| | | | | |
|---|---|---|---|---|
| **Division** | Piling | | | |
| **Client** | Rowlinson Construction Limited | | | |
| **Project** | Silk Street, Gorton | | | |
| **Job No. 211771** | | **Date** | | |
| **VE Contacts** | Contracts Engineer | Nathan Spence | **Tel no.** | 07834 800645 |
| | Foreman / Supervisor | TBC | **Tel no.** | TBC |
| | HSQE Dept | Collin Williams | **Tel no.** | 01773 304065 |

**Revision Status**

| Initial | Name | Position | Date | Signature |
|---|---|---|---|---|
| Prepared by | Nathan Spence | Contract Engineer | 09/12/2021 | |
| Reviewed by | | | | |
| Client Acknowledgement by | | | | |

| Rev no. | Revised by | Date | Amendments |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

| EMERGENCY CONTACT DETAILS | |
|---|---|
| List names here<br><br>Scott Mills | List numbers here<br><br>07834 800650 |
| Site location is:<br><br>**Silk Street, Gorton, M40 1HE**<br><br>Hospital location is:<br><br>**Manchester Royal Infirmary, Oxford Road, Manchester, M13 9WL** | |

VAN ELLE
TOTAL FOUNDATION SOLUTIONS

## BRIEFING SHEET

By signing this method statement, I confirm that I have been briefed on its contents and understand my personal responsibilities to work in accordance with the RAMS and to **not undertake anything which adversely affects my own safety, or that of others**

I understand that I must stop work and notify my Line Manager if I cannot complete my work in accordance with this method statement.

I understand that I have a responsibility to challenge & report unsafe acts and conditions; copies of any reports shall be passed to the site manager and to Van Elle's H&S Dept.

All accidents must be reported directly to the Van Elle HSQE Dept. on **01773 30 40 65**

I understand that mp3 players, or other personal entertainment items must not be used in operational areas. Telephone calls must only be taken from a position of safety. Machines must be brought to a halt before calls are taken.

| A Van Elle Permit to Work must be completed fully and signed off | Date | Name | Signature | Job Role | First Aider? |
|---|---|---|---|---|---|
| You must wear your PPE in accordance with the site rules and this RAMS. PPE must be maintained in a reasonable condition | | | | | |
| You must not attempt to start work if you are in possession of, under the influence of alcohol or illegal substances. You may be tested at any time under the Van Elle Policy | | | | | |
| Your work must stop and be reviewed if it is putting members of the public or other contractors at risk. | | | | | |
| Make sure other contractors are excluded from your work area. | | | | | |
| You must only carry out work for which you are trained and competent | | | | | |
| All plant & vehicles movements must have a Banksman in attendance | | | | | |
| Edge protection or fall arrest must be in place for work at height | | | | | |
| All plant & equipment must be inspected and maintained in good working order | | | | | |
| Use the correct tools & equipment for the task at hand. Do Not Improvise | | | | | |
| All work areas must be kept clean & tidy. All debris to be placed in the correct waste skip. | | | | | |
| | | | | | |



Think Safety. Act Safely.

VAN ELLE
TOTAL FOUNDATION SOLUTIONS

## Amendments to RAMS

### Dynamic Risk Assessment

Complete at the place of work, **before** you start

Answer the **"Before You Start"** questions

Review the **"Hazards"** list

Are the Hazards adequately controlled?

**No** → **STOP WORK** → Inform your Line Manager. Agree a Safe System of Work

**Yes** → All team members briefed and signed onto the risk assessment → Start work. Keep checking for new hazards

| Before You Start | |
|---|---|
| 1 | Do you have a risk assessment, method statement or work instruction covering the task? |
| 2 | Does everyone have the correct PPE? |
| 3 | Do you have the correct tools / equipment, in good condition & PAT tested if appropriate? |
| 4 | Are other people (including the public) protected from your work? |
| 5 | Are health risks such as dust, noise, HAVS, and manual handling controlled? |
| 6 | Do you have serviceable fire extinguisher(s), first aid kit and spill kit? |
| 7 | Do you know who your 1st Aider is? |
| 8 | Do you have safe access and egress for pedestrians and machines? |
| 9 | Does everyone have the necessary competences to complete the task? |
| 10 | Have measures been put in place to protect the environment from pollution etc? |
| 11 | Are all the necessary Permits to Work in place? |
| 12 | Do you have copies of all relevant (and current) plans / drawings? |

| Are these Hazards / Risks present & NOT controlled | |
|---|---|
| 1 | Falls from height |
| 2 | Falling or flying objects |
| 3 | Chemicals or harmful substances |
| 4 | Heat, fire or explosion |
| 5 | Work near water |
| 6 | Risk to plant / property |
| 7 | Contact with stationary object |
| 8 | Object overturning or collapsing |
| 9 | Slips, trips or falls on the same level |
| 10 | Entry into a confined space |
| 11 | Dust / Fumes / Vapours |
| 12 | Deep Excavations (>1.2metres) |
| 13 | Noise / Vibration |
| 14 | Poor ground conditions |
| 15 | Electricity |

| Are these Hazards / Risks present & NOT controlled | |
|---|---|
| 16 | Poor storage / housekeeping |
| 17 | Underground / Overhead Services |
| 18 | Manual handling |
| 19 | Poor lighting |
| 20 | Temperature (High / Low) |
| 21 | Adverse weather (high winds, ice, snow) |
| 22 | Defective or uncertified equipment |
| 23 | Risk to you from the work of others |
| 24 | Risk to others / public from your work |
| 25 | Stored energy |
| 26 | Moving plant or vehicles |
| 27 | Security |
| 28 | Temporary works |
| 29 | Other (state) |
| 30 | Training / Supervision |

**List below any changes in site specific hazards that have been introduced**

**What additional controls have been implemented to address the risks?**

**Briefed By:**

| Name | Signature | Date |
|---|---|---|
| | | |



Think Safety. Act Safely.

## Piling Restricted Zones

The design, layout and operation of working areas are key to ensuring that people are segregated from the risk of collision or entrapment from mobile plant or equipment and the risk of falling objects striking an individual working within the working area.

**RED ZONE** - Restricted Zone: None essential personnel are not to enter these areas as there is a significant risk of harm or damage to other plant/vehicles.

**AMBER ZONE** - Danger Zone: Authorised persons can enter only when driver/operator has acknowledged you and it is safe to do so.

**GREEN ZONE** - Safe Access Zone: This is optimum position you should stand to gain a line of sight with the operator. This is where you should give the 'thumbs up' and receive acknowledgement before entering an Amber or Red Zone.

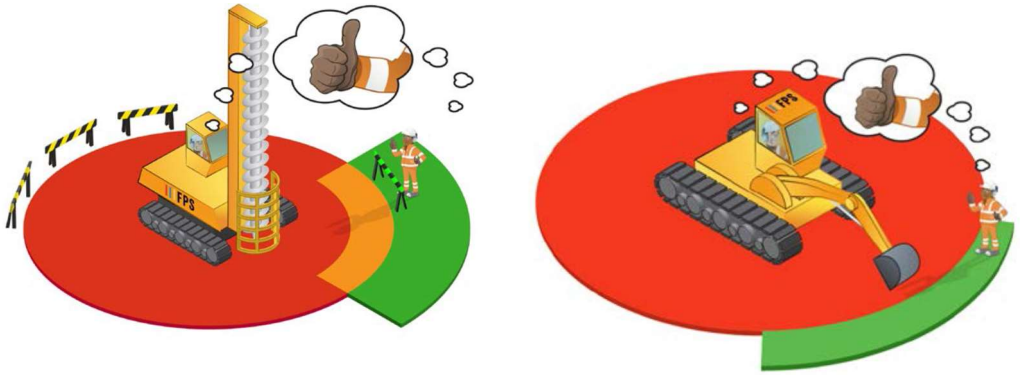


Illustration Purposes Only

**Scope of Works** (This section MUST be completed by the person compiling the method statement. It must address the work to be undertaken and **all site specific** risks identified during pre-start.

141No. 400mm & 34no 300mm diameter Continuous Flight Auger (CFA) bearing piles designed and constructed to maximum depth of 16.0m, reinforced with 6H16 x 7m & 4H16 x 7m cages. All pile to be cast with concrete design class C30/37 DC-2 S4 consistence. Works to be completed using a Llamada P105TT piling rig.

**Plant:**
To consist of a static concrete holding drums, Putzmeister / Schwing concrete pumps or similar, minimum 14T x 360˚ excavator c/w minimum 1T lifting eye plus operator (fully attendant for 10hr piling shift, M/C to supply), 9T dumper c/w operator, 2 tool compressor and jet washer.

**Minimum Attendances:**

- MC to provide mains pressure water supply to our laydown area and concrete plant.
- Excavator to be utilised for installation of cages due to size of reinforcement and performing general piling activity lifts. Client to provide.
- Removal of spoil from piling area to another area and removal of spoil by others
- 110V power supply for on site cube curing.
- Datum level to be recorded prior to piling commencement on each block. Setting Out Engineers to carry out spot levels at regular intervals to check any deterioration in the pile mat thickness as works progress. Weekly maintenance sign off required as per Working Platform Certificate.

**Testing:**

- Slump testing of every concrete load
- 4no concrete testing cubes to be taken for every 75m3 or per day. To be tested at 7,28,28 and 56 days.

**Site Setup:**

- Hard standing area for concrete drum and pump laydown located on piling matAll “live” services to be clearly demarcated on site with signage and clearly highlighted on the Permit To Dig.
- Piling rig to operate at gradients no greater than 1:20 at any point. Any Access ramps to be installed at a gradient no greater than 1:10.

**Site Hours:**
8.30am and 6.00pm Monday to Friday and 8:30am to 1.00pm on Saturdays

**Vibration Monitoring:**
Piling works are in close proximity to local Canals & River Trust’s property and as such vibration from the piling rig should be monitored to prevent possible damage. A PPV level of not greater than 15mm/s should be monitored for intermittent vibration and where the piling works are in continuous motion the PPV level should not exceed 7.5mm/s.

| Rig | Commencement Date | Approx duration of works |
|---|---|---|
| **Llamada P105** | **Wc 10/02/2022** | **2 Weeks** |
| | | |

**Method of work and control measures**

**Prior to work commencing**

**Member of Contracts shall ensure:**

- A visit to site is carried out prior to work commencing & a copy of visit report to be provided to site.
  - Site specific hazards (eg underground services, overhead services & contamination etc) are identified and suitable control measures identified.
  - Platform requirements are communicated to the client/main contractor.
- That crew deployed to site have necessary competencies

| | |
|---|---|
| Piling Foreman / Supervisor | SSSTS / NVQ3 |
| Piling Rig Operator | CPCS / NVQ Piling Operations |
| Banksman | CPCS / NPORS Slinger Signaller |
| Concrete Pump Operative | CPCS Trailer Mounted Concrete Pump |
| Excavator Driver | CPCS / NPORS Excavator with lifting endorsement (180° or 360° depending on site) |

**The Main Contractor / Client will be responsible for**

- In accordance with HSE guidance HSG47, the location, identification and marking of underground services within the working area, and taking the necessary precautions to protect and avoid them. (eg isolation, diversion, shrouding etc)
- Providing a suitably designed, constructed and maintained working platform for the duration of the contract. Test information shall be passed to the designer for review. The FPS Working Platform Certificate (SET33) shall be signed by an authorised person from the Main Contractor to confirm that the installed platform is capable of providing a stable base for the rig deployed to site. This must be signed prior to the rig being erected. The Working Platform Regular Inspection Log shall be completed after any platform disturbance or at least once per week.
- Advising on known or likely ground contamination.
- Signing the Van Elle Permit to Work (SET16) to confirm the above has been completed.
- Protection of public / 3rd parties from concrete / falling spoil going beyond site boundary. If public footpaths or parking areas are adjacent to the piling area then additional precautions (eg watching/divisions/protection) should be employed
- Protection of road surfaces, pavements, buildings & services

**The Foreman shall:**

- Walk the work area & confirm that all hazards are adequately controlled prior to work commencing.
- Ensure that client/main contractor has signed off the Working Platform Certificate to verify that the platform has been installed in accordance with the platforms design.
- Check that the client / main contractor has carried out checks / protection for underground services.s
- Ensure that sufficient PPE provisions are available & that it is worn in accordance with Van Elle & Main Contractor requirements. Mandatory PPE is safety helmet, safety footwear, light eye protection and & hi-viz clothing. Other PPE in accordance with risk assessment
- Check that the rig, lifting accessories and other plant have in-date certification before use
- Ensure that daily inspections are carried out on all plant and equipment & a record of inspection completed. Any problems/defects must be reported to the Contracts Manager immediately. All machinery shall only be operated by trained & competent persons.
- Ensure that a suitable excavator with lifting point has been supplied in full time attendance. The Foreman will induct the attendant driver into the piling process & check certification. SET6 Excavator Induction Checklist to be completed.
- Ensure that the Permit to Work (SET16) is signed prior to work commencing, and thereafter on a WEEKLY basis.
- The Van Elle Permit & WPC must be signed before erecting the rig

**Mobilisation to and from site**

All vehicles will be supervised by a Banksman and enter site as per the designated route agreed at Pre-Start Meeting.

The foreman shall

- Make sure any building, services or footpath is protected before any unloading takes place.
- Assess the area designated for unloading & storage, taking into consideration surrounding buildings, other contractors, pedestrians, traffic routes etc. Safety barriers may need to be used to segregate the lift from other activities and/or pedestrians.
- Make sure that all loads are checked for security before unloading commences. In the event of a load having moved or become unstable in some way during transport, unloading will not continue until a safe means of unloading has been determined. Unstable loads should not be allowed to tip or fall to the ground unless there are no other safe options & only after a risk assessment has been completed with the Line Manager.
- Agree a sequence of unloading with the delivery driver. All instructions regarding unloading of equipment and materials to come from one nominated person

Where access is required onto the back of the trailer to sling loads, A secured ladder or step system must be used. edge protection shall be fitted to trailers to prevent injury by falls from height. This must consist of two restraints – a top rail at approx. 950mm and a mid rail. Clear walkways must be present to ensure that a person can access and move around the trailer bed safely whilst slinging the piles.

On the trailer bed, LOOK where you're going - DO NOT walk backwards! DO NOT RUSH! DO NOT USE A MOBILE PHONE!

Avoid unloading rigs on inclines. The Banksman will position himself forward of the loading process so that all rig movements and the rig operator are clearly visible. NO ONE must be allowed to stand at the side or behind the vehicle being unloaded. All instructions to the rig operator must come from a single Banksman. Where rigs are fitted with remote control, these will be used instead of being operated from the cab

**Access into rig when set in travel mode**

When the rig is in travel mode, (either on the back of a low loader or on the ground) the position of handholds and steps can make it difficult to gain access. The operator shall use a short access ladder to gain access into the cab. The ladder shall extend long enough for a person to step off at the required height. The ladder shall be footed by a second person.

**Setting Out**

Setting out shall be carried out on site by coordination with the site foreman. The engineer shall set out positions on the platform, denoting each position with a setting out pin covered with a mushroom cap, and the pile reference clearly marked.

The sequence will be agreed by the site foreman and carried out prior to piling commencing. Where the engineer is required to take measurements in the vicinity of the rig or concrete pump, this shall be under guidance from the banksmen, and always greater than 5 metres away.

**Rigging & de-rigging, attaching & securing augers**

The rig will be rigged up in accordance with the manufactures instructions. (refer to operators manual)

Working at height to be avoided where possible ie by drilling down each section of auger so that securing pins can be added at ground level.

**Augers will be added / removed by either:**

**Mechanical lifting with attendant excavator.**

- Augers are lifted with a single leg drop chain secured to the lifting point on the attendant excavator. All excavator movements will be supervised by the Piling Operative.
- The area around the front of the rig shall be clear of all personnel prior to lifting augers.
- Excavators must not move when the operative is in front of the rig or within the danger zone of the excavator, **or when operatives are working at height in a cherry picker or bosuns chair**

**Lifting with auxiliary winch**

- Sections of auger shall be positioned close to the front of the rig to allow as vertical lift as possible and to prevent pendulum effect. A 6metre chain shall be used to allow the auxiliary winch to be uncoupled, without the need for work at height.

- Operatives must stand clear as the sections are lifted before moving in to guide the section onto the previous auger. Hands will be kept clear of the base of the auger to prevent trapping of hands

**Work at height whilst adding removing augers (adding / removing auger pins)**

***There shall be NO climbing of augers***

***Cherrypicker*** *– These will be operated by a competent operative wearing a work restraint harness. Plant movements will be controlled by the Banksman. The excavator will lift sections of auger & remain stationary. Excavators will not move whilst cherry pickers are adjacent to the rig. An operative will be at ground level to operate the ground controls in the event of an emergency.*

**Rig operation**

Plan work schedules so that rigs are not tracking over, or augering down close to freshly completed piles

A Banksman must be in attendance with the rig driver when operating or moving the rig.

Throughout the piling process a minimum 10metre exclusion zone around the rig will be safeguarded by physical barrier or policed by the Banksman to prevent access by other contractors. The piling area shall be dedicated to piling personnel; with other contractors excluded without permission to enter

Guarding fitted to rigs must remain in place throughout the piling process. Where piling cannot be completed with guarding in place, work will stop & further instruction sought from the Contracts Manager. Document any amendments.

The piling rig will be tracked into position under the supervision of the Banksman, & the mast and auger plumbed vertical prior to drilling. Operative to check above head height on the gates, auger flight and cleaner for potentially loose materials which could fall whilst the bung is being inserted.

Any movements of the rig or auger must be done with the operative clear of the machine. no one should approach the area immediately in front of the augers to insert the cap until the rig is stationary and the augers have been lifted

The flight auger will then bore into the ground to the required design depth.

As concrete is pumped into the pile position all personnel will maintain 5 **metres** clearance around the front of the rig to prevent injury from falling spoil being cleared by the auger cleaner. The rig driver is responsible for making sure that no spoil that could cause injury rides up the auger beyond the auger cleaner.

A 5metre exclusion zone for all non-piling related staff should be in place around the full length of the concrete hose. No one should be stood over, or step over a hose during pumping.

On completion the rig will track off the pile position under the supervision of the Banksman & the excavator will clear the spoil and concrete overbreak. The top of the concrete checked for contamination.

Operatives must not stand underneath buckets. Plastic protective caps will be placed on the tops of the reinforcing to aid visibility & prevent injury.

The rig will then move to the next pile position. This should be a sufficient distance away so as not to disturb recently formed piles.

Any platform disturbances will need to be reinstated correctly by the main contractor to the original specification including any reinforcing membranes and the maintenance sheet of the Working Platform Certificate signed off

If an interruption to piling occurs and the auger needs to be removed, make sure that the auger is removed by back-screwing slowly to leave as much spoil within the bore as possible and minimise disturbance of surrounding ground. Do not lift augers directly out of the ground.

Check the condition of the piling mat and make sure that the attendant excavator has not reduced the thickness whilst clearing up.

The crew shall maintain good housekeeping at all times to reduce slip/trip hazards.

Waste materials will be kept to a minimum & disposed of in accordance with the site's waste management plan.

Fuels will be stored in double-skin fuel bowsers or jerry cans at a designated point agreed by the Main Contractor

**<u>Concreting</u>**

Refer to VE Work Instruction for concrete pumping

The concrete plant will be set up on a suitable platform

a) With a crush ramp constructed leading to the pump & holding drum in position (refer to Ramp Drawing SD4-cb/001) Demarcation will be erected to identify the ramp edges
b) Without a ramp using a drum fitted with change-over valves.

Concrete hoses will be positioned or buried to prevent damage from site vehicles. All sections will be coupled and secured with clamps & split pins. Additionally, whip-checks will be used on hose joints that are off ground.

Hoses will be moved around site using a short leg chain or strop on the excavator lift point. Hoses will not be lifted in excavator buckets.

The concrete wagon will be directed to the concrete plant under supervision of the Banksman or Pumpman. A suitable washout area agreed/provided by the main contractor will be used by concrete delivery wagons to prevent ground contamination.

**Preparation & installation of reinforcing**

*Reinforcement cages shall be:*

- *Produced on site will be constructed on fabrication trestles by CSCS trained personnel, working within a fabrication area on the piling mat. Subcontract steelfixers will be required to work to our risk assessments.*

Reinforcement will be lifted by the attendant excavator or crane. The weight of reinforcement carried by an excavator shall not exceed 1000Kg. A separate Lift Plan shall be produced where a crane is deployed.

Chains of sufficient capacity will be attached to the excavator's specified lifting eye on the dipper arm by means of a shackle. Lifting accessories must not be wrapped around excavator buckets. Cages shall be transported around site horizontally on two leg chains.

Tag lines will be used where necessary

Chains will be securely attached to the reinforcement cage at the designated lifting point, and lifted and placed into the pile. Cages without lifting points will be lifted with the chain or strop choked around the rebar and the helical, or link on the cage.

Operative installing cage shall position themselves clear of the excavator bucket. Never stand beneath a raised bucket.

Operatives who do not hold a Slinger/Signaller card must not sling any loads unless under the direct supervision of a competent Slinger/Signaller.

**Cleaning out hoses & clearing blockages**

The cleaning out of hoses & clearing blockages will be carried out in accordance with the **Company Standard for Pumping Concrete.**

The pipeline must be considered to be pressurised during the cleaning process and no couplings should be loosened or removed unless the pressure in the pipeline has been released and this has been confirmed by the concrete pump operator.

All non-piling personnel will be cleared from the area.

The auger will be bored into the ground at a position agreed by the main contractor or housed in a blow out box in order to contain concrete & washings.

The wash out adaptor will be fitted with a pressure relief valve & be in good working order. Make sure the blow out valve is not directed at anyone, including yourself. Whip checks will be fitted to airlines. Air will always be introduced in a controlled manner.

All equipment will be washed down with the pressure washer taking due care not to spray water/washings onto other personnel/property.

**If a blockage occurs the pump operator stops pumping immediately.** Instruct personnel to move to a safe position (minimum 10 metres) before opening any joints. **This is to be policed by a competent Banksman.** The pipeline must be treated as being pressurised at all times.

**A full face visor must be worn.** The Foreman must make sure that no one, under any circumstances, attempts to open the pipeline under pressure.

**Compressed air should only be used as a last resort when clearing blockages**.

**On site fabrication of augers etc**

On site fabrication of augers etc shall be carried out in a separate area free from combustible materials. The area shall be surrounded by screens to protect others from arc-eye etc

Gas cylinders shall be stored securely upright to prevent damage/accidentally being knocked over.

The fabricator shall wear the correct PPE: full face shield, long sleeve flame retardant overalls, leather gauntlets, safety boots and respiratory protection when required.

At least 1 no. 2kg extinguisher in proper working order must be kept in the immediate area of the work and used immediately smoke or smouldering or flames are detected.

The work area must be inspected approximately 60 minutes after the completion of work and immediate steps taken to extinguish any smouldering or flames

**Security**

Foreman will make sure that adequate measures are taken to prevent the theft or unauthorised use of equipment/materials. This will include locking away all tools in the van or lock up, removing keys from plant & equipment where fitted, when not in use and left unattended & using cab guards if fitted.

**Leaving site**

The work area shall be left in a clean & tidy manner

The Foreman will make sure that the rig is configured for transport in accordance with the manufacturer's instructions, making sure all securing bolts & pins are correctly fitted and that the rig is safe to transport.

All excessive spoil must be cleaned off the rig, augers and associated plant.

The Foreman shall make sure his Foreman's Completion Form is signed off by the main contractor before leaving site.

**Communication and liaison**

*(Other contractors, home owners, neighbours, Local Authority, Highways Authority, Statutory Bodies)*

Van Elle site operations will be under the full-time supervision of a competent and experienced Foreman who has completed Supervisor Training (NVQ3 / SSSTS). The Site Foreman for this project will be identified in due course upon specific request.

The Foreman will be responsible for daily routine operation; preparation and submission of all daily records; receiving and acting upon formal site instructions; and reporting site conditions which may require variations to this method statement.

The Foreman will report directly to the Contracts Manager / Director on a regular routine basis or on specific instances when necessary.

The Divisional Director responsible for this project is Malcolm O'Sullivan.

Site safety tours are carried out at regular intervals by our Safety Dept and Contract Management personnel

**Emergency plans**

*(Contact phone number, fire plans, accident/injury plan, defect/sub-standard condition reporting*.

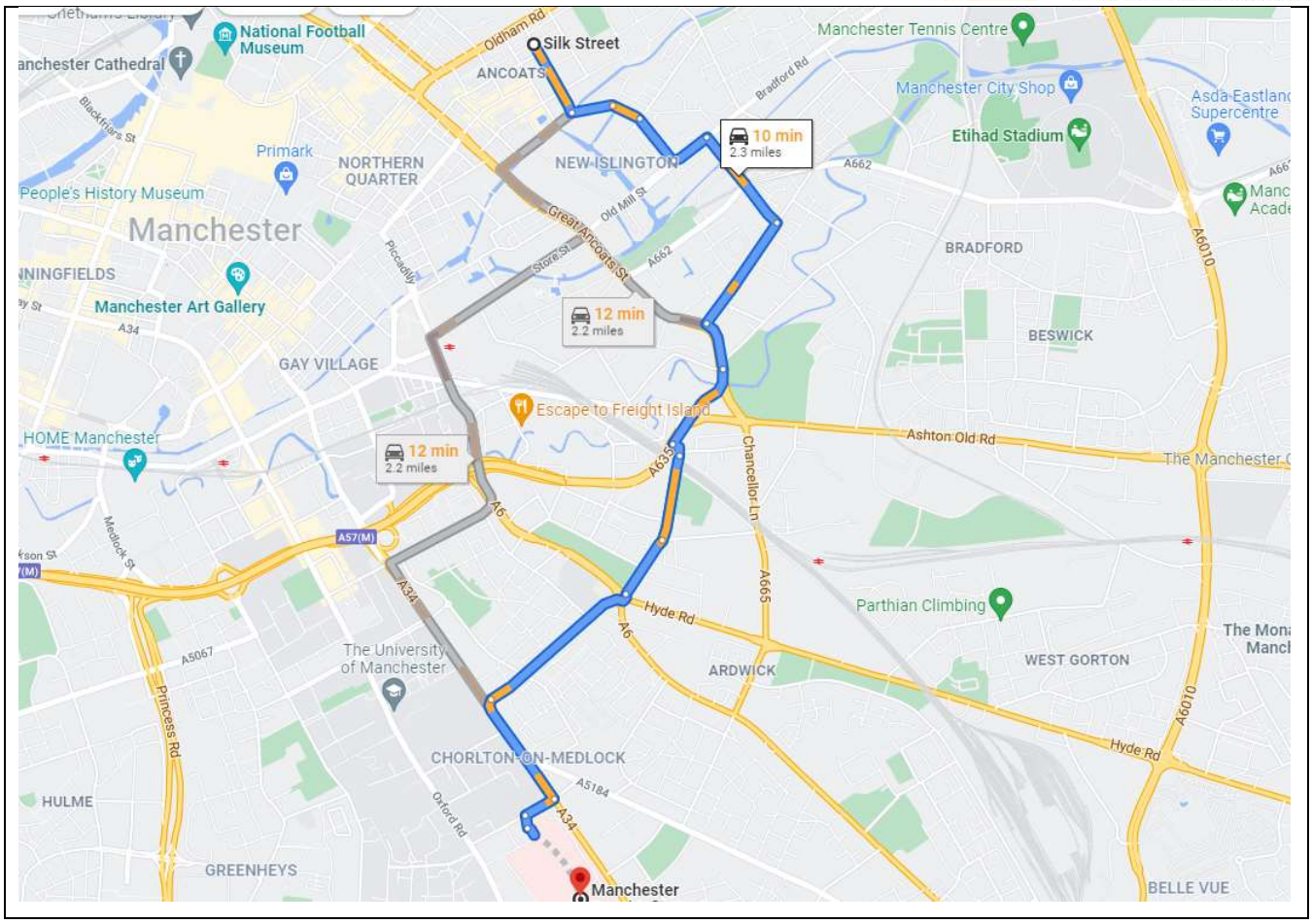
Main contractor will induct all site operatives into the site specific emergency arrangements.

Van Elle crews are equipped with a number of 2kg dry powder extinguishers and first aid provisions to complement the main contractor's arrangements.

Emergency First Aid & Fire Awareness training has been completed by the crew.

Spill kits will be provided and our crews instructed in their use.

All accidents & near misses must be reported directly to the Van **Elle HSQE Dept. on 01773 304065** and the Main contractors site manager




**SERVICE STRIKES**

**Electric** - Switch machine off & evacuate all personnel on the ground. The rig operator must remain in the rig. Do not attempt to disengage the cable from the auger. Do not touch exposed cables.

**Gas -** Switch all machinery off & evacuate all personnel to safe distance. Extinguish all naked flames. No smoking. Gas emergency number is 0800 111 999

**SPILLS**

Eliminate sources of ignition. Contain spillage in booms or sand or absorbents. All contaminated items & oil must be returned to your office/depot & be disposed of at an authorised disposal facility.

**Mechanical / structural failure that puts persons at risk**

In the event of a failure, stop all operations and if possible bring the machine to a safe condition. Isolate the machine (eg key out) and if possible, set up an exclusion zone.

**MEWP Rescue Plan**

LONE WORKING SHALL NEVER BE CARRIED OUT. THERE MUST ALWAYS BE A SECOND AUTHORISED PERSON AT GROUND LEVEL THAT IS FAMILIAR WITH THE MEWP'S OPERATIONS

A separate briefing on this emergency plan shall be carried out to ensure that a crew member at ground level can take control of the MEWP.

| Emergency Situation | Proposed Action |
|---|---|
| Failure of basket control functions while elevated | Operator will utilise the auxiliary controls from the platform to lower the boom back down to safety |
| Failure of basket auxiliary controls | Operative at ground level to use the normal ground controls |

| | |
|---|---|
| Operator in basket is incapacitated | Operative at ground level to use the normal ground controls |
| Failure of normal ground controls | Operative at ground level to use the emergency auxiliary controls |

**Suspension Trauma**

The risk from Suspension Trauma is minimal due to the operative being in a seated position in the Bosuns chair rather than being suspended in a harness. In the event of the operative becoming incapacitated, the bosuns chair is lowered to the ground by the rig operator. In the event of a mechanical breakdown, the operative shall remain in the bosuns chair if the breakdown can be rectified. The operative may exit the chair & climb down to safety connected to the fall arrestor block.

A Person suspended upright in a harness should work lower body muscles in order to pump blood back up to the heart. Lift legs as high as possible and head as close to the horizontal as possible & frequently push down vigorously with legs to assist circulation. Push against any available footholds to raise body and minimise the body weight.

RESCUERS SHOULD notify emergency services advise of potential suspension trauma. If the suspended person has lost consciousness do not move them to a horizontal position too rapidly. Take 30-40 minutes to move them from kneeling to sitting before placing them in a horizontal position in order that the heart can re-adjust to the increase in blood flow. NEVER LAY THEM FLAT! Treat all fall situations as medical emergencies unless rescue is almost immediate.

| RISK ASSESSMENT | | | | |
|---|---|---|---|---|
| **Persons Affected: Smartfoot Crew, other contractors on site, members of the public** | | | | |
| **Significant hazards** | **Initial risk** | **Control Measures** | **Residual risk** | **Responsibility** |
| Site wide risks | Medium | • Site visit by contracts.<br>• Site induction.<br>• Mandatory PPE at all times – safety helmet, high visibility clothing, protective footwear, eye protection, gloves | Low | All |
| Contact with underground services | High | Permit to Work (SET16) to be signed by the Clients senior representative on site or by a senior manager employed by Van Elle prior to any drilling work commencing. In accordance with our Permit to Work System, if for any reason the following cannot be achieved, the office will be notified before work commences.<br>• Drawings shall be available on site for utility providers<br>• The working area and 5 m surrounding the working area has been scanned with Cable Avoidance Tool used by a competent person<br>• Any services within the working area and 5 m surrounding have been exposed and their location marked clearly across the whole of the working area<br>• Rigs must not be operated within 1000mm of a service (15metres for gas unless client has contacted the service provider and specific instructions issued **in writing**)<br>• Underground Services will always be assumed to be live | Low | All |
| Working platform<br>• Overturning rig or machinery due to poor design, poor installation & maintenance, Removal of obstructions | High | • Qualify working platform requirements and responsibilities prior to work commencing.<br>• Maintenance of working platform in accordance with the contractual requirements throughout the contract.<br>• Correct reinstatement of platform disturbances to the original specification.<br>• VE Foreman not to enter on to piling platform until completed. Foreman to monitor during our operations & report to Main Contractor / VE Contracts Manager<br>• **Any area of a piling platform that has been disturbed will require an additional Working Platform Certificate to be signed off by the Principal Contractor** | Low | Contracts Manager<br>Main Contractor<br>Foreman |
| Rig overturning due to underground collapse / funnelling of non-cohesive or granular materials | High | • Use S.I information & previous experience of working in particular areas to establish whether there is an increased risk of underground collapse.<br>• Prevent rigs tracking over, or drilling down close to fresh piles. Do not leave boreholes open. Avoid repeatedly drilling down and removing the auger from an open bore.<br>• Any interruption to the drilling process (eg blockage, obstruction etc) ensure auger is removed by back-screwing slowly to leave as much spoil within the bore as possible and minimise disturbance of surrounding ground. Do not lift augers directly out of the ground. Checks on platform thickness to make sure it hasn't been reduced. | Low | Contracts Manager<br>Foreman |
| Plant & vehicle movements<br>• Obstruction of footpaths at site access and egress points;<br>• Other road / site traffic movements,<br>• Collision with surrounding structures or plant/equipment during rig movements | High | • Access routes for lorries will be agreed with the Main Contractor before work commences | Low | Contracts |
| | | • Site speed restrictions will be adhered to<br>• Consideration for room required for manoeuvring the machine. Check for obvious hazards such as soft ground, narrow gaps, limited head-room, gradients and excavations | | Driver / Machine operator |
| | | • All reversing vehicles & rig/plant movements will be directed by a Banksman | | Banksman |

| | | | | |
|---|---|---|---|---|
| Attendant Crane | High | • Refer to separate lift plan | Low | |
| **Unloading piling rigs**<br>• Damage to road surfaces / pavements<br>• Plant or equipment falling from transport vehicle<br>• Slips, trips falls<br>•<br><br>Environmental conditions - poor visibility, heavy rain, high winds, snow & ice | High | • At pre-start meetings, identify what provisions/requirements the MC has, such as dedicated unloading areas, platforms &/or air mats that must be used | Low | Contracts |
| | | • Establish suitable safety zone. Warn people not involved in the mobilisation to stay clear. Safety barriers may need to be used to segregate the lift from other activities and/or pedestrians. Vehicle warning beacons will be used in public areas<br>• Load/unload on level and stable ground.<br>• Check security of loads & agree sequence of unloading.<br>• All loading & unloading will be conducted under the direction of a trained Slinger/Signaller (CPCS)<br>• Protection of roadways and footpaths when rig/plant equipment is being loaded/unloaded on the highway. | | Foreman |
| | | • Trailer posts or kingposts used down the trailer edge to prevent items rolling off. Items that are liable to roll will also be chocked if they do not already have them.<br>• Inspect trailer bed for signs of damage or spills to ensure it is safe to walk on. Report missing or damaged equipment / boards on vehicles & trailers.<br>• Track mats will be used where there is steel on steel e.g. steel tracks on a steel trailer bed, this will prevent the rig/plant equipment from sliding off the side of the low loader | | Driver |
| | | • No one will be allowed to stand at the side of the vehicle being loaded/unloaded including the slinger/signaller.<br>• The ramp (if fitted) will be used to access the vehicle or trailer. (Access will not be allowed via the side bars) Climbing up the sides of trailers is not permitted. No-one should ever jump onto or off a vehicle – always use steps & handholds. | | All Staff |
| **Fall from Height.**<br>• Whilst accessing trailer.<br>• Struck by moving or falling loads | High | • Where possible, avoid work at height by using tele-handlers or pre-slinging of loads.<br>• Prevent falls by using edge protection fitted to the sides of trailers. Edge protection to consist of top and intermediate handrails.<br>• If edge protection is not fitted there must be other provisions such as soft landing systems to minimise injury from falls | Low | Foreman |
| | | • Safe access and egress in the form of a proprietary ladder or step system that forms part of the lorry, or a properly secured ladder. Inspect ladders for signs of damage & be free from mud or grease. Extend ladders past the trailer bed to enable you to step off whilst still having 3 points of contact<br>• Where possible, the physical unloading should take place without anybody being on the vehicle. When this is unavoidable:<br>• Keep the number of persons on the lorry to a minimum - only those who need access to the vehicle for unloading should be allowed onto it.<br>• Ensure that the person on the deck/trailer bed is well out of the way when the load is being lifted.<br>• The initial instruction to lift the load must be given by the person on the deck/trailer bed | | All Staff |
| **Lorry mounted crane operations**<br>• Overturning of the crane may occur through the following;<br>o Ground conditions.<br>o Tampering with safety devices. | High | • All crane movements & lifts will be completed under the direction of a Banksman | Low | Foreman |
| | | • The crane, lifting accessories and all safety devices to be inspected daily & the daily check sheet completed. All lifting equipment is subject to a thorough examinations/testing in accordance with LOLER 1998.<br>• Fully extended outriggers will be used at all times. Outriggers must not be positioned where the ground could collapse e.g. on soft ground, at the edge of excavations, on or over manholes, etc.<br>• Outrigger mats must be placed under outriggers on all lifts. Scaffold boards or other off-cuts of wood found on site are not acceptable alternatives. | | Crane Operator |

| | | | | |
|---|---|---|---|---|
| ○ Lifting of loads above the Safe Working Limit.<br>• Collision with surrounding structure<br>• Failure of lifting equipment<br>• Damage or injury to passing vehicles & pedestrians by the position of outriggers, crane or load movements or when visibility is restricted | | • Where a HIAB has factory-fitted remote controls, these must be used at all times to allow the operator to stand in a position of safety<br>• A test lift to be conducted to make sure the lift can be carried out safely e.g. to check levels, outriggers don't sink, load is stable etc.<br>• No loads will be left suspended.<br>• Lifting points on loads shall be checked for signs of damage prior to being lifted.<br>• Only recognised slinging techniques will be used; Tag lines will be used when necessary. | | |
| | | • Crane operator & Slinger signaller to ensure they are aware of the safe working load before the lift commences. Do not overload SWL of crane or lifting accessories<br>• Stand clear of side of the vehicle being loaded/unloaded including the slinger/signaller<br>• Do not allow the load to swing over or into live traffic lanes or over people<br>• Lifting equipment will not be used for towing or pulling | | All Staff |
| Rigging & de rigging<br>• Trapping, crushing or significant injury as a result of accidental operation of drill head or mast controls or uncontrolled movement of auger<br>• Fall from height<br>• Falling tools & materials<br>• Failure of auxiliary winch during operation<br>• Suspension Trauma<br>• Falls from height & falling objects<br>• Fall from height whilst accessing rig in travel mode | High | • Trained & competent operatives to be deployed.<br>• Rig must have a current 6-monthly Thorough Examination. Certificate must be available on site for inspection. | Low | Contracts |
| | | • All non-piling personnel to be kept clear during rigging operations. Exclusion zone to be put in place beforehand.<br>• Where possible, working at height will be avoided by drilling down<br>• Attending 360 excavator to be used to lift auger sections. The Safe Working Load of the excavator will not be exceeded. | | Foreman |
| | | • Rig controls will only be activated following clear audible instruction from Slinger/Signaller. Where possible, all rig controls to be isolated during work<br>• Safety Devices will not be by-passed, nor be relied upon by the operator.<br>• The operator shall use a short access ladder to gain access into the cab. Climb maintaining three points of contact. The ladder shall extend past the step off position and be footed by a second person.<br>• Ladder will be inspected before use, looking for damage to stiles, rungs, & feet. Make sure it is free from oil, grease mud etc | | Rig Operator |
| | | • Auger to be held in the gate and remain attached to the excavator whilst the person in Bosun's Chair or MEWP is raised into position in a controlled manner, where he will knock in the pins. Top auger to be held in with split pins<br>• The excavator will remain in position until the person in the Bosun's Chair or MEWP has descended.<br>• Augers will not be raised or lowered when the Bosun's Chair is operating.<br>• Auxiliary winch must not be used to lift anything else at the same time as a person in the Bosun's Chair | | Slinger Signaller |
| | | • Inspect fall arrest equipment / safety harness before use and used whilst seated in the Bosun's chair. All tools and equipment to be stored safely while climbing and descending<br>• Bosun's Chair is designed such that the risk from falling from height is eliminated; the chair is supported between the legs so that the operative cannot fall sideways or backwards<br>• The risk from Suspension Trauma is minimal due to the operative being in a seated position in the Bosuns chair rather than being suspended in a harness | | Person Climbing |
| Piling Rigs operation<br>• Clearing spoil | High | • Prevent spoil & concrete going beyond the boundary of the site. If public footpaths or parking areas are adjacent to the piling area then additional precautions (watching/divisions/protection) should be employed | Low | Main contractor |

| | | | | |
|---|---|---|---|---|
| • Failure of auxiliary winch during operation<br>• Noise<br>• Hit by flying or falling materials<br>• Slips, trips & falls<br>• Projecting reinforcements<br>• Instability when lifting & tracking<br>• Entanglement with rotating auger<br>• Contact /entanglement with moving parts of rig (eg track)<br>• Edges of platforms, excavations<br>• Open Bores | | • Rig must have a current Thorough Examination. Certificate must be available on site.<br>• Rig to be inspected on a daily basis before use and during use by the rig operator. Record of inspection to be maintained.<br>• Trained & competent operators of piling rig. (CPCS) Trainees can operate rig under direct supervision of experienced rig operator.<br>• All rig movements will be completed under the direction of a trained and competent slinger/signaller.(eg CPCS)<br>• Rigs to be fitted with guards to prevent access to the rotating auger. Guards to extend from 500mm from ground level to 2m. Where site specific risk assessment has determined that guards are not practicable a 2metre exclusion zone will be established around the drill head using lightweight barriers.<br>• Rig will only travel distances with the auger suspended if the gates have been securely closed & the mast tilted back as per manufacturers instructions.<br>• Tracks must be at full width when rig is working<br>• Mast foot to be grounded during lifting<br>• Rig will not be used on gradients steeper than 5 degrees. Ramps should be 1:10 & of solid construction. The width of the ramps should be sufficient for the rig to track safely upon.<br>• Lifting equipment must not be used for towing or pulling<br>• Noise - Operatives to wear ear protection when noise levels are above 85dB(A). Mandatory signs to be displayed.<br>• Safety devices must not be by-passed, but will not be relied upon by the operator.<br>• Prevent spoil travelling up the auger above head height.<br>• Use correct access (handles and steps) when entering and exiting the cab.<br>• Personnel will not mount or dismount from the machine/rig whilst moving.<br>• Be aware of excavations adjacent to the platform. Ensure they have been protected / secured before approaching with the rig<br>• Personnel on ground to keep clear of rig whilst moving; tools & materials not to be stored under tracks on track base<br>• All open boreholes must be covered with suitably strong material or barriered off | | Foreman |
| | | • All steel should be placed to ground level whenever possible to minimise trip & piercing hazards. Protect all exposed bars above platform level with protective caps e.g. mushroom caps.<br>• Piling area shall be guarded & policed by the Banksman to ensure that third parties do not injure themselves on freshly completed piles. If necessary, spray pile tops with marker paint upon completion<br>• All non-piling personnel to be kept at least 10metres away from the rig during operations. Ensure area is clear before activation of the auger<br>• All personnel should be away from the front of the rig when spoil is being removed by the excavator<br>• Wire rope/hoist hook will be kept away from the auger when not in use. | | Slinger Signaller |
| Concrete Pumping (General)<br>• Burns & irritation from contact with wet concrete<br>• Entanglement in moving parts of plant | High | • Inspect all plant & concrete hoses before being used. All damaged equipment shall be returned to the Plant Dept. for repair. Hoses should be moved wherever possible by mechanical means using lifting straps & not with an excavator bucket<br>• All machinery will be adequately guarded and where necessary appropriate safety devices will be fitted e.g. emergency stop switches, trip wires etc.<br>• The site will be kept clear of trip hazards e.g. concrete hoses kept tidy and away from pedestrian areas | Low | Foreman |

| | | | | |
|---|---|---|---|---|
| • Fall from height when operating mixer drum<br>• Manual handling<br>• Hit by moving hose<br>Slips, Trips and Falls | | • Concrete drums shall have appropriate length access ladder maintained in good order leading to work platform surrounded by barriers | | |
| | | • Impervious PPE to be worn i.e. gloves, footwear, leggings (Shorts will not be allowed) and arms and legs will be covered.<br>• Hoses will be cleaned out thoroughly after use. | | Pump Operator |
| Hose blockages<br>• Hose whipping<br>• Strike by high pressure water/air/concrete | High | Prevent blockages by<br>• Use of smaller size aggregates for last load of concrete for the day.<br>• Use of steel pipe to reduce friction and allow concrete to flow easier<br>• The length of hose between the pump and rig to be kept as short as possible.<br>• Slump testing of all loads to determine volume of water that can be added to maintain a pumpable mix<br>Dealing with blockages correctly<br>• Stop pumping immediately & release pressure inside the hose as much as possible<br>• Operative dealing with blockages to wear goggles or full face visor<br>• Treat system as though it is pressurised until confirmed otherwise. Never manually open or attempt to open the hose under pressure.<br>• Make sure the blow out valve is not directed at anyone, including yourself.<br>• Use gravity to empty as much concrete as possible from the rig & hose.<br>• Use mechanical means to free the blockage (eg with excavator bucket or auxiliary winch).<br>• Protect people against uncontrolled hoses & ejected concrete with minimum 10metre exclusion zone; Use boarding or the bucket of the excavator to shield against ejected concrete & strap or chain hose to rig or excavator bucket to prevent whipping<br>• Compressed air should only be used as a last resort when clearing blockages. | Medium | Foreman / Pump operator |
| Cleaning out Hoses<br>• Hose whipping<br>• Strike by high pressure water/air/concrete | High | • Wash out adaptor to be fitted with a pressure relief valve and in good working order<br>• Pump as much concrete as possible into a specified area.<br>• Secure catch basket to the free end of the hose to catch the sponge ball.<br>• Pump water through the hose until it is backing up before inserting the ball<br>• Confirm all pressure has been released BEFORE opening lines | Low | Pump operator |
| Hose bursts<br>• Injury /property damage from material ejected at high pressure<br>• Burns & irritation from contact with wet concrete | High | • All hoses should be date-stamped<br>• Rig steels & swan neck to be examined during servicing for wear/thinning of walls<br>• In high risk areas replace rubber hoses with steel pipes; run the concrete hose through a plastic sleeve i.e. Heave Sleeve (Any concrete ejected during a burst would then be contained.) Position the concrete pump outlet channel away from high risk areas; Use additional bunding to contain spillages & screens to protect from ejected material; Use higher site fencing and if Herras type this must be covered | Low | Contracts / Foreman |
| | | • Ensure that concrete hoses don't get kinked and will protect them against other site vehicles Daily inspection by crew. Make sure the hoses are in good condition. Check daily for abrasions, deep cuts, damaged steel reinforcement. Also check end collars, couplings and rubber seals for wear.<br>• All hoses will be clamped & pinned. Hoses connected to the rig above head height will have secondary protection (whip checks). Seals to be in good condition | | Pump Operator |
| Attendant excavator - | High | • Machine to be operated by trained & competent drivers (eg CPCS) Third party drivers must be inducted into the Van Elle procedures & SET6 completed | Low | Foreman |

| | | | | |
|---|---|---|---|---|
| Lifting operations: unloading & setting up concrete pump, drum & cabin, transporting cages, clearing spoil<br>• Injury due to poor condition of equipment<br>• Contact with Collision with overhead cables or surrounding structure. Collision with pedestrian & other plant<br>• Competence of operators<br>• Driver falling or being thrown from machine<br>• Machine overturning due to Unstable ground conditions, overloading when lifting, tampering with safety devices<br>• Injury from plant movements.<br>• Crushing between the excavator & surrounding structures<br>• Restricted visibility<br>• Pedestrian struck by falling object (bucket, other attachment or load) due to Failure of lifting equipment, Poor slinging, Lifting of loads above the Safe Working Limit, Poorly maintained<br>• Incorrect equipment<br>• Incorrect fitting of Quick Hitch<br>• Operation by untrained / unauthorised persons | | • Operatives who do not hold a CPCS Card Slinger/Signaller must not sling any loads unless under the direct supervision of a trained Slinger/Signaller. Use recognised slinging methods<br>• All excavator movements will be supervised by a trained and competent Slinger Signaller.<br>• Make sure no one (pedestrians/ground workers etc) enters the danger zone while the machine is in operation.<br>• Under no circumstances will the machine or lifting accessories be overloaded<br>• Use of barriers where a 600mm wide clearance cannot be maintained adjacent to surrounding structures where a person might be trapped<br>• Check lifting accessories for signs of damage/wear & that they have current 6-month thorough examination<br>• Check lifting points for signs of damage prior to being lifted. Tag lines will be used when necessary<br>• Load to be kept as low to ground as possible. long loads to be transported horizontally<br>• Loads that are not identified in the lift plan will not be lifted. Confirm that the loads do not exceed the lifting capacity of the machine | | |
| | | • Conduct pre-use checks & complete the Daily Inspection Sheet. Do not attempt to operate the machine if faults are found.<br>• Attaching & detaching of Quick Hitch devices must always follow the manufacturer's instructions. **Safety pins must always be used on semi quick hitch attachments.**<br>• Passengers must not be carried on excavators. Excavators must not be used to lift people. **Always use the seatbelt**<br>• The machine operator will make sure they know the lift capacity of the machine.<br>• Prevent unauthorised use, leave machine in a secure manner when not in use; switch off the engine & place the bucket on the ground. Keys must be removed. All loads to be removed from the hook. | | Machine operator |
| | | • Do not stand between the body & tracks of the machine<br>• Excavators may only be used as a crane if they are equipped to do so. Lifting accessories must only be shackled to a lifting eye. Do not wrap chains around the bucket. Keep loads as low to the ground as possible when tracking around site<br>• Loads will not be dragged or snatched; Loads will not be left suspended;<br>• The load will not be allowed to swing over or into live traffic lanes or over people.<br>• **Working below excavator buckets is prohibited** | | All Staff |
| Petrol cut-off saws<br>• Fire,<br>• Injury from wheel bursts & kickbacks<br>• Contact with rotating wheel or disk,<br>• Clothing/hair entanglement with moving parts,<br>• Inhalation of dust / fumes, | High | • Only authorised and trained operatives to use abrasive wheels. (trained to change abrasive disks)<br>• Inspect saw & discs for damage prior to use. Ensure operating speed is indicated.<br>• Loose clothing will not be worn by operators; Long hair to be tied back.<br>• Stand to one side of saw when cutting – do not stand in line<br>• Keep all persons clear of areas where sparks or dust is directed. Shield work area where possible; refuel at least 5 metres from cutting area<br>• Users will not use undue pressure, and will use the right disc/wheel.<br>• Additional PPE: Hearing protection, overalls, goggles, and gloves.<br>• Make sure that guards are fitted. Guards will not be removed except for maintenance purposes only | Low | All staff |

| | | | | |
|---|---|---|---|---|
| Pressure washers<br>• Direct water jet injuries<br>• Electric shock from using damaged equipment or spraying water onto live electrics<br>• Risk of being hit by ejected material<br>• General health considerations<br>• Slips & trips from wet surfaces<br>• Risk of injury from kickback during startup<br>• Noise risks | High | • Complete regular checks for signs of damage. Record on CON15.<br>• Do not use a faulty pressure washer. Report any faults that you find to your line manager.<br>• Use only hose and accessories rated for pressure higher than the pressure washers' p.s.i.<br>• If the engine does not start after two pulls, squeeze trigger of gun to relieve pump pressure. Pull starter cord slowly until resistance is felt. Then pull cord rapidly to avoid kickback and prevent hand arm injury<br>• Use of PPE – goggles, waterproof gloves & clothing, safety wellington/boots, and ear defenders when necessary i.e. noise levels 85db and above. Use RPE where necessary<br>• Do not use the following substances in the cleaner - acids, petrol, diesel or any other flammable materials, chlorine, bleach or any other corrosive compound<br>• Do not stand in front of the cleaning jet. Hands must not be placed directly in front of the nozzle. Spray will be always directed from self and others. Consider neighbouring properties and windblown spray<br>• During operation, only touch the control surfaces e.g. Trigger & insulated areas provided on the Lance. Grip gun/wand firmly with both hands. The operator must not hold onto the hose or fittings.<br>• When not in use, relieve the system pressure by shutting off the engine or electricity supply; turning off water supply, and pulling the trigger until the water stops flowing.<br>• Unplug the pressure washer before attempting to clean it. Wand/Lance or hose fittings will not be attached or removed while the system is pressurised. Never leave a pressurised unit unattended<br>• Good housekeeping is required at all times. Keep hoses tidy & away from walkways. Exclude all non Van Elle persons from the area. | Low | Operator |
| Security<br>• Unauthorised use of plant by other contractors or trespassers<br>• 3rd party damage<br>• Theft of plant, equipment and materials | Medium | • Reduce risk of theft of plant & equipment by:<br>  ○ Taking steps such as removing one wheel or fitting wheel clamps, chaining plant equipment to a fixed object; removing batteries,<br>  ○ Fitting control arm covers.<br>  ○ Locking small tools that are on hire in the property or van or secure store every night<br>• Remove keys from plant & equipment when not in use and left unattended. Hydraulic pressure to be relieved on control levers<br>• Materials will be safely stacked and stored e.g. pallets of cement stored at one level only to prevent them toppling over if kids climb on them. Diesel bowsers to be locked<br>• Where Van Elle are responsible for the site, adequate security fencing and sufficient number of construction/mandatory warning signs will be deployed | Low | All staff |
| Refuelling plant & machinery<br>• Fire & burns<br>• Irritation of skin through prolonged contact.<br>• Irritation of respiratory tract | Medium | • Engines to be switched off prior to refuelling; Re-fuel in well ventilated area.<br>• No smoking/no naked flames when refuelling; Mobile phones must not be used. Fire extinguishers to be available in vicinity. Practice good hygiene; Wear impervious gloves.<br>• Do not overfill tanks. | Low | All staff |
| MEWPS<br>• Overturning due to overreaching beyond machine limits. | High | • Selection of suitable machine for task with regards to S.W.L, required working height & outreach.<br>• Check that a maintenance certificate has been provided by the supplier.<br>• Warning signs and barriers where there is a risk of passing vehicles or pedestrians being struck by the platform or falling materials. | Low | Contracts<br>Foreman |

| | | | | |
|---|---|---|---|---|
| • Collapse or overturning of machine due to soft, muddy or uneven ground conditions, trenches, obstacles, overloading, etc<br>• Overturning due to travelling with basket raised<br>• Collision with overhead cables, pedestrians, surrounding structures, other mobile plant & equipment<br>• Falls from height & falling objects<br>• Adverse weather<br>• Misuse by unauthorised personnel.<br>• Mechanical failure / emergencies | | • Platform must have guard rails and toe boards or other suitable barriers fitted;<br>• Banksman to direct all movements where visibility is restricted.<br>• Instructions required at ground level on how to lower the platform from ground position. Lone working is not permitted. | | |
| | | • Conduct pre-use checks & complete the daily inspection sheet.<br>• Check working area for obvious hazards before starting work. (soft ground, blind corners, narrow gaps, limited head-room, steep gradients and excavations.)<br>• Work restraint harness must be worn; Exit & enter basket only when fully lowered.<br>• Set MEWP up on firm and level ground. Use stability devices or outriggers if fitted<br>• Do not overload platform with equipment or people<br>• Positioning of platform immediately alongside to allow operative to reach object without reaching/leaning over handrails.<br>• Do not use additional equipment/objects ie ladders, boxes etc to gain extra height/reach if task is beyond reach of platform.<br>• MEWPS only to be used as work platforms and not as a means of access to elevated levels or as lifting equipment<br>• Do not operate beyond maximum safe wind speed from manufacturer's documents. Inspect before use after severe weather<br>• Do not move the equipment with the platform in the raised position unless the equipment is designed to allow this to be done safely (check the manufacturer's instructions).<br>• Leave platform in a secure manner and clear of tools and equipment when not in use. | | Operator |
| Steel Fixing<br>• Slips, trips<br>• Lacerations & crush injuries Hands & legs<br>• Eye injuries due to flying tie wire; Infections in cuts<br>• Falling cages<br>• Collapse / overturning of trestles | Medium | • The work area and access routes shall be cleared of obstructions and trip hazards. Collect excess tying wire.<br>• Trestle tables to be suitably strong and placed on firm level ground; makeshift trestle tables from tied re-bar are not permitted<br>• Stack re-bar in approved laydown areas. Use barriers to segregate from other work activities<br>• Hard hats, Hi-vis clothing, Eye protection, gloves and steel toe capped boots to be worn at all times. Gloves should offer adequate protection but maintain dexterity<br>• Tails on tie wire to be bent over | Low | Steel Fixers |
| Fabrication<br>• Use of damaged equipment<br>• Injury from falling gas cylinders<br>• Flashbacks<br>• Respiratory problems from inhaling gases, dust & fumes<br>• Fire.<br>• Exposure to infra-red or UV radiation; arc eye<br>• Burns from metal splatter<br>• Poor storage<br>• Self ignition of acetylene by knocking/dropping cylinder | High | • All equipment must be inspected & maintained. Check for leaks.<br>• Damaged or defective equipment must be removed from service & reported to line manager.<br>• All cylinders must be secured upright & correctly shut off when not in use. Do not drop, roll or drag cylinders<br>• Acetylene cylinders must only be used in an upright position. - Acetylene cylinders that have been laid down must be left upright for minimum 1 hour before use to prevent liquid contents coming through regulator.<br>• When transporting gas cylinders with a fork lift truck, make sure that suitable precautions are taken to prevent them from falling— use suitable cradles, slings, clamps or other effective means<br>• Protect cylinders from being struck by other objects. Do not lift cylinders by their valves, shrouds or caps<br>• Flashback arrestors must be installed on the outlets of both regulators, and/or torch inlets. Check valves should be installed on both torch inlets and operating properly<br>• Follow the correct start up / shut down procedure. If using Acetylene, keep the pressure below 15 pounds. Purge your hoses before lighting the torch. Never light your torch with a mixture of fuel and Oxygen. After purging the line, light the torch with only the fuel gas valve only. | Low | User |

| | | | | |
|---|---|---|---|---|
| | | • Ensure adequate ventilation to reduce the risk of inhaling harmful fumes. Use air-fed respiratory protective equipment if required. Always use acetylene in a well-ventilated area. Do not take acetylene cylinders into a confined space<br>• Before applying heat, ensure that no residues of hazardous or flammable substances are on the metal; remove all flammable substances from the immediate area.<br>• Fire resisting screens around work area to protect others<br>• A suitable extinguisher must be in close proximity to the working area<br>• Never let oil or grease come into contact with cylinder<br>• All burning must stop 1 hour before end of shift<br>• Wear the appropriate protective clothing welding gauntlets, flame retardant overalls, boots Welding visor or brazier glasses<br>• Never store cylinders near open flames or electrical equipment | | |

**Task Covered:** Installation of piles using readymix concrete. Operatives will be exposed daily, and for long periods to cementitious materials.

| Hazard | Who is harmed & how? | Initial Risk | Specific Control Measures | Emergency Procedures | Residual Risk |
|---|---|---|---|---|---|
| Batched concrete & admixtures<br><br>Contains various chemicals including lime, calcium silicates and alkalis plus Soluble chromium (VI) | Inhalation can lead to developing acute rhinitis and localised irritation. Risk of chronic respiratory problems. When dry, Respirable Crystalline Silica is a risk via inhalation<br><br>Contact with skin and eyes can lead to irritation & burning due to the corrosive properties. Prolonged & repeated exposure may also lead to Irritant and allergic dermatitis developing<br><br>Ingestion – the swallowing of small amounts of concrete products and admixture is unlikely to cause any significant reaction. Larger doses may result in irritation to the gastrointestinal tract, nausea, diarrhoea & vomiting | High | Standard Working Practices<br><br>Keep exposed skin to a minimum to avoid contact – wear impervious gloves and protective clothing, including overalls with long sleeves and long trousers.<br><br>Do not allow concrete to become trapped between the skin & clothing<br><br>All concrete spills must be cleaned up | Standard First Aid measures.<br><br>Prevent entry into drains and watercourses. Allow to dry before disposing of as hardcore | Low |
| Mould Release Oil | Not classed as a health hazard however contact with eyes may cause irritation & smarting. May cause discomfort if swallowed.<br><br>Not considered to be an environmental hazard however contamination of watercourses or the land should be avoided | Medium | Standard Working Practices<br><br>Keep exposed skin to a minimum to avoid contact – wear impervious gloves<br><br>Store in well ventilated areas in suitable canisters away from naked lights and heat sources.<br><br>Use funnels when decanting liquids<br><br>Storage of containers on drip trays | Toxic fumes will evolve if involved in a fire<br><br>Only attempt to fight fires if safe to do so. Evacuate if smoke is affecting your breathing, you cannot see the way out, or the fire continues to grow<br><br>Turn leaking containers leak-side up to prevent further escape. Contain spillages using spill granules, sand or other inert absorbent. Protect drains. | Low |
| Pump Primer | Slight irritant properties towards the eyes, & may lead to redness & stinging.<br><br>Swallowing of large amounts may result in localised burning | Medium | Standard Working Practices<br><br>Keep exposed skin to a minimum to avoid contact – wear impervious gloves<br><br>Use powder mixes in well ventilated areas | Standard First Aid measures | Low |

**Task Covered:** Various tasks related to the on site inspection and basic maintenance of equipment. Includes refuelling, topping up fluids etc . Operatives will be exposed infrequently and for short periods

| Hazard | Who is harmed & how? | Initial Risk | Specific Control Measures | Emergency Procedures | Residual Risk |
|---|---|---|---|---|---|
| Engine Oil | Fitters can suffer skin irritation from contact with engine oil.<br><br>(long-term repeated) exposure to used oil may lead to the production of skin tumours. | Med | • Standard Working Practices<br>• Do not perform oil change on excessively hot oil<br>• Do not breathe in oil mist from hot oil – Ensure good ventilation throughout oil change;<br>• No contaminated materials (oily rags) in pockets | Turn leaking containers leak-side up to prevent further escape. Contain spillages using spill granules, sand or other inert absorbent. Protect | Low |

| | | | | | |
|---|---|---|---|---|---|
| | Hot oil may produce irritant fumes | | • Storage on drip trays / bunded areas | drains. Once dry, sweep up and transfer to suitable, labelled containers for disposal. | |
| Hydraulic Oil | Not classified as hazardous however can become highly toxic if oil becomes injected into the body<br>In common with most mineral oils, prolonged and repeated skin contact may cause dermatitis. | Med | • Standard Working Practices<br>• Prevention of injection injuries in accordance with hydraulic safety work instruction<br>• Avoid generating & breathing in mists<br>• No contaminated materials (oily rags) in pockets<br>• Storage on drip trays / bunded areas | **Seek immediate medical assistance if hydraulic oil is injected into the body**<br><br>Turn leaking containers leak-side up to prevent further escape. Contain spillages using spill granules, sand or other inert absorbent. Protect drains. Once dry, sweep up and transfer to suitable, labelled containers for disposal. | Low |
| Grease | Continuous & prolonged exposure to grease may cause skin irritation | Med | • Standard Working Practices | Standard First Aid measures. | Low |
| Petrol | Operator may be harmed if vapours are inhaled. May cause irritation to the respiratory system.<br>Prolonged exposure to vapours may cause drowsiness and narcosis.<br>May cause skin irritation and inflammation; prolonged or repeated contact may result in dermatitis. May also cause cancer. | Med | • Standard Working Practices<br>• Use in well ventilated areas<br>• Keep chemicals away from heat sources, open flames & other sources of ignition. | **Ingestion of petrol can lead to unconsciousness**. If this occurs, place injured person in recovery position and protect airway. Seek immediate medical attention<br><br>Turn leaking containers leak-side up to prevent further escape. Use foam extinguisher to smother spills to prevent ignition | Low |
| Diesel and exhaust fumes | Irritation of your eyes & respiratory tract; headaches and convulsions.<br>Repeated contact with your skin can cause de-fatting & in some cases, dermatitis.<br>Irritation of the mucous membranes, throat and stomach, nausea and vomiting. Liver and kidney damage is possible<br>Continuous exposure to exhaust fumes can cause long term, or chronic, respiratory ill health including cancer. Exhaust fumes in poorly ventilated areas can lead to Carbon Monoxide poisoning | High | Turn off engines when not required;<br>All re-fuelling to be carried out in well-ventilated areas- preferably outdoors and away from sources of ignition.<br>Store in well ventilated areas away from naked lights & heat sources.<br>Store in bunded bowsers or jerry cans. Drums must be stored upright in a bunded area. Do not allow to enter water supplies or soil.<br>For smaller rigs, locate powerpacks in well ventilated areas. Use mechanical ventilation &/or tail-pipe filters when working in poorly ventilated areas | **Standard first aid measures**<br>Turn leaking containers leak-side up to prevent further escape. Contain spillages using spill granules, sand or other inert absorbent. Protect drains. Once dry, sweep up and transfer to suitable, labelled containers for disposal<br>**CO Poisoning – don't put yourself at risk – make sure the area is ventilated before you enter. get the casualty to fresh air before taking to casualty** | Low |
| Linemarker Spray Paints | Can cause asphyxiation, irritating to the respiratory system, skin and eyes when used in areas with poor ventilation.<br>Repeated & prolonged exposure to the propellant can result in the de-fatting of the skin. | Med | • Standard Working Practices<br>• **Pressurised containers -** Do not use or store in close proximity to sources of ignition.<br>• Wear gloves to prevent paint coming into contact with skin.<br>• Ensure good ventilation. Do not inhale aerosol mist | **Burning produces irritating, toxic and obnoxious fumes**<br>Only attempt to fight fires if safe to do so. Evacuate if smoke is affecting your breathing, you cannot see the way out, or the fire continues to grow | Low |

| | |
|---|---|
| Standard Working Practices | Good housekeeping to be maintained in all work areas and welfare facilities;<br>Use the welfare provided to dry clothes and change clothes regularly<br>Change out of heavily soiled / contaminated clothing and wash hands & face before eating or drinking |

| | |
|---|---|
| | Regularly wash the skin with warm water and soap, and dry the skin afterwards.<br>Refrain from touching face with soiled hands.<br>Do not eat or smoke in areas where there is likely to be exposure;<br>Cuts or wounds must be covered<br>Apply work creams to exposed skin regularly<br>Wear long-sleeved protective clothing;<br>Wearing impervious vinyl or nitrile gloves when handling chemicals or contaminated equipment<br>Eye protection must be worn at all times<br>Always store in original containers that are correctly labelled.<br>FOLLOW MANUFACTURERS INSTRUCTIONS |
| Instruction Information Training & Supervision | All operatives briefed on routes of entry, skin checks and health risks of working with hazardous substances as part of 1-day Safety Awareness training<br>Foremen completed 2-day SSSTS course which covers COSHH<br>All staff briefed on correct fitting of respiratory protection as part of fit test programme<br>Regular toolbox talks delivered on occupational health issues delivered by foreman fitter<br>Copies of Safety Data Sheets kept on file. Instruction given that if a new product is being used, the COSHH assessment will need to be reviewed<br>Regular manager visits carried put to ensure controls are being implemented<br>Instruction given that if the product is being used in a manner different from the way specified, a separate risk assessment will be needed |
| Exposure limits | Cement has a Workplace Exposure Limits (WEL's) of 10mg/m3 total inhalable dust and 4mg/m3 respirable dust (8 hour TWA)<br>Exposure limits are not exceeded during normal operating conditions & due to the quantities involved at any one time it is unlikely that the limits be exceeded in the event of an accidental release.<br>Previous monitoring of airborne dust identified levels of dust that were significant but were below their respective limits |
| Health Surveillance | Health screening with occupational nurse covers dermatitis checks & spirometry.<br>Safety Awareness training includes instruction to carry out self-checking |
| Thorough Examination & Testing | Not required. No LEV in operation |
| Emergency Provisions | Emergency First aid trained personnel present; Eye wash & first aid facilities shall be kept in an easily accessible place.<br>Fire extinguishers (dry powder) maintained and readily accessible<br>Spill granules and absorbent pads readily accessible. Use correct waste stream |
| Standard First Aid | In all cases should exposure be excessive or symptoms develop seek medical attention. |
| | Ingestion - wash mouth / nose out with water, and give patient plenty of water to drink. DO NOT induce vomiting. Seek medical attention |
| | Skin – Remove contaminated clothing as soon as possible and wash with soap and water. If irritation, pain or other skin conditions occur, seek medical advice |
| | Eyes – Do not rub eyes, remove any contact lenses. Hold the eyes open and wash with emergency eye wash solution (if available) or clean water for up to 15 minutes. Seek medical attention |

| | |
|---|---|
| | Inhalation - Remove casualty from exposure ensuring your own safety whilst doing so. If possible, remove any excess substances from the nasal passages. Keep casualty warm & at rest. Seek medical attention |

VAN ELLE
TOTAL FOUNDATION SOLUTIONS

## Manual Handling

| **Task Description:** General manual handling activities during piling works | | |
|---|---|---|
| Task involves the offloading & moving equipment and materials around site. Includes concrete hoses, sections of auger, reinforcing cages, jet washer, bags of auger bungs, tools etc | Duration of task | |
| | Less than 2 hours | 4 to 8 hours |
| | 2 to less than 4 hours | Over 8 hours |

| Load considerations | | | | Notes | Control measures |
|---|---|---|---|---|---|
| Uneven distribution of weight | ✓ | Bulky / unwieldy | ✓ | Lacerations & crush injuries to hands, fingers, legs & feet whilst handling loads. Long cages can flex whilst being carried which can result in imbalance.<br>Likely to encounter bulky loads without handholds, with uneven centre of gravity or loads difficult to grasp | Process can be mechanised by use of excavator to lift concrete hoses, auger sections & reinforcing cages<br>Crews to consider the task at hand & plan ahead regards to reducing carrying distances through positioning / storage of materials adjacent to work area<br>Handling of light – medium weight loads will be subject to on-site assessment by foreman & operatives<br>Completion of manual handling training - use good lifting techniques & awareness of own limitations<br>Plan the lift and ensure the route is clear of all hazards. Ensure ground is scraped and kept firm & level.<br>Make sure load can be handled effectively - check stability and centre of gravity before lifting, moving<br>Wear protective gloves at all times<br>Take into consideration the weather conditions (ice etc)<br>Ensure task lighting is available and operational. Check for shadow areas for trip hazards.<br>Health screening including musculoskeletal assessment |
| Unstable / contents likely to shift | ✓ | Difficult to grasp? | ✓ | | |
| Intrinsically harmful (sharp/hot)? | ✓ | | | | |
| **Task considerations** | | | | **Notes** | |
| Holding load away from trunk | | Strenuous pushing/pulling | | Storage on site is generally ground level, or low | |
| Twisting | ✓ | Repetitive handling | | head height or if the body twists | |
| Stooping | ✓ | Carrying distances (10m+) | ✓ | Significant stooping and twisting when carrying loads | |
| Reaching above head height | | Lifting from floor level | ✓ | Moderate/high forces are exerted to move loads | |
| Frequent/ prolonged physical effort | | Large vertical movements | | Head/neck is bent or twisted part of the time; back is bent or twisted part of the time; wrists are bent or deviated part of the time | |
| Work organisation / pace | | Force exerted | ✓ | | |
| Poor coordination, communication & control? | | insufficient rest | | | |
| **Individual factors** | | | | **Notes** | |
| Unusual strength / height required | | Risk to the pregnant? | | PPE does not affect abilities | |
| Risk to those with health problems /disability | ✓ | Requires special information or training? | | | |
| Movement affected by PPE | | | | | |
| **Environmental Considerations** | | | | **Notes** | |
| Slippery ground? | ✓ | Strong air movements | | Increased risk of slips/trips during wet weather if ground conditions deteriorate. This will be affected by quality of main contractor | |
| Variations in levels? (steps/slopes) | ✓ | Poor lighting? | ✓ | | |
| Extreme heat / cold? | | Postural constraints | | | |
| Uneven ground? | ✓ | Dust & fumes | | | |



Think Safety. Act Safely.

| Environmental Assessment | | Risk rating | Control Measures | Residual risk |
|---|---|---|---|---|
| **Aspect** | **Impact** | | | |
| Mobilisation & deliveries | • HGVs block roads causing delays; potential for noise & disruption to local community particularly during early deliveries to avoid peak traffic; vehicles or plant being transported are not cleaned prior to leaving site then contamination of the highways & surface drains is possible.<br>• Fuel consumption & exhaust emissions | High | • Considerate driving & parking - large vehicles parked up clear of site and only brought in when vehicle can be accommodated on site<br>• Neighbour notifications & planning around busy times<br>• Cleaning down plant prior to transport if required<br>• Use low emission fuels, ADBLUE. Switching vehicles off when not in use<br>• Lodging in hotels close to work area; Use of crew cabs & van sharing instead of each person using their own vehicle | Low |
| Piling operations | • Generation of large volumes of spoil.<br>• Likely for some of the spoil to be contaminated, particularly on brownfield / reclaimed land which may need to be treated as hazardous waste | High | • Choice of work method to minimise spoil generation;<br>• Correct disposal route; Re-use spoil on site provided any contaminant is separated;<br>• Ensure type of ground to be encountered on site has been ascertained i.e. contaminated. If contaminated set up safe regime to deal with | Low |
| Concrete pumping | • Large volumes of raw materials to produce concrete<br>• Concrete pumping may cause pollution of drains, & watercourses particularly when washing down of wagons and pumps<br>• May also be an issue if blockages occur & concrete is ejected across site.<br>• Use of water within concrete plant - wetting down mix & cleaning down drum/pump | High | • Reduction at design stage; accurate ordering; mix design & site set up to minimise blockages. Careful placing of concrete to avoid unnecessary spills;<br>• Positioning equipment away from watercourses; Wash out skips or other bunding away from watercourses and surface water drains.<br>• Maintenance of plant & machinery; protection of hoses from damage & containment of hose bursts;<br>• Good water connections and hoses in good condition, switch off water supply when not being used<br>• Sending excess concrete back to batching plant. Placing in designated area to allow the concrete to cure without polluting the ground or watercourses. | Low |
| Mobile plant operations | • Exhaust emissions; Black smoke if machine is poorly maintained<br>• rigs use large volume of fuel during operations<br>• Noise & vibration nuisance when working in urban areas, | Medium | • Servicing of machinery<br>• Reducing noise levels from all plant whenever possible; switching off plant when not in use; All plant will be fitted with efficient silencers; Restricted hours of operation | Low |
| Storage & use of fuels & oils | • Pollution of water courses, drains & sewers through accidental spills, hose bursts and poor storage | High | • Store fuel in secure, vandal proof bunded tanks (at least 10m away from watercourses) Carry out refuelling safely & prevent spills.<br>• Spill kits are available on site with personnel instructed in their use | Low |
| Poor storage & handling waste | • Waste being mixed or sent to incorrect landfill<br>• Leaching into ground and entering drains & watercourses.<br>• Damage to plants/animals, unsightly windblown rubbish | High | • Segregation of waste & recycling;<br>• site waste management plans, use of licensed disposal routes;<br>• Provision of suitable waste containers.<br>• Housekeeping | Low |
| Material Handling | • Poor handling and storage of materials leading to excess waste to landfill, Materials becoming damaged & unusable; poor stock control | Medium | • Order correct amounts of materials; avoid accepting incorrect deliveries; avoid double handling; Re-use/recycling materials, segregation of waste | Low |

Lift Schedule

| Lifting Equipment | Outrigger spread required | Ground Bearings | Boom Length | Mat / Pad sizes | Hook Block | S.W.L |
|---|---|---|---|---|---|---|
| **Lorry Mounted Crane** | Fully spread | ~20Tonne/m$^2$ | 11m max | 450mm square with each outrigger | As fitted | Minimum 5000kg @ 5metres |
| **13 Tonne Excavator** | Tracked | <10Tonne/m$^2$ | N/A | N/A | Lifting point on dipper arm with 8T shackle | Require info from principal contractor |
| **Piling Rig** | Tracked, | As per spec sheet | N/A | N/A | As fitted | Minimum 3000kg |
| **Attendant Crane** | Refer to separate lift plan | | | | | |

| Description of Load | | Weight | Centre of Gravity | Method of Lifting / No. & Position of lift points | Lifting Gear Required |
|---|---|---|---|---|---|
| Standard agitator | | 5000kg | Uniform | 4 lift points on chassis | 6.5T 4-leg chain |
| Large agitator | | 8000Kg | Uniform | 4 lift points on chassis | 4No. 5T webbing straps |
| Concrete Pump | | 3000kg | Uniform | Single point on top | 4.25T twin leg |
| Site Cabin | | 4000kg | Uniform | 4 lift points, pre-slung | 6.5T 4-leg chain |
| Diesel Cube (Full) | | 1200Kg | Uniform | Lift points on top | 4.25T twin leg |
| Jet wash | | <200kg | Uniform | No lift points. Choke | 3.15T twin leg |
| Compressor | | <500Kg | Uneven | Lift points on top | 3.15T single leg |
| Concrete Hose | | 10kg/m | Uniform | No lift points; Choke | 3.15T twin leg |
| Augers | Up to 450mm ∅x 6metre | 500Kg | Uniform | No lift points; choke between flights | 4.25T twin leg for offloading<br>3.15T single leg for rigging |
| | 600mm ∅x 6metre dbl skin | 580Kg | Uniform | | |
| | 750mm | Kg | Uniform | | |
| | 900mm x 6metre | Kg | Uniform | | |
| Cage (single) | | Max 1000Kg | Long, flimsy | 1. Lift horizontally when transporting around site with twin leg chain hooked in line, or choked.<br>2. Lift vertically with single leg chain secured around rebar / helicoil joint. | 4.25T twin leg<br>3.15T single leg |
| Cage (bundle) | | Max 1000Kg | Long, flimsy | | |