flight fouling the sides of the hole).

5.3.4 When the top of the flight reaches the top of the guide bush, place the fork tool to support the auger catch-plate, it will be necessary to add an additional auger flight as follows; open the guards and Remove drive pin, raise drill head and introduce additional section.

5.3.5 It is important that the spring loaded pins are fitted so as to ensure the spring end of the pin is trailing in the direction of rotation. (Failure to install the pin in this manner will result in it being removed by the spoil during rig operation), remove the fork tool catch-plate and close the guards. Where there are 2 pin connections ensure 2 pins are used.

5.3.6 As drilling progresses, add further flights as previously described until the desired depth is reached.

5.4 Auger/Flight Removal (small diameter 200-300mm augers)

5.4.1 Before removal of the augers check the area where it is to be landed, so as to ensure there are no obstructions or objects which could deflect the auger or damage equipment.

5.4.2 Raise auger to expose the spring pin at the lower end of the first flight.

5.4.3 Open the guards, then placing the catch-plate fork tool across the top of the guide bush (thereby preventing the remainder of the flight falling to the bottom of the hole), it is now possible to rest the catch-plate/fork tool across the top of the guide bush by lowering, using the traverse control lever.

5.4.4 **IT IS IMPERATIVE THAT THE BASE PLATE NOT ONLY SUPPORTS THE WEIGHT OF THE REMAINING FLIGHTS BUT ALSO PREVENTS THEM FROM ROTATING AND THEREBY PROHIBITING LOSS OF THE FLIGHT INTO THE HOLE IN THIS MANNER.**

5.4.5 Before any augers are removed, the second man and any other personnel present shall stand at least twice the length of the auger away from the point where it is pushed towards the ground and out of the direction of fall, and watching carefully, being prepared to move if necessary.

5.4.6 Alternatively, an excavator may be used to lift the augers clear, as described in 5.5.

5.4.7 Drill head is then traversed down and reconnected to the remaining flight section(s).

5.4.8 This process is repeated until complete removal is achieved.

5.5 Auger Flight Removal

5.5.1 Large diameter/heavy augers (Over 300mm)

5.5.1.1 The same methods as previously described are employed to separate the augers up until:

5.5.1.2 Ensuring that the drive pin is still connected within the auger and drive adaptor. Knockout the spring clip at the joint between the auger to be removed and the remaining augers.

5.5.1.3 An excavator equipped with certified chains and certified lifting clamp is then connected to the auger.

5.5.1.4 The drive pins are then removed, and the head lifted from the flight and side shifted.

5.5.1.5 The excavator then lifts and removes the auger from the string.

5.5.1.6 An excavator should be used to remove the auger when sufficient working space allows. The excavator operator will only activate his machine when he is clearly instructed to do so by the Rig Operator

5.5.1.7 **Under no circumstances should any operative place a limb or body part between the drive adaptor and auger or within the bottom of the auger at ANYTIME.**

5.5.1.8 Where space impedes the use of an excavator, a site specific method statement and risk assessment should be written

5.6 Auger/Flight Removal (using Winches / Side shift head)

5.6.1 The following basic principles shall apply:

5.6.2 As with all other rigs, at no time shall any operative place any limb or body part between an auger and ANY part of the rig OR ANOTHER AUGER. When augers are being winched forward the rig operatives must stand at least 2m behind the incoming auger.

5.6.3 No operatives will attempt to connect or separate augers without the proper equipment. 2 operatives are always needed to lift insert (if they weigh more than 25kgs), retract or for any other reason manually handle catch plates/fork tools.

5.6.4 To connect augers a dolly or lifting shackle MUST be used, that correctly fits the augers. Dolly – Hollow Stem, Shackle – Sabre.

5.6.5 The augers are introduced by connecting the top of the auger to the dolly or shackle, which in turn is connected to the winch. The winch is then employed to raise the auger, the side shift of the head (where fitted) is used to enable the auger to rise up without becoming trapped within any part of the rig.

5.6.6 Once completely suspended, the head is manoeuvred to place the auger above the auger to which it is to be connected. Any manual contact that is required to guide the auger into connection is done by handling the auger at its sides ONLY.

5.6.7 Connection is completed by following previously described methods.

5.6.8 Where augers are employed that 2 operatives cannot comfortably lift, a winch MUST be used. Any rigs that are employed to use such augers, which do not have a winch, MUST be modified (Winch fitted).

5.7 Aborted pile position and exposed pile excavations

5.7.1 If a pile position is aborted, the piling rig will be backed away from the pile position and the open bore protected with a pile cover.

5.7.2 The client and/or groundworker is to be immediately notified that the pile position requires suitably backfilling to meet the requirements of the working platform design.

5.7.3 Under no circumstances are operatives to leave site with open or exposed piles excavations

5.7.4 The Foreman is to ensure that these are backfilled before workers leave.

METHOD STATEMENT	NERO PILING & GROUND ENGINEERING

Activity/Process:	General Excavations		
Method Statement Ref:	GEN-MS 03		
Revision:	-	**Date:**	25/07/2023
Contract Name:	Brunswick Mill, Manchester	**Contract No.**	C00366

1.0 Purpose and Scope

1.1 This Method Statement defines enhanced control measures in addition to the risk assessment to be implemented during the works process.

2.0 Health and Safety Controls

2.1 Ground conditions must be established by a survey to identify the type of ground in which the excavation is to be carried out and determine the presence and location of buried services.

2.2 Where excavations are planned next to structures, suitable preventive measures must be established in case of collapse, subsidence or damage. Engineer to stipulate in a temporary works design.

2.3 Prior to commencement of excavation, the method of support should be determined and support materials should be on site before excavation starts.

2.4 Where a risk assessment establishes possible ventilation problems, a gas monitor must be utilised to monitor atmosphere before entry and to maintain a healthy atmosphere, ventilation equipment should be used.

2.5 Where there is a risk of plant, people and tools falling into excavations, edge protection must be used such as guard rails, toe boards and timber baulks.

2.6 Plant and materials should be kept away from the side of excavations to prevent wall collapse and ingress of exhaust fumes.

2.7 Excavations should be suitably illumined and have adequate access and egress arrangements.

2.8 If there is a risk of water ingress, suitable methods &/or equipment should be provided to either prevent the entry of water or to remove water e.g. pumping units, damns.

3.0 Personal Protective Equipment

3.1 Air fed breathing equipment or suitable respirators to protect against fumes, vapour, gases, lack of oxygen or other respiratory hazards.

3.2 Safety helmet, boots/shoes, goggles (protection from projectiles &/or chemicals).

3.3 Hearing protection (if required).

3.4 Protective gloves.

3.5 Overalls.

3.6 All contaminants should be removed following a suitable risk assessment and method statement.

4.0 Information, Instruction & Training

4.1 All personnel carrying out or likely to be affected by the works should be informed of the potential hazards.

4.2 All personnel involved in the work must be trained to perform their duties with due regard to the health, safety and welfare of themselves and anyone who could be affected.

4.3 All plant operators must be in possession of a CPCS card or other appropriate proof of training.

4.4 All supervisors responsible for the placing of support materials should be trained in the principles involved.

4.5 Anyone carrying out inspections of the excavation should be trained to recognise potential hazards.

5.0 Emergency Procedures

5.1 Emergency arrangements should be formulated in accordance with foreseeable hazards, e.g. collapse, electrocution, flooding, atmospheric problems.

5.2 Rescue equipment, including breathing apparatus, rescue winch, etc must be available if necessary.

5.3 Emergency services should be informed of any potential emergency they may be required to attend.

5.4 Emergency arrangements should be communicated to anyone who could be affected.

6.0 Monitoring and Review

6.1 A written report of inspection should be prepared by a competent person at least once every seven days and also following an event effecting strength or stability of the excavation and after any accidental fall of materials. The report should contain any further remedial measures required.

6.2 Reviews of RAMS should be carried out regularly by the principle contractor responsible for the work.

METHOD STATEMENT	PILING & GROUND ENGINEERING

Activity/Process:	Loading & Unloading Piling Rigs		
Method Statement Ref:	GEN-MS 04		
Revision:	-	**Date:**	25/07/2023
Contract Name:	Brunswick Mill, Manchester	**Contract No.**	C00366

1.0 Purpose and Scope

1.1 This Method Statement defines the Company Standard Implementation Procedure for the loading/unloading of all Rigs onto/off trailers.

2.0 Health and Safety Controls

2.1 See all relevant Risk Assessments.

3.0 Environmental Controls

3.1 The skips, water bowser and licensed carriers will be provided by the Main Contractor, unless otherwise is stated in the contract.

3.2 Operation should only take place within specified working hours.

3.3 General waste shall be deposited into designated skips.

3.4 Hazardous waste, such as oil contaminated materials, used oil spill kits, etc. shall be disposed of by a licensed carrier.

3.5 All vehicles shall not be run unnecessarily. Engines shall be turned off when not in use.

3.6 Fuel/ oil spills shall be prevented. Drip trays and emergency oil spill kits shall be used to catch and clean the spills/ leaks. Oil spill kits contain colour coded bags to contain any used spill equipment. These shall be disposed of by a licensed carrier.

4.0 Process

4.1 Prior to commencing loading/unloading the Site Foreperson must ensure that

4.1.1 The rig operator is a holder of a current Construction Plant Competence Scheme (CPCS) card in a category compatible with the rig being loaded/unloaded.

4.1.2 The rig operator is aware that he is responsible for the safe loading/unloading of the rig, (under direction of the transport driver) and for

the necessary attachment, stowage, locking of brakes and rig safety devices.

4.1.3 The loading/unloading area is sufficiently large to accommodate the movement of the rig without striking obstructions or causing hazards to others.

4.1.4 He liaises with the transport driver to ensure that the transporter is on firm and level ground and correctly positioned with its brakes on.

4.1.5 Any ramps are secure and low enough to keep the ramp angle low. If required, the transporter should be blocked as a precaution against tipping during the loading/unloading.

4.1.6 The rig transmission, steering, clutches, brakes, etc are functioning correctly, (Any unserviceable rig might require the assistance of a transporter winch).

4.1.7 The rig operator keeps the rig lined up with the ramps, when loading/unloading, so that the hazardous procedure of turning/slewing on the ramps does not become necessary.

4.1.8 The rig operator loads/unloads at the slowest possible speed, particularly at any point of balance. A suitably qualified and competent banksman shall be in attendance during loading / unloading operations.

4.1.9 Any movement of the rig, whilst on the transporter bed, (e.g. to centralise it) is carefully executed.

4.1.10 Final positioning of the rig when loaded is to the satisfaction of the transporter driver.

4.1.11 Any loose ancillary items such as Vibro Cones, Piling Hammers Pile Sections or steel/timber are securely stowed.

4.1.12 Any company/manufacturer specifications on safety, whilst in transit, are strictly adhered to.

4.1.13 The transporter driver is fully briefed on the rig's general specification, (e.g. Gross weight, operating length/height, overall width and transport length/height).

4.2 <u>Choice of Plant Transporter and Arrangement of loads</u>

4.2.1 It is the responsibility of the company providing the transporter and trailer, to ensure that there is sufficient load restraint on each load.

4.2.2 It is the transporter driver's responsibility/duty to check and ensure that the load is adequately secured at all times, not just at the start of the journey.

4.2.3 It is a legal requirement that the maximum permitted axle and gross weight limits are not exceeded.

METHOD STATEMENT	PILING & GROUND ENGINEERING

Activity/Process:	Clearing of Concrete & Grout Pipes & Clearing Blockages		
Method Statement Ref:	GEN-MS 05		
Revision:	-	**Date:**	25/07/2023
Contract Name:	Brunswick Mill, Manchester	**Contract No.**	C00366

1.0 Purpose and Scope

1.1 This Method Statement defines the Company Standard Implementation Procedure for the cleaning of concrete/grout pipes and Clearing blockages. A blockage is defined as when concrete/grout cannot be pushed through pipe by normal pumping methods.

2.0 SAFETY WARNING

2.1 **Compressed air should only be used to clear lines through which concrete/grout has been freely pumped immediately prior to air being introduced.**

3.0 Health and Safety Controls

3.1 See all relevant Risk Assessments.

3.2 Personal Protective Equipment (PPE) must be worn at all times as stated within the Risk Assessment associated with this process.

4.0 Environmental Controls

4.1 The skips, water bowser and licensed carriers will be provided by the Main Contractor, unless otherwise is stated in the contract.

4.2 Operation should only take place within specified working hours.

4.3 General waste shall be deposited into designated skips.

4.4 Hazardous waste, such as oil contaminated materials, used oil spill kits, etc. shall be disposed of by a licensed carrier.

