

**Risk Assessment
Method Statement
COSHH Information
Operative Briefed Register
10c**

Site: **SIM – Powerhall & Decarbonisation Works**

Task: **Upper Yard Trial Holes & Trenches: Historic Surfaces**

Start Date: **TBC**

Duration: **TBC**

Labour: **HH Smith**

Assessor: **Ollie Glasse**

Issued By: **Ollie Glasse**

Issue	Date	Comments
1	22/04/21	Revised Issue

Below is the amendment record for minor or non-material revisions or amendments that do not warrant a full re-issue of the document. All such amendments are highlighted.

Amendment No	Date	Amendment	Page/s

H.H. Smith & Sons Co. Ltd.



Site	SIM PH & D									
Date	08/03/2021			Review Date	08/03/2021		Assessor	Ollie Glasse		
Task	Excavate & install trenches for pipework									
Item	HAZARDS	WHO IS AT RISK	L	S	Risk	CONTROLS	Residual Risk			
							L	S	Risk	
1	Working in school premises. Risk of serious injury to children caused by construction operations	School Children School Staff General Public	4	4	16	1. Works to be done during school summer holidays. 2. The work area will be fenced off. 3. Work to be done in sections; fence dig area off, dig excavation, install service/duct, back fill, remove barriers. 4. Fencing will be secured and tied together before work can commence. 5. Fencing will be placed a safe distance away from the work area.	1	5	5	
2	Use of excavator Pedestrians/ Building Struck by machine	Operative General Site Operatives Public	3	5	15	1. Only competent person with relevant license to operate machine. 2. Work area must be fenced off/ segregated from pedestrian routes & public. 3. Use banks man if working near pedestrian routes to supervise traffic/ pedestrian & plant operations. 4. Plant must be inspected daily and the findings recorded. 5. A dig permit must be issued prior to breaking ground. 6. Plant service records & maintenance must be up to date. 7. Fence area where excavator will be operating off from general pedestrian routes. 8. Only operatives involved with excavation works to be within fenced off area/ excavation work area.	1	5	5	
3	Attachment falling, not suitable attached (bucket) Crush/ entrapment	General Site Operatives	4	5	20	1. Only competent person with relevant license to operate machine. 2. Ensure attachments is locked & secured in place prior to using attachment. 3. Use attachment as per manufacture guidance, DO NOT OVERRIDE SAFTEY SWITCHES or GUARDS, use manufacture pins. 4. <u>Do not work/ lift over workers, pedestrian, people - pedestrian areas.</u> 5. If any issues / faults with attachment, quick hitch etc. stop work immediately & report to site Manager.	1	5	5	
4	Ground/ sides collapsing Risk entrapment, suffocation,	General Site Operatives	5	5	25	1. Excavation for service no more than 1 meter deep however if; 2. the ground level/ sides is above the operatives head when bent	1	5	5	

H.H. Smith & Sons Co. Ltd.



	DEATH					down/over the sides must be suitable battered back/ stepped backed. 3. Inspect excavations daily, to assess stability etc. 4. Use suitable access into excavation, ramp or steps. 5. Store soil dug out away from the trench edges.			
5	Live underground services Electrical shock, gas explosion	Operative General Site Operatives	4	5	20	1. Check existing service drawings for area. If not available, a suitable site service survey to be done by a competent operative. 2. Cat scan dig area before breaking ground, see SSOW for cat scan. 3. Any live services identified must be hand dug & all runs exposed within the work area. 4. Live services exposed must be suitable protected/ highlighted. 5. Issue dig permit prior to excavations.	1	5	5
6	People falling into trench Falling from height	General Site Operatives Visitors/ Public	4	5	20	1. Excavation not more than 1 meter deep. 600mm deep on average. 2. Excavation will be barrier off using suitable chapter 8 barriers. 3. Excavations to remain barrier off at all times.	1	5	5
7	Debris/ tools Falling into Trench Struck by debris/ tools	General Site Operatives	2	5	10	1. Store soil away from the edges. 2. No materials or equipment should be stored near the footings edges.	1	5	5
8	Manual Handling	Operative	4	3	12	1. No workers will lift any object that he does not feel comfortable with lifting. 2. Use lifting equipment if needed.	2	3	6

Calculation of RISK LEVEL - <u>L</u> ikelihood x <u>S</u> everity = Risk (score)		
Likelihood is	1 could never happen, 2 very unlikely, 3 Possible, 4 likely, 5 very likely	
Severity is	1 very slight, 2 minor, 3 significant, 4 major, 5 fatal	
Score	1-9 = Low	10 – 18 Medium 19-25= High



Site	SIM – PH &D				
Date	08/03/2021	Review Date	08/03/21	Assessor	Ollie Glasse
Task	Use of Excavator				

Item	HAZARDS	WHO IS AT RISK	L	S	Risk	CONTROLS	Residual Risk		
							L	S	Risk
1	Untrained person operating plant Risk of injuring or damage to property	Operative General site personnel Public	4	5	20	1. Only competent persons with a valid and sufficient license will operate plant. 2. All operatives license to be checked by site manager prior to operating machinery. 3. Copies to be kept in site office of operatives license if not possible operative must keep license on site so it can be displayed on request. 4. Plant must be switched off, keys removed and kept in safe place when plant is left unsupervised.	1	5	5
2	Plant damaged/ defective Risk of machinery failing causing serious injury or damage to property.	Operative General site personnel Public	3	5	15	1. Machinery must be inspected prior to first use by the operative or a competent person and findings recorded and kept on site. 2. Copies of plant test certification etc. will be kept in the site office. 3. Machinery to be inspected daily and the finding recorded and kept on site. 4. Any defects must be reported immediately and competent person to fix defects. 5. Plant will be services as required by manufactures competent person to services or fix defects & records will be kept on site.	1	5	5
3	Plant attachments not suitable/ defective Risk of unplanned release of bucket etc causing serious injury or damage to properties	Operative General site personnel Public	4	5	20	1. Quick hitch / attachments to be inspected daily & any defects to be reported, fixed or replaced. 2. All components needed to secure attachments must be in place before use. 3. <u>NO LIFTING TO BE DONE OVER ANY PERSON OR PEDESTRIAN ROUTES.</u> Work area to be fenced off if possible. 4. Pins securing attachments must be fixed in place. 5. Use attachments/ locking mechanisms as per manufactured instructions & guidance. 6. Do not disable safety switches or procedures. 7. Do not use plant if damaged or defective, report <u>IMMEDIATELY</u> to site	1	5	5

H.H. Smith & Sons Co. Ltd.



						manager.			
4	Pedestrians & property being struck Risk of serious injuries or damage	Operative General site personnel Public	4	5	20	1. Pedestrian and machinery routes to be segregated 2. Machinery work area to be fenced off to stop pedestrians accessing near machinery activities. 3. Windows near work areas will be boarded over creating a void between glass and board. 4. Banks man to be used to guide machinery 5. All workers must wear Hi visibility vests.	1	5	5
5	Plant Overturning Risk of serious injury or damage	Operative General site personnel Public	3	5	15	1. Plant must be operated by competent person. 2. Ground conditions to be inspected prior to works commencing to access suitability for machine access routes near slopes etc. 3. Stone etc suitable material) will be used to make access routes suitable. 4. Check machine lifting safe loads prior to lifting any weights. Check manufactures guidelines	1	5	5
6	Services: Underground/ overhead Risk of serious injuries or damage	Operative General site personnel	5	5	25	1. Ground survey to be done prior to excavation. Catt scan, trail holes, existing service drawings 2. If services is found hand dig to expose services. 3. Overhead, erect goal post near lines. 4. Divert access routes away from overhead lines. 5. Operative to report all unknown services found to contract administrator.	1	5	5

Calculation of RISK LEVEL - <u>L</u> ikelihood x <u>S</u> everity = Risk (score)		
Likelihood is	1 could never happen, 2 very unlikely, 3 Possible, 4 likely, 5 very likely	
Severity is	1 very slight, 2 minor, 3 significant, 4 major, 5 fatal	
Score	1 -9 = Low	10 – 18 Medium 19-25= High



Excavate & install trenches for Services

This document has been prepared by HH Smith with input from Donal Insall Associates and Conisbee.

Introduction

Trenches are to be formed to allow the installation of water pipe work and electrical ducts throughout the site. As part of the preparation works surveys are proposed to record the appearance of the Yard and trial holes are proposed in order to confirm the suitability of the route. The pipe work will be used to distribute the water extracted from the Upper yard borehole to the Powerhall, 1830's Warehouse and then to the reinsertion boreholes in the Lower Yard.

Constraints

The site lies within the Castlefield Area and the setting of a number of listed buildings. The Upper and Lower Yards are considered to be curtilage listed and are finished with a combination of cobbles, rail tracks, tarmac and modern paving.

The cobbles, particularly in the Lower Yard, are varied; there are 5 or 6 different types, arranged in bands and patches running East to West. There are also variances in the Upper Yard and there are patch repairs across both Yards. Many cobbles are damaged and are therefore likely to break when lifted. There are also undulations in the cobbles across the Yards, particularly the Lower Yard

Given the complex nature and history of the site, the works are required to take the archaeological potential of the site into account when being planned and undertaken. As such, this document will be shared and reviewed by GMAAS. There are also potentially a number of services located along the trenching route, the exact location of which may or may not be known. Additional care will be taken to ensure both of these constraints are managed correctly. Conisbee will carry out a monitoring role on the trial holes and trenching works.

Brief Description:

A Risk Assessment (find attached) has been carried out in order to assess the risks to employees posed by the use of an excavator to dig ground out for the install of pipework.

The arrangements will take in account the required legislations.

Sequence of works:

Preparation

Prior to commencing the trial holes and trenching works, a detailed site survey will be completed to identify



cobbles which are anticipated to be damaged when lifted. This survey will also record the bands / patterns / variances between the different cobbles across the Upper Yard, to allow for accurate replacement of the cobbles. The team will also photographically record the overall appearance of these areas in long range views within the Yard and from the New Warehouse. This survey work will enable HH Smith to accurately source the replacement cobbles to match and to reinstate them to match any banding, laying pattern or level changes.

On arrival at site operative to park in designated car park and report to the site office for a site induction immediately.

The next stage will be to confirm and agree routes with design team by scanning for underground services and completion of trial holes.

Methodology for excavating and recording trial pits and trenches

1. All necessary approvals are to be obtained and all relevant areas are to be photographed before commencing any intrusive works on site.
2. The agreed methodology will be reviewed with the contractor to agree the proposed programme, site visits and hold points.
3. Sampling and testing of buried material for hazardous contaminants will be carried out before any trial pits or trenches are excavated. To ensure the health and safety of personnel at all times the excavation methodology will be adapted as required to account for the contamination survey results and will proceed in accordance with any further recommendations made by Manchester City Council Environmental Health Department.
4. Each trial pit will measure approximately 750mm long x 750mm wide x 750mm deep. Each trench will be continuous and will measure approximately 750mm wide x 750mm deep. To minimise the disturbance of any buried artefacts the trial pits will be formed by hand and where required their sides will be adequately supported with shoring as excavation progresses to enable personnel to enter safely for in situ excavation and inspection. The trenches will be formed by a small mechanical excavator where this is considered appropriate based on the trial pit findings, otherwise they will be formed by hand.
5. A photographic record will be made during the course of all excavations and logs will be made to record any artefacts discovered.
6. Unless it is unavoidable artefacts will not be removed, disturbed or cut. In any case no alterations will be made unless all necessary approvals have been obtained
7. Backfilling of excavations will be carried out as soon as practicable following inspection by the structural engineer and others, as required, with material replaced at a similar depth as that originally encountered. The backfilling will be completed in a manner that minimises any subsequent disturbance of artefacts that may be present. Where trial pits are required to be left open for a period of time the contractor will provide fencing together with all necessary lights and signage, taking all precautions necessary to protect the trial pits and their contents from the adverse effects of the weather.
8. All areas where the existing surface finishes are being temporarily removed will be made good in an appropriate manner in accordance with all approvals and conditions.



9. Relevant photographs and logs of the trial pits and trenches will be collated into a report and deposited in the SMG archives and shared with MCC.

Trial holes

Prior to commencing works complete full photographic survey of cobbles to be removed to allow for reinstallation in exact positions (noting spacing patterns and dimensions). Label photos and assign individual numbers for each cobble.

CAT scan trial hole locations and surrounding area for live services.

Carefully lift the cobbles using hand tools if possible. Where not possible use small hand-held breaker to break put mortar and loosen cobbles. As removing, mark each cobble with its reference number, photograph and store in safe location ready for reinstatement.

Once all cobbles are lifted use small hand-held breaker to break out concrete below and remove by excavating by hand. Ensure surrounding cobbles are not disrupted.

Hand dig down to required level. This is expected to be approximately 1120mm.

Should nothing unexpected be found along the trench route, it can be confirmed and trenching progressed as per the methodology below.

Replacing Cobbles if re-routing trench

Once required investigation is completed, reform sub base to existing level.

Mix mortar to match existing and relay cobbles to match the existing locations and pattern and as per the photographic survey and numbering (completed prior to removal).

If the route needs revising as a result of the scans and trial holes, the preparatory survey work by HH Smith would need to be reviewed to ensure the correct areas of the route are recorded accurately (for reinstatement / cobble matching purposes).

Trenches

Dimensions of the trench will vary in width between 1000mm and 2050mm depending on the number of services required in trench at a given location. The depth will be a maximum of 1120mm.

Excavation areas must be barriered off from public at all times and kept shut at all times.

Surrounding cobbles will be protected using plywood as will any routes for excavators.

H.H. Smith & Sons Co. Ltd.



Banks man to work with excavator driver at all times when excavator is in use.

No unauthorised person must be allowed with work area, only operatives involved with dig to be allow in fenced off area.

Engineer to set out route for excavation.

Proposed dig area to be scanned for services with a cat scan & genny BEFORE BREAKING ANY ground.

Issue Dig permit for each section/ run.

Use cat scan & genny as per the manufactured instructions.

A competent operative with the relevant qualification to use a genny & CAT scan to track any services/ pipes.

Connect the genie to service as required to determine the depth of the service.

Track service with the CAT scan.

Using the CAT scan with the genie connected to the service the depth of the services can be found.

If depth of cable cannot be detected with cat scan & genny it has to be presumed the cable could be at any depth (within tarmac, concrete base etc.) and isolate cable at source until service is exposed.

Record findings on a services survey.

Highlight/ mark any services detected or any know services around site.

Relay services survey to excavator operator & issue a dig permit & buried services permit, attached.

Removing Cobbles

Following on from the detailed site survey carried out under the preparation work stage (which recorded cobble types and the overall visual appearance of the cobbling in the Upper Yard), the confirmed route would be photographically recorded and spacing patterns and dimensions noted – to allow the cobbles to be reinstated to match the existing following the trenching works.

Carefully lift the cobbles using hand tools if possible. Where not possible use small hand-held breaker to break put mortar and loosen cobbles. As removing, mark each cobble with its reference number, photograph and store in 'batches' in a safe location in close proximity to the area they have been removed from - ready for reinstatement.

Once all cobbles are lifted use small hand-held breaker to break out concrete below and remove by excavating by hand. Ensure surrounding cobbles are not disrupted.



Excavate trench

If possible, operative who carried out cat scan/ services survey to work as banks man with excavator operator.

If services have been detected with the CAT scan operatives must hand dig the area to expose the service.

Soil around services should be hand dug & exposed.

As there is likely to be below-ground archaeology within the trenching route – advice has been sought from GMAAS on this matter and they have reviewed the route. Conisbee will carry out a monitoring role for this work – as explained under '**Methodology for excavating and recording trial pits and trenches**' above.

Where there are no existing services or below ground archaeology found an excavator with suitable bucket attachment will be used to excavate soil.

Competent operative with relevant qualification to operate excavator.

Plant must be inspected daily by operator before first use & findings recorded.

Excavator operator to commence dig, average depth of excavation will be approximately 1120mm.

Banks man to work with excavator operator and supervise the dig area as it is being excavated.

Soil will be stored suitable distance away from excavation as soil will be used to back fill once completed.

Once trench has been dug to required depth and section, the duct/ service will be laid within excavation.

Suitable access step/ ramp into excavation.

Once duct/ service installed back fill excavation to structural engineer's specification and continue as above method to next section.

Reinstatement – Cobbles

Once trench installation is completed, reform sub base to existing level.

Mix mortar to match existing and relay cobbles to match the existing as per the photographic survey and numbering (completed prior to removal).

The reinstatement process will use the information gathered as part of the site surveys and photographic records and will take the following into consideration:

- Types of cobbles to the specific area of the Yards. (Cobbles will be kept close to the trench when removed and cobbles will be sorted for reuse. Replacement cobbles sourced to match specific areas)
- Spacing and pattern of cobbles matched to specific area of the Yard. (Refer to photographic survey and measurements taken prior to removal. Check against surrounding area of cobbles)

H.H. Smith & Sons Co. Ltd.



- Undulations across the lower yard. (Periodically check during reinstatement process from a variety of viewing points (including from across the Yards and from the Upper Yard looking to the Lower) to ensure that the new cobbles follow the existing undulations. Also check back to photographic survey.)
- Carry out a test section of reinstatement, to be reviewed by Donald Insall and MCC.
- Each section will be reviewed by Donald Insall, to avoid scarring of the Yards as far as possible. This will be completed via regular site visits throughout the reinstatement process.

Install Trench under Tracks

An area of the proposed trench passes under an existing track set within cobbles.

In this location, a detailed photographic survey will be completed.

Then the cobbles will be carefully removed and set to on side within close proximity to the area they were removed from – as per methodology above.

We will then hand excavate the trench under the tracks leaving them in situ. Extra precaution must be taken to avoid moving the tracks as much as possible. Temporary timber supports to be installed whilst trench is open.

Once the pipework has been installed under the tracks the trench will be backfilled and the cobbles reinstated around the tracks. Mix mortar to match existing and relay cobbles to match the existing pattern and as per the photographic survey completed prior to removal.

PPE requirements

The following PPE is a standard minimum requirement on site & must be worn at all times. Further PPE may be required as identified within task specific RA requirements.

HH Smith work areas;

- Hard Hat
- Hi visibility vest
- Safety footwear with steel mid sole & steel toe cap
- Trousers that cover legs (no shorts/ ¾ trousers)

Equipment / Machinery/ Materials needed (PPE required)

Equipment / Machinery/ Materials	PPE Requirements
Hand tools	Standard Site PPE, gloves
Cat scan	Standard Site PPE, gloves

H.H. Smith & Sons Co. Ltd.



Permit to work / Inspections

DIG permit.

Various permits required as per RA & MS.

Specific Training Arrangements for equipment/plant

HH Smith Operatives to report to the site office for a site induction.

Equipment / Machinery	Specific training
CAT scan	Use as per manufacture instruction & guidance. Cat scan course.
Manual handling	0.5 day awareness course.
Hand tools	Use as per manufacture instruction & guidance.

First Aid Arrangements

Operatives will be briefed on the first aid arrangements & first aider on site at the site induction.

HH Smith Site manager & various others on site have attended a 3 day first aid at work course.

The details of the first aider & directions to nearest A&E will be displayed within the site office & canteen notice boards.

Welfare Arrangements

Operatives will be briefed on welfare arrangements at the site induction.

Operatives can use the existing welfare on site.

The W/C facilities must be kept clean, maintained and left as previously found!!

Emergency Procedures

Operatives will be briefed on emergency arrangements at the site induction.

Operatives must adhere to the emergency procedures at all times.

H.H. Smith & Sons Co. Ltd.



All Fire Escape/ break glass points/ alarms MUST be maintained at all times, do not store any materials or equipment in front of escape doors or on emergency escape routes.

Contact details

Role/ Responsible	Company Details	Contact information
Managing Director	HH Smith & Sons Co Ltd Rear of 95 Bury old Road Whitefield Manchester M45 7AY	Contact: Dave Smith Mob: 0161 280 3509 Email: info@hhsmith.co.uk
SHEQ Manager	HH Smith & Sons Co Ltd Rear of 95 Bury old Road Whitefield Manchester M45 7AY	Contact: Juan Crous Tel: 0787 295 2425 Email: jc@hhsmith.co.uk

H.H. SMITH
 & SONS CO LTD
 BUILDING YOUR HORIZONS

[illegible]

Name: _____ Signed: _____ Date: _____

H.H. Smith & Sons Co. Ltd.



RA, MS & COSHH Assessment Register

In signing this form I the undersigned confirm that I have been briefed on all aspects of the forthcoming work and fully understand the method of work and associated risk and that I have been briefed on all Site requirements and relevant PPE relating to the task.

Name of Operative	Signature Operative	Date

Site Supervisor declaration

I _____ as designated supervisor/manager can confirm that I have briefed the above operatives in all aspects of the method statement, risk assessments and the Site Health, Safety & Emergency Rules.

Signed: _____ Date: _____