

RIDGE

PEELERS YARD, GOULDEN STREET - CHIMNEY STRUCTURAL REPORT TO SUPPORT LISTED BUILDING APPLICATION

PEELERS YARD LIMITED

April 2022

5015327-RDG-XX-ZZ-RP-S-0003

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Document Reference

5015327-RDG-XX-ZZ-RP-S-0003

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1. INTRODUCTION

The site relates to the former Ancoats' Police and Ambulance/Fire Station originally built c1872 and Grade II listed in 1992. The building suffered major fire damage in 2002. After demolition to make safe, remaining structures consisted of the perimeter walls and columns and the main brick chimney stack. The site is currently unoccupied.

Condition assessment survey of the existing chimney stack (visual survey above ground level and brick sample and testing) was undertaken in August 2018, further ground investigation to chimney base was undertaken in July 2021. Their findings are summarised in this report and its appendices.

This report covers the structural inspection and proposed works to the existing chimney stack.

Repair, strengthening, and extension works are proposed to the existing chimney stack as part of wider proposals for residential redevelopment.

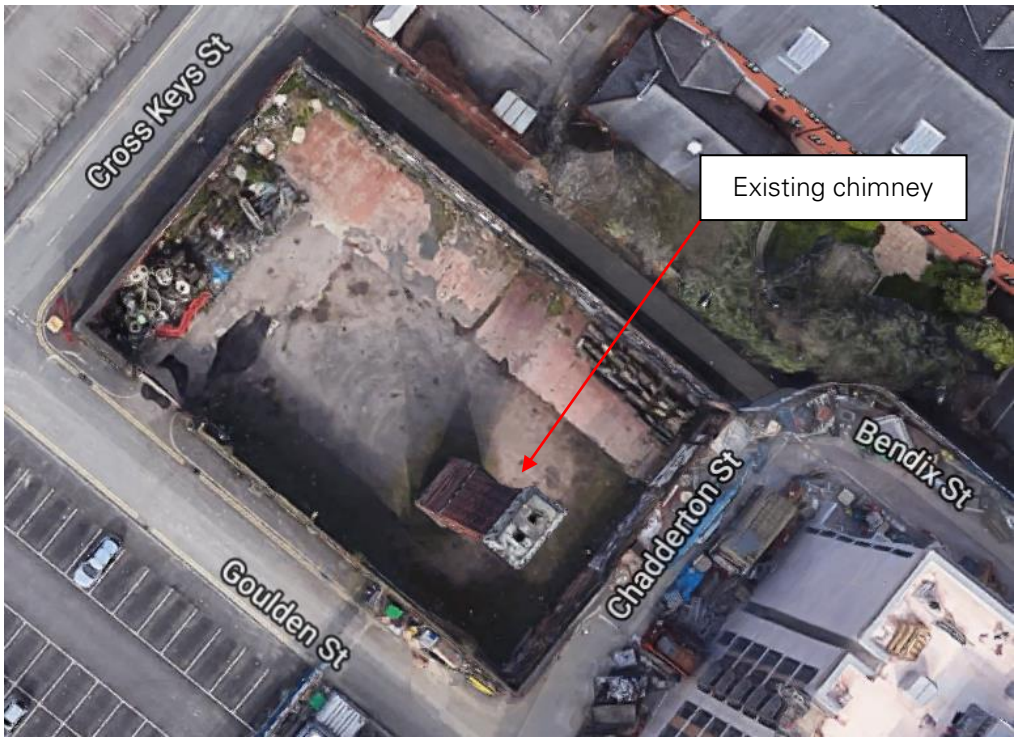


Image 1: Location of Existing Chimney Stack
Goulden Street, Manchester, M4 5FR

This report only identifies defects that were visible during the inspections and the conclusions are our professional opinion based solely on the survey report findings. We take no liability for any defects or issues which were not visible or obvious during surveys. The aim of the inspection was to ascertain the condition of existing building, comment on its structural adequacy and to determine the measures required to make the structure safe to work in.

2. EXISTING STRUCTURAL ARRANGEMENT

2.1. Existing masonry chimney stack

The masonry chimney stack has approx. plan dimensions 4.9m x 2.5m on plan and is approx. 25.7m tall above existing ground level. No record drawings are available for the chimney stack.

The chimney stack above ground level is constructed with brickwork and stonework masonry with cast iron and concrete elements at the top of the chimney. A number of voids and flues are present inside of the stack, full extent is not known. Please refer to section no. 4.1 for more details.

2.2. Existing chimney foundation

Existing foundation assumed to be constructed from brickwork, not extending far behind the chimney footprint and be approx. 3 m deep (full details have been proven as far as practicable), Assumed to be founded on undisturbed natural clay. Number of voids and flues are assumed to be present below ground, full extent is not known. Please refer to section no. 4.2 for more details.

Existing chimney stack and/or base construction are unable to be proved by calculation to modern codes of practice. Please refer to section no. 6 for CDM 2015 Residual Risk Assessment.

3. PROPOSED ARRANGEMENT AND STRUCTURAL NOTES

The following is a summary of the proposed architectural and structural works to the chimney stack.