4.5 All vehicles shall not be run unnecessarily. Engines shall be turned off when not in use.

4.6 Fuel/ oil spills shall be prevented. Drip trays and emergency oil spill kits shall be used to catch and clean the spills/ leaks. Oil spill kits contain colour coded bags to contain any used spill equipment. These shall be disposed of by a licensed carrier.

5.0 Process

5.1 **Prior to commencing the cleaning of concrete/grout pipes or clearing blockages the Site Foreman must ensure that:**

5.1.1 The operators of any plant i.e. rig, excavator, forklift to be used are holders of current Construction Plant Competence Scheme (CPCS) cards in a category compatible with the plant being operated;

5.1.2 Correct PPE is worn by operatives.

5.1.3 Only authorised persons are allowed within working radius of rig.

5.1.4 Determine whether the concrete is free flowing i.e. can be move by normal pumping or blocked and therefore adopt appropriate method of clearing the lines.

5.2 **Cleaning of Concrete/Grout Pipes**

5.2.1 Depressurise and withdraw as much concrete from line as possible by back pumping.

5.2.2 Disconnect concrete pump.

5.2.3 When cleaning concrete through rig ensure discharge end of auger is centred over the hole in the blow out box to prevent splashing.

5.2.4 When cleaning individual pipes ensure that the end of any flexible pipe to be cleaned is connected to the pipe inlet on the blow out box and the top hole sealed or firmly secured in some other way to prevent whiplash and that end of pipe is shielded to prevent splashing.

5.2.5 Ensure that the blowout ball is saturated with water before use. Place blowout ball in end of pipe and connect blow out chamber.

5.2.6 The concrete and sponge ball may be ejected at considerable force and this could cause serious injury or damage to property. All persons should be warned to stand well clear of discharge end of pipe and to the side of pipe away from the direction of ejection. Those persons involved in the operation should wear PPE as referenced at paragraph 3.2.

5.2.7 Apply minimum air pressure to flush pipe. The ball will accelerate as it nears the end of the pipeline and pressure must be reduced to prevent a violent discharge.

5.2.8 Should pipe not flush for any reason, turn off the compressor and control the release of pressure using the check valve provided.

5.2.9 It is possible that the air can overtake the ball, forming a pocket of compressed air between the ball and concrete. Extreme caution must therefore be taken when uncoupling in the vicinity of the ball. Those persons involved in the operation should wear PPE as referenced at paragraph 3.2.

5.2.10 Pipe considered to be blocked see section 5.3.

5.3 **Clearage of Concrete/Grout Blockage**

5.3.1 Try and determine location of blockage by observing movement of flexible sections of hose when trying to pump concrete/grout through system.

5.3.2 Depressurise pipe by back pumping.

5.3.3 Blockage in drill head – Before any rodding takes place, the auger must be removed and placed on the ground, as this will reduce the risk of operatives being hit by falling concrete. Clear the auger of any loose spoil and remove the auger cap. Rod hollow stem of auger to remove blockage.

5.3.4 Blockage in drill head swan neck – remove drill string from rig or bore drill string into ground to lower head to ground level, disconnect loop pipe and clear blockage with rods and water, this will reduce the risk of operatives being hit by falling concrete Reconnect pipe and pump concrete/grout through system as normal.

5.3.5 Blockage in “U” bend/loop pipes; to gain access to the pipe joints it may be necessary to lower the rig mast.

5.3.6 Blockage in fixed steel pipework – using rods and water clear blockage, to gain access to the pipe joints it may be necessary to lower the rig mast.

5.3.7 If concrete/grout blockage cannot be cleared by the above methods, then pipe to be discarded and replaced with new.

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	CFA-RA 01	**Assessed By:**	Alex Bird	**Date Assessed:**	25/07/2023	**Date of next review:**	25/07/2024
Contract Name:	Brunswick Mill	**Contract No.**	C00366	**Activity/Process:**	CFA Pile Installations		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures	Residual Risk		
				L	S	R/R		L	S	R/R
1	Loading/Unloading Piling Rig	Site Personnel General Public	Crushing Impact Injuries Damage to property Death	4	5	20	• Only trained, competent, authorised personnel inc banksmen used • Trailer and ramps to be clean/dry free from oil/slippery substances • On public highway, create an exclusion zone to allow public safe passage • Wait for quite periods of traffic flow before loading • Use of warning signs and cones • Avoid loading/off loading plant adjacent to parked vehicles	1	5	5
2	Setting up CFA piling Rig	Piling operatives Site Personnel	Multiple Injuries Crushing Impact Death Entrapment	3	5	15	• Piling rig to be set up in designated area with clear exclusion zone in place. • Familiarisation to be provided to ensure nothing is • Full checks of parts and connections to be completed while setting the rig up. Daily plant inspection sheet to be completed along side this. • Certification to be checked and with rig at all times	1	5	5

3	Connecting augers to the CFA piling rig	Piling operatives Site Personnel 360 operator	Multiple Injuries Crushing Impact Death	3	5	15	• Check augers for any damaged, particularly at either where the pin conncection is made to join one auger section to the next. • Use chains or sling with 360 excavator to lift augers to head of the rig/mast. Ensure lifting gear has certification and the SWL is in line with the load being lifted	1	5	5
4	MEWP - working from height	Operators Site personnel	Falling from height Multiple Injuries Death Death	4	5	20	• MEWP must have in date certification. • Operator must be competent and have IPAF ticket • When manouvering MEWP around site a banksman be used at all times. • Harness and lanyard with the correct certification must used by the operator at all times. • Checks must be completed prior to using MEWP; fuel levels, tyres etc.	1	5	5
5	Exclusion Zones for Piling Operations - reversing or manoeuvring rigs	All personnel in vicinity	Multiple injuries Crushing Death	3	5	15	• Rig Operators are trained to CPCS standards • Operators constantly vigilant and ware of other site workers • Exclusion zone surrounding rig to be enforced • Operator to cease operation immediately if exclusion zone is breached • Main contractor requested to provide a clearly marked barrier zone for rig operations • Site briefing and inductions carried out to reinforce	1	5	5
6	Connecting concrete hosing to CFA piling rig	Site Personnel	Multiple Injuries Impact Death	3	5	15	• Only competent operatives are to connect hoses piling rig and pump/agitator • Ensure hoses have the correct certifications • Check hoses for any damage; rips, holes, bent joints • Whip checks must be used on ALL connections • Clamps and R clips must be used on all connections	1	5	5
7	Concrete pump & agitator	Operators All Personnel in vicinity	Multiple Injuries Impact	2	5	10	• Only trained, competent operatives are to use concrete pump and agitator. • All checks must be completed daily before using equipment; fuel level, hose conncections etc. • Segregation must be in place around pump and agitator for when trucks are delivering concrete. • Pump and agitator must be cleaned throughly at the end of every shift to ensure no loose set concrete is pumped through the lines the next day.	1	5	5

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	GEN-RA 01	**Assessed By:**	Alex Bird	**Date Assessed:**	25/07/2023	**Date of next review:**	25/07/2024
Contract Name:	Brunswick Mill	**Contract No.**	C00366	**Activity/Process:**	General - all disciplines		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures	Residual Risk		
				L	S	R/R		L	S	R/R
1	Vehicle Access & Egress	Site personnel Visitors Trespassers	Multiple Injuries Crushing Musculoskeletal Disorders Death Damage to Vehicles and Structures	3	5	15	• Traffic management plan to be put in place in accordance with CDM Regs • Maintain haul roads • Stick to site speed limits • Trained and competent operators/drivers • Maintain site security • Vehicles & pedestrian segregation	1	5	5
2	Operation of ride on Mobile Plant	All mobile plant	Back Pain Whole Body Vibration	4	2	8	• Regular machinery maintenance • Tyre pressure checks • Seat adjustment in accordance with manufacturers guidelines • Good maintenance of traffic routes • Instruction, Training and supervision • Vibration limits to be checked and set in accordance with equipment use specific to Exposure Action Value (EAV) and Exposure Limit Value (ELV)	1	2	2

3	Exclusion Zones for Piling Operations - reversing or manoeuvring rigs	All personnel in vicinity	Multiple injuries Crushing Death	2	5	10	• Rig Operators are trained to CPCS standards • Operators constantly vigilant and ware of other site workers • Exclusion zone surrounding rig to be enforced • Operator to cease operation immediately if exclusion zone is breached • Main contractor requested to provide a clearly marked barrier zone for rig operations • Site briefing and inductions carried out to reinforce	1	5	5
4	Loading/Unloading machines & mobile plant	Site Personnel General Public	Crushing Impact Injuries Damage to property Death	4	5	20	• Only trained, competent, authorised personnel inc banksmen used • Trailer and ramps to be clean/dry free from oil/slippery substances • On public highway, create an exclusion zone to allow public safe passage • Wait for quite periods of traffic flow before loading • Use of warning signs and cones • Avoid loading/off loading plant adjacent to parked vehicles	1	5	5
5	Collision with other contractors Plant and Personnel	All personnel in vicinity Site personnel Operatives	Impact Crushing Multiple Injuries Death	3	5	15	• Exclude non essential staff from the work area • All operators to be CPCS certified • Traffic routes should be established and adhered to • Constant vigilance by operators during operations	1	5	5
6	Unloading/loading & transport of material	All personnel in vicinity	Impact Crushing	2	4	8	• Restricted access to area during unloading process • Ensure SWL for machine/attachment is not exceeded • Travel at speeds suitable for the ground conditions • The fork extensions are to be used where applicable • The FLT tines are to be in a lowered position when moving around site, this includes moving materials • If using a crane a full lift plan must be in place	1	4	4
7	Moving material into position & local storage	Pedestrians All personnel in vicinity	Crushing Impact Multiple Injuries Death	3	5	15	• Trained, competent, authorised personnel to operate forklift/excavator • Forks kept at maximum distance • Use internal site roads • Restricted access to area during unloading process • Monitoring of ground conditions to check for collapse of stored materials especially in inclement weather • Stacked material at safe & vertical height utilising wooded dunnage/chocks • The FLT tines are to be in a lowered position when moving around site, this includes moving materials • Ground must be suitable to withstand the weight of materials to be stored	1	5	5

8	Unloading by use of slinging	Slinger/signaller All personnel in vicinity	Multiple injuries Serious injuries Death	4	4	16	• Only trained and competent Slingers used • Correct slinging techniques & equipment used • Equipment and accessories checks to be carried out in accordance with LOLER	1	4	4
9	Overhead services	Operators All Personnel in vicinity	Electrocution - serious Electrocution - possibly fatal	3	5	15	• Permit to work in operation • Compliance with GS6 - 'Avoidance of danger from overhead electric power lines' • Prevent machines going too close to overhead services • Use of demarcation methods e.g. Goal posts • Toolbox Talks and training	1	5	5
10	Underground services	Operators All Personnel in vicinity	Electrocution Explosion Death	3	5	15	• Permit to dig system in operation • Working area CAT scanned • Service plans examined • Safe digging practices employed • Compliance with HSG 47 'avoiding danger from underground services • Toolbox Talks and training	1	5	5
11	Overturning mobile plant	All personnel in vicinity	Impact Crushing	3	4	12	• Installation of a designed piling platform in accordance with CDM regs for tracked plant • Localised soft spots and excavation to be back filled in a controlled manner • Working area should be inspected to check suitability for plant • Work should cease if operator deems the conditions are unsafe	1	4	4
12	Manual Handling	Site Personnel	Sprains Strains Cuts Crushing Musculoskeletal Disorders Trapping Repetitive Strain Injuries	3	3	9	• Use of mechanical handling equipment - FLT • Use of handling aids - Trolleys • Job rotation or varying working patterns • Specific training to be given to all employees in manual handling • Regular toolbox talks • Manual Handling Risk Assessment	1	3	3
13	Head Injury	Site Personnel	Head Injuries	2	4	8	• Head protection to be worn on all sites • Only trained machine operators to be used • PPE training as required	1	4	4
14	Hand/finger Injuries	Site Personnel	Impact Crushing Abrasions	3	2	6	• Suitable protective gloves worn on all sites • Training & Toolbox Talks to reinforce PPE • Activities carried out in accordance with current Method Statements	1	2	3
15	Foot Injuries	Site Personnel	Impact Crushing Entrapment	3	3	9	• Suitable protective footwear to be worn at all times on all sites. • Training and toolbox talks to reinforce PPE.	1	3	3

16	Noise	Site Personnel General Public	Hearing Impairment (long & short term)	3	2	6	• NERO to provide information and training and make hearing protection available (LEAV 80 dB) • NERO take reasonably practicable measures to reduce noise exposure (UEAV 85 dB) • Personnel not exposed to ELV 87 Db or 137 Db peak • All personnel must use hearing protection provided • Machinery serviced regularly and noise assessed	1	2	2
17	Refuelling	All operatives	Dermatitis Eye Contamination Skin Cancer	3	3	9	• Appropriate PPE to be worn inc Fuel resistant gloves, coveralls and glasses • Supervisor to ensure correct PPE is utilised • Training in the dangers of hazardous materials & Toolbox Talks Spillage Equipment on site	1	3	3
18	Placement of cem caps on rebar & setting out pins	Operatives Site Personnel General Public	Impalement Lacerations	3	4	12	• All Rebar must be protected by placing CEMCAPS onto protruding ends • Ensure correct size of CEMCAP is used appropriate to Rebar • Regular checks carried out to replace missing caps • Sufficient supply of CEMCAPS is maintained at site	1	4	4
19	Use of Vibrating Hand Held Tools	Site personnel	HAVS disruption of blood flow to fingers Damage to nerve endings Numbness Whitening Loss of dexterity VWF (Vibration White Finger)	3	4	12	• Consider using Excavator mounted equipment if suitable for the task • Use hand held tools with low vibration levels • Record daily exposure and rotate employees work schedule to reduce exposure time • Compliance with Control of Vibration at Work Regs 2005 including maintenance of tools • Vibration limits checked and operating hours set in accordance with specific equipment • Use specific to Exposure action value (EAV) and exposure limit value (ELV)	1	4	4
20	Abrasive Wheels	Operator All personnel in vicinity	Lacerations Respiratory Problems Dermatitis Eye Injury Noise Induced Hearing Loss	3	4	12	• Trained, competent, authorised personnel to use equipment • Working guards fitted to equipment • Suitable and serviceable PPE to be used - Safety Goggles BS EN 166 with suitable impact rating for task - Gloves - Face Fit Mask • Use of water suppression as required • Good ventilation and vacuum • Correct discs suitable for the task & spindle speed • Correct storage of wheels & inspect before use • Working area clean and free from debris • Vibration limits to be checked and set in accordance with equipment use specific to Exposure Action Value (EAV) and Exposure Limit Value (ELV)	1	4	4

21	Manual Hand Held Tools	All personnel using hand tools	Contact Injury Eye Injury Cuts & Abrasions	3	3	9	• Instruction given in use of tool • Suitable and serviceable PPE to be used • Appropriate tool selection in a serviceable condition • Toolbox Talks and training	1	3	3
22	Wet Concrete Works	Site Personnel	Dermatitis Concrete Burns Eye Injury	3	3	9	• Toolbox Talks and training • Suitable welfare facilities for washing • Suitable, serviceable & clean PPE to be used - Glasses & Overalls • Regular skin checks for dermatitis	1	3	3
23	General & Open Excavations inc Trenches	Site personnel All personnel in vicinity	Multiple Injuries Crushing Suffocation/Asphyxiation Fire Explosion Electrocution Drowning Death	4	5	20	• Permit to dig system in operation • Plant & materials to be kept away from side of excavations to prevent undue pressure or ingress of exhaust fumes • Shoring & edge protection measures to be put in place • Possible temporary works design for deep excavations • Suitable access/ egress arrangements must be available (ladders/ ramps) • Where a risk of water ingress is present suitable methods of prevention should be put in place (water pumps) • Inspections should be carried out prior to each shift or change in weather conditions • Gas monitoring • Suitable and serviceable PPE to be used	1	5	5
24	Slips, trips & falls	Site Personnel	Impact Multiple Injuries Death	3	3	9	• Toolbox Talks and training • Adhere to designated pedestrian routes • Agree offloading and storage areas • Tidy up as works progress keeping area free of clutter • At the beginning and end of each shift ensure all equipment and materials are tidy and organised • Use signage to identify trip hazards	1	3	3
25	Removal of Manhole Covers For Inspection of Drains and Ducts	Site personnel	Back Strain Musculoskeletal Disorders Finger Trapping Human Infections - Leptospirosis Asphyxiation Poisoning	3	4	12	• Examination carried out without entering manhole • Use suitable equipment & tools for heavy lifting of covers • Suitable and serviceable PPE to be used - Gloves - Overalls • Maintain good hygiene to prevent contamination • No eating, drinking or smoking	1	4	4

26	Cutting/Heating with Bottled Gases	All personnel in vicinity Operatives	Eye Injuries Burns Heat Stress Property Damage Back Strain (manual handling) Death	3	5	15	• Remove flammable material from area before commencement of operation. • Only Qualified Operatives can use the equipment • Suitable and serviceable PPE to be used - Welders Gloves - Leather Apron plus FR/ARC clothing - Welders Goggles/Mask BS EN 166 B • LEV if in confined space • Use correct lifting techniques when handling cylinders • Use correct storage and security of cylinders	1	5	5
27	Cutting/Grinding Materials (Portable Appliances) Associated Hazard - Burst wheel - Contact with Disc - Entanglement - Flying fragments - Dust - Noise - HAVS	Operatives All personnel in vicinity General Public	Lacerations Respiratory Problems Dermatitis Eye Injury Noise Induced Hearing Loss Death	3	5	15	• Trained, competent, authorised personnel to use equipment • Correct wheels/discs suitable for the task & spindle speed • Working guards fitted to equipment • Good ventilation and vacuum • Suitable and serviceable PPE to be used - Safety Glasses BS EN 166 with suitable impact rating for task - Gloves - Face Fit Mask - FR/ARC clothing &/or overalls • Correct storage of wheels & inspect before use • Vibration limits to be checked and set in accordance with equipment use specific to Exposure Action Value (EAV) and Exposure Limit Value (ELV)	1	5	5
28	Portable Electric Tools	Operatives Site personnel	Electrocution Fire Burns Death	3	5	15	• Use air operated hand tools where possible • Equipment fitted with industrial plugs to BS4343 with flexible leads • Power source should be 110v and centre tapped earth • Use of insulated tool • Surge protection (RCD) for 240v equipment • Maintained in accordance with manufacturers recommendations and legislative regulations	1	5	5
29	Use of Jetwash for cleaning equipment	Site Personnel	Multiple Injuries	2	3	6	• Only trained, competent authorised personnel used • Restricted access to area during operation • Toolbox Talks and training • Suitable and serviceable PPE to be used	1	3	3

30	Driving Activities	All drivers Site Users Public	Death Multiple Injuries Serious Injuries	2	5	10	• Driver Licensed for Category of Vehicle • Periodic Driver Training Given • Periodic Licence Checks • Driver to Notify any Medical Conditions or Endorsements • Vehicle is in a Roadworthy Condition • Drivers handbook Issued • Topical Advice Issued Regularly • Management of driving & duty hours	1	5	5
31	Quick Hitch Attachment detaching from the Dipper Arm of the Excavator	Operators All Personnel in vicinity	Impact Crushing Death	4	5	20	• Use Standard Bucket/other ancillaries secured to the Dipper arm with two pins • On manual & automatic Quick Hitch attachments all safety pins must be in position • Physically check pins before use by "Shake, Rattle & Roll" - Manual & Automatic to ensure 'locked' • For lifting ops the weight of the QH should be deducted from the SWL. • Operatives must be trained & competent in the use of QH devices	1	4	4

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	GEN-RA 02	**Assessed By:**	Alex Bird	**Date Assessed:**	25/07/2023	**Date of next review:**	25/07/2024
Contract Name:	Brunswick Mill	**Contract No.**	C00366	**Activity/Process:**	Coronavirus		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Activity &/or Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures	Residual Risk		
				L	S	R/R		L	S	R/R
1	Direct Contact with others in working areas	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	4	5	20	• Avoid direct 'face to face' contact with others • Social distance from others where this is not possible the hierarchy of control must be followed **Eliminate, Reduce, Isolate, Control, PPE (last resort)** and advice sought from the H&S Dept • Wash hands regularly with soap and water where available or alcohol sanitiser if not. • Wear gloves - **Disposable** discard after use; **Reusable** clean and sanitise thoroughly at regular intervals intervals to ensure cross contamination is avoided • Clearly mark exclusion zone around work area with barriers/cones tape etc • Avoid site communal areas **• Immediate notification if symptoms are present in yourself or other crew members.**	1	5	5

2	Use of company vehicle and associated duties	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	3	5	15	• Avoid public transport where possible but if this is the only option avoid peak travel times • Use pay at pump option &/or contactless • Use disposable gloves (if available) and bin after use to prevent cross contamination when refuelling • Wash hands regularly in accordance with guidelines • Wipe shared use areas with alcohol wipes/cleaner before and after use	1	5	5
3	Site Induction	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	4	5	20	• Ensure site induction is carried out in controlled environment with sufficient space to social distance • Site inductions to include measures put in place on site as a result of COVID-19	1	5	5
4	Welfare Facilities	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	4	5	20	• Avoid using canteen, where possible eat/drink in van. • While using site facilities social distance where possible • Ensure all welfare facilities are being kept clean • Monitoring of control measures must be in place • When using toilet facilities try to keep to a one in one out rule. If this is not possible. • Wash hands regularly with soap and water where available or alcohol sanitiser if not.	1	5	5
5	Exclusion Zones	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	3	5	15	• Ensure exclusions zones are in place to avoid other site operatives do not come within NERO working area **Eliminate, Reduce, Isolate, Control, PPE (last resort)**	1	5	5
6	Use of Respiratory Protective Equipment (RPE) (Disposable and Reusable)	Operative(s) Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	3	5	15	• Hands and masks to be cleaned and sanitised before handling • Individuals must be clean shaven for close fitting masks masks. • After use - disposable masks must be placed in waste bin. Reusable masks are to cleaned in acccordance with manufacturers guidance • Masks are precious in this period of health crisis. Take care of them and do not use them when they are not needed - **ONLY** as a last resort • Use of RPE must **not** be used for protection against COVID-19 where the 2m rule can be applied. • Use of RPE for protection against COVID-19 **must** be authorised prior to commencing task.	1	5	5

7	Dealing with a suspected COVID-19 case	Operative(s) Transport driver Any other Personnel (fitter, supervisor etc.)	Contract Virus Potential further medical complications Death	3	5	20	• Immediately isolate the ill person from the team possible and inform the line manager • Severe symptoms (respiratory problems, high fever), call emergency services and seek advice • Mild symptoms, ask the person to return home provide them transportation) and to contact NHS 111 for advice or use online service inc testing • Arrange transportation for personnel to return home (if applicable) • Whenever possible, disinfect all equipment that has been in contact with the ill person. • Follow any guidance given by medical staff relating to subsequent isolation of contacts	1	5	5

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	GEN-RA 03	Assessed By:	Alex Bird	Date Assessed:	25/07/2023	Date of next review:	25/07/2024
Contract Name:	Brunswick Mill	Contract No.	C00366	Activity/Process:	Bored Piling Operations		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures	Residual Risk		
				L	S	R/R		L	S	R/R
1	Clearing Pipe Blockages (Concrete) - Flexible Hoses causing Whiplash during pipe Blockage Clearance & Impact from Concrete Blown from Pipe.	All Personnel in the vicinity Operatives	Multiple Impact Injuries Hit By Projectile Concrete Death	3	5	15	• NEVER USE COMPRESSED AIR • Do not handle or attempt to move a Grout Hose whilst under pressure • On discovering a blockage; - Put the Pump into reverse gear to relieve the pressure in the hose - Switch off the pump - Remove the hose from the Rig Head and secure in a Safe Place for cleaning • Flexible pipes to be suspended and blockages dislodged by tapping or jerking • Water and drain rods to be used to clear fixed steel pipe work • When using Grout Pumps Operatives must wear - Full Face Visor to BS EN 166B standard - Gauntlet Gloves - Safety Helmet	1	4	4

							• Goggles must be worn within the area of works. • All personnel must be clear of the Danger area during this operation. • Following Clearing, all pressure must be released from the Pipe Sections before Uncoupling • Never straddle a flexible pipe during any operation			
2	Routine cleaning out pipe lines when no blockage has been present - Flexible Hoses causing Whiplash during Routine Pipe cleaning, using Compressed Air and impact from projected concrete or wash ball.	All Personnel in the vicinity Operatives	Multiple Impact Injuries Hit By Projectile Concrete Death	3	5	15	• Never handle or attempt to move a grout hose whilst it is under pressure • Flexible hose/pipes must be firmly secured by rope or • When using Grout Pumps Operatives must wear - Full Face Visor to BS EN 166B standard - Gauntlet Gloves - Safety Helmet • Goggles must be worn within the area of works. • All persons should stand well clear of discharge end of pipe and to the side away from the direction of ejection • Apply minimum air pressure to flush pipe • Should pipe fail to flush, turn off the compressor & control the release of pressure using the check valve • End of pipe must have a catch basket or other suitable (hole/digger bucket) method of suppressing the wash ball &/or projectile concrete escaping • ALL PRESSURE MUST RELEASED FROM PIPE SECTIONS BEFORE UNCOUPLING	1	4	4
3	Moving Rig with Hose Attached to Concrete Pump - Overturning of Concrete Pump / Rupture of Pressurised Hoses	All Personnel in the vicinity Operatives	Crushing Injury Impact from Projectile Concrete Impact from Rapidly Moving Hose	2	4	8	• CPA - Concrete Pump Operatives Safety Guide must be followed at all times • During Rig movement Rig Operator and Banksman to observe closely to ensure pump hose is not tensioned or damaged by obstacles. • Concrete pump operators to be CPCS Certified. • Good communication & co-ordination between pump operator & Banksman during rig movement • Length of hose suitable for task • Hose to be routed so that site vehicles do not track over & incur damage • Regular site monitoring to ensure compliance	1	4	4

4	Lifting and Placing Heavy Steel Reinforcement Cages	All Personnel in the vicinity Operatives	Musculoskeletal Injuries Impact Crushing Slips, Trips & Falls Death	3	5	15	• Use Ancillary Winch on the Piling Rig to Lift and Place the Reinforcement Cages • Only cages that can be easily Man Handled, considering the weight and dimensions of the cage should be lifted by the operative • Consideration and reference to the Manual Handling Operations Regulations 1992 must be adhered to • The area where the cages are moved should be free from obstructions and firm level ground • Each individual task should be Risk Assessed accordingly • Personnel must remain clear of bucket/dipper arm and at a safe distance of the operation to avoid contact from falling material when utilising an excavator to carry out the operation	1	5	5
5	Excluzion Zones for Piling Operations	Operative and Personnel in the vicinity	Death Multiple Injuries Crushing	2	5	10	• Exclusion zone surroundiong piling rig to be enforced.of 6- • Operator to cease operation immediately if exclusion zone is breached. • Main contractor requested to provide a clearly marked barrier zone for rig operations • Site briefing and induction carried to reinforce	1	5	5
6	Erecting and De-Erecting rig masts	Operatives	Crushing Impact Injuries Death	3	5	15	• Process only to be carried out by trained personnel • Exclusion zone surrounding piling rig to be enforced • Process must be carried out on firm level ground. • Area must be checked for any over head cables before the process starts • The method statements for this process must followed. • This process is also set out in the rig operators manual.	1	5	5
7	Aborted piling positions	Operatives Personnel in the vicinity	Slips, Trips and falls	4	3	12	• Process stated within the relevent method statement must be followed • Piling rig must be backed off and the open bore protected with a pile cover • The pile position requires suitably backfilling to meet the requirements of the working platform design.	1	3	3

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	GEN-RA 04	**Assessed By:**	Alex Bird	**Date Assessed:**	25/07/2023	**Date of next review:**	25/07/2024
Contract Name:	Brunswick Mill	**Contract No.**	C00366	**Activity/Process:**	Manual Handling - All Disciplines		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures / Method	Residual Risk		
				L	S	R/R		L	S	R/R
1	Loading Tools and Equipment into and out of vehicles	Operatives	• Back Injury • Hand & arm injuries as a result of sharp objects • Foot injuries as a result of dropping load • Slips, trips and falls • Inclement weather	3	4	12	**Control Measures** • Break load down into smaller more manageable components • Ensure routes are free from obstructions and non essential personnel • Load heavy tools and equipment singularly • Use team lifting when appropriate • Use appropriate gloves • Use suitable footwear **Method** • Individual to use correct lifting techniques • Load to be close to body when lifting • Individuals to assess their own capabilities • If load is too heavy, bulky or an awkward shape, use team lifting • When team lifitng elect a team leader to oversee lift	1	3	3

							• Wear hand/arm protection to protect against sharp edges/corners etc. • Wear safety footwear to protect against accidental dropping of loads			
2	Handling of materials (e.g. steel bars, casings, trestles etc.)	Operatives	• Back Injury • Hand & arm injuries as a result of sharp objects • Foot injuries as a result of dropping load • Slips, trips and falls • Inclement weather	3	4	12	**Control Measures** • Where possible reduce the size of the materials before moving • Ensure routes are free from obstructions and non essential personnel • Use mechanical equipment where possible, such as FLT or Excavator • Use team lifting when appropriate • Use appropriate gloves • Use suitable footwear **Method** • Review route to be taken and remove and obstructions • Warn other personnel not involved in the lift about the operations - take particular care on blind corners • Individual to use correct lifting techniques • Load to be close to body when lifting • Individuals to assess their own capabilities • If load is too heavy, bulky or an awkward shape, use team lifting • When team lifitng elect a team leader to oversee lift • Wear hand/arm protection to protect against sharp edges/corners etc. • Wear safety footwear to protect against accidental dropping of loads	1	4	4

RISK & WORKING ENVIRONMENT ASSESSMENT

NERO
PILING & GROUND ENGINEERING

Risk Assessment Ref:	GEN-RA 05	**Assessed By:**	Alex Bird	**Date Assessed:**	25/07/2023	**Date of next review:**	25/07/2024
Contract Name:	Brunswick Mill	**Contract No.**	C00366	**Activity/Process:**	Concrete Pouring & Placement		

Risk Assessment Matrix

Severity \ Likelihood	1	2	3	4	5
1	1	2	3	4	5
2	2	4	6	8	10
3	3	6	9	12	15
4	4	8	12	16	20
5	5	10	15	20	25

Likelihood Key

Score	Likelihood
1	Unlikely
2	May Happen
3	Likely
4	Very Likely
5	Certain

Severity Key

Score	Severity
1	Minor Injury (First Aid)
2	Minor Injury (Hospital Treatment)
3	Seven Day Injuries (Time Lost)
4	Major Injuries
5	Death

Risk Number	Associated Hazard	Person(s) Affected	Consequence	Risk Assessment Score			Control Measures	Residual Risk		
				L	S	R/R		L	S	R/R
1	Trips/falls as a result of reinforcement bars	Operatives Site personnel	• Impalement • Hand & arm injuries as a result of sharp objects • Impact • Cuts & Abrasions • Multiple Injuries • Death `	3	3	9	• Toolbox Talks and training • Adhere to designated pedestrian routes • Agree offloading and storage areas • Tidy up as works progress keeping area free of clutter • At the beginning and end of each shift ensure all equipment and materials are tidy and organised • Use signage to identify trip hazards • Mushroom caps or coverings must be used on exposed steel	1	3	3
2	Contact with wet concrete to skin and eyes	Operatives Site personnel	• Dermatitis • Concrete Burns • Eye Injury	2	3	6	• Toolbox Talks and training • Suitable welfare facilities for washing • Suitable, serviceable & clean PPE to be used • Regular skin checks for dermatitis • Regular skin checks for dermatitis	1	3	3

3	Entanglement / Entrapment with moving parts of site plant	Operatives Site personnel	• Dermatitis • Concrete Burns • Eye Injury • Death	2	5	10	• Ensure all appropriate guards or other suitable measures are being used and in place • Do not climb into or onto moving plant • Only trained competent persons to operate plant • Test all emergency systems/switches on plant are in working order before use • Banksman must be used at all times	1	5	5
4	Driving Activities - Delivery to site of ready mixed concrete	Operatives Site personnel Driver	• Death • Multiple Injuries • Crushing	2	5	10	• Ensure driver can see operatives at all times • Banksman must be used to direct concrete delivery into position • Driver Licensed for Category of Vehicle • Vehicle is in a Roadworthy Condition • Ground conditions are to be compacted and levelled suitbale for heavy loaded concrete truck to manouvre on	1	5	5
5	Manual handing of concrete hosing	Operatives Site personnel	• Sprains • Strains • Cuts • Crushing • Musculoskeletal Disorder • Trapping	3	3	9	• Allow pump pump to undertake as much of the work as possible • Reduce bending, twisting and stooping actions • Use of an aid such a sling around the hose to direct concrete • Ensure hosing is as empty as possible before moving and only move one section at a time • Use of mechanical handling equipment - FLT • Job rotation or varying working patterns • Specific training to be given to all employees in manual handling • Regular toolbox talks	1	3	3

COSHH ASSESSMENT

Substance:	Hydrocarbon, Diesel Fuel	**Composition:**	Aromatic Hydrocarbon used as fuel
USE:	Use as a fuel for internal combustion engines	**Exposure:**	Skin Contact, Accidental splash in eyes or mouth. Inhalation of fumes

Who could be affected by this activity: Tick (✓)			**Employees (✓)**	**Contractors (✓)**	**Members of the Public (✓)**	
Work Activities	**Hazards**	**Usage Controls**	**Storage Controls**	**Spillage Controls**	**Residual Risks After Control Measures**	**First Aid**
Used as fuel in internal combustion engines designed to use Diesel oil. Engines to be supplied with fuel by a suitable control device from an approved storage tank. Pump or containers.	Repeated or prolong exposure to the skin may increase the risk of skin disorders and in exceptional circumstances may include skin cancer. Irritation to the eyes may occur if splashed. Hydrogen sulphide vapours may be evolved at certain	Avoid eye contact wear goggles if splashing is possible. Avoid prolonged or repeated skin contact Wear impervious gloves Avoid inhalation of any vapours or fumes. Avoid ingestion. No smoking eating or drinking	Store in an approved container and treat as flammable liquid. Ensure storage containers are adequately bunded and earthed. Only refuel in an open space. Keep all flammable waste clear of tanks and containers. Ensure a suitable fire extinguisher is at	Containing absorbable materials if used must be double bagged and dispose of contaminated waste. Prevent contamination of drains and watercourses. Wipe up any accidental spillages use granules or absorbent materials.	1X2 = 2 Low	**Inhalation:** Remove to fresh air and keep affected person warm and at rest. Seek immediate medical attention if full recovery is not rapid. **Skin Contact:** Wash thoroughly with soap and water. Remove contaminated clothing. If irritation persists, seek medical advice.

	temperatures. Inhalation of these may result in respiratory irritation and narcotic effects may follow.	in the work area. Use soap and water to remove any contamination before eating drinking or smoking. Change any heavy contaminated clothing and launder before use. Ensure good ventilation and use goggles if splashing is a possibility	hand preferably foam. Also ensure a accidental skill control kit is near to hand and that any spilled fuel cannot enter any drain or water courses. Keep containers on oil absorbent material to catch drips etc. Ensure tops are secure.	Report spillages to site management and to NERO office as soon as practicable. Do not over fill plant or vehicles.		**Eye Contact:** Remove any contact lenses before rinsing the eyes with plenty of water whilst lifting the eyelids. Continue for at least 15 minutes. Seek medical attention if discomfort continues. **Ingestion:** DO NOT induce vomiting. Immediately rinse mouth out and drink plenty of water if conscious Seek medical attention

COSHH ASSESSMENT

PILING & GROUND ENGINEERING

Substance:	Concrete	**Composition:**	Cement, Chromium, Silica
USE:	Forming Piles & Ground Beam	**Exposure:**	Skin Contact, Accidental splashes in eye or ingestion

Who could be affected by this activity: Tick (✓)			**Employees (✓)**	**Contractors (✓)**	**Members of the Public (✓)**	
Work Activities	**Hazards**	**Usage Controls**	**Storage Controls**	**Spillage Controls**	**Residual Risks After Control Measures**	**First Aid**
Ready mixed concrete delivered to site in specialist vehicle. Concrete poured into hollow piling or excavation direct from vehicle via chute attached to vehicle. Volume of concrete delivery controlled by specialist delivery driver.	No mixing on site therefore no dust or inhalation hazards exist. Excessive or prolonged exposure to wet concrete may cause severe chemical burns to the skin and eyes. Accidental ingestion of wet cement may cause	For those assisting in the pouring of the cement impervious gloves must be worn. Wear goggles to BS 2092 1/C/D Wear safety impervious footwear Wash hand after the work activity is completed and before eating or drinking.	No concrete is stored on site	No special precautions required. Do not allow any wet spillage to enter the drains or other watercourses. Allow any spillages that may occur to set hard and then remove to normal waste skip.	1X3 = 3 Low	**Inhalation:** Not possible **Skin Contact:** Immediately wash with plenty of water and soap. Apply after work creams if sensitive skin. If reddening or irritation persists, seek medical advice. **Eye Contact:** Irrigate the open eye with eyewash solution or clean water for at least

	gastrointestinal discomfort	Apply after work creams				10 minutes. Seek immediate medical advice. **Ingestion:** Unlikely, but if accidental ingestion occurs DO NOT induce vomiting. Seek immediate medical advice