Proposed structural works to enable the installation of the light lantern:

- New foundation to braced steel stability framing. Proposed foundation is composed of new piles installed around the existing chimney foundation to ensure the existing structure is not undermined. New reinforced concrete pile caps and ground beam will be installed over the piles and around the existing chimney stack (below ground level) to provide base for the new steel strengthening frame. Deep pile foundation 450 Diameter CFA piles will ensure that the existing chimney base is not overloaded.
- Structural strengthening to lower part of the chimney stack – braced steel stability framing. This new stability framing will enable a safe transfer of the increased internal forces into the new pile foundation.
- Structural strengthening to the top part of the chimney stack – new concrete plug to chimney top to provide a suitable base for the lantern framing. Concrete plug is to stabilise the lantern, preventing overturning and uplift of the framing.

The above work is to be split into 2 packages, Enabling Works and initial shoring of the Chimney and then the main site works to complete the architectural elements to the chimney,

ENABLING WORKS

Proposed Enabling works to stabilise the chimney to allow for general construction to commence:

Step 1 Install Vibration and Tilt Monitoring.
Step 2 General Site mobilisation, Heras fencing, clearance and security.
Step 3 Remove all debris from site and store reclaimed stone for later reuse.
Step 4 Remove stockpiles of materials not to be reused as part of main scheme
Step 5 Carefully remove the cast iron columns and remove from site for restoration
Step 6 Placement of pile mat for the Chimney Piling operations
Step 7 Install Piles to Chimney
Step 8 Repair masonry to lower section of chimney to allow installation of steel frame shoring.
Step 9 Install Strengthening Steel.
Step10 Continue Vibration and Movement monitoring throughout the remainder of the construction programme.

MAIN WORKS

To be concluded prior to handover and PC.

Proposed architectural works:

- Light box lantern to the top of the existing chimney, approx. 4.5m x 2.5m on plan and 5m tall.
- Lantern construction to be permeable to allow wind load to pass through. Solid lantern elements to minimise as far as possible.
- Architectural cladding to the lower part of the chimney stack.
- Masonry restoration and repair works above strengthening frame. All works to be carried out by heritage masonry specialist and to be approved by MCC prior to commencement.

The light box lantern proposed to the top of the existing chimney will significantly increase the overall height of the structure (over 30m). This increased height will generate high external and internal forces on and in the chimney structure.

As a 'rule of thumb' it is generally acceptable to accommodate 5% to 10% increase in external/internal forces without structural strengthening. To determinate the increase in external and internal forces, detailed wind and gravity load assessment was carried out on the existing structure and the proposed lantern extension. Existing chimney stack and base construction were assessed for their structural capacities and are unable to be proved by calculation to modern codes of practice. The increased external/internal forces due the proposed lantern installation are between 50% to 80% and as that the existing structure and foundation are not structurally adequate to support the proposed works. Strengthening works are required to accommodate the extension works. Lantern construction must be permeable to allow wind to pass through. Solid elements must be omitted as far as possible. Elements with a minimal loaded area must be used as lantern cladding and construction to ensure that onerous wind load is not attracted by the proposed works.

Proposed structural strengthening works are shown on drawing no. **5015327-RDG-00-ZZ-DR-S-0050 & 0051** in Appendix A. Preliminary construction work sequencing is described in section no. 5 of this report.

4. INVESTIGATION WORK AND CONDITION OF STRUCTURE

4.1. Condition assessment survey

Condition assessment survey of the existing chimney stack (visual survey above ground level and brick sampling and testing) was undertaken in August 2018 by CRL Surveys. Full report is in Appendix B.

Summary of findings:

- The mortar pointing and brickwork was found to be in very poor condition throughout the chimney structure (spalled brickwork, masonry surface erosion, cracked masonry, loose and poor pointing, etc.)
- Cast iron and concrete elements at the top of the chimney were found to be displaced.
- The steel frame supporting the slabs to the top of the chimney was extensively corroded.
- Decorative grilles at the top of the chimney were badly corroded.
- Stonework suffered from spalling and displacement (copping stones, sill stone, supporting corbels)

4.2. Ground investigation to chimney base

Ground investigation to chimney base was undertaken in July 2021 by E3P. Full report is in Appendix C.

Summary of findings:

- Made Ground was encountered in all exploratory locations to a proven depth of between 2.60-3.50m bgl. The Made Ground deposits typically comprised a gravelly clay, with granular constituents of brick, concrete, timber, plastic and mixed lithology.
- Ground investigation identified the presence of brick foundations beneath the chimney; however, these foundations were not noted to extend further than 1.00m beyond the footprint of the chimney. The full depth of the brick footing could not be proven due to sidewall collapse in the trial pits.
- Information from the previous site owners suggested that all basement structures were removed up to the base of the chimney and backfilled will loose end tipped material, as encountered within the exploratory locations.
- In conclusion, based on a series of rotary borehole and trial trenches, a limited brick footing foundation was noted beneath the chimney structure, however no chimney base was identified which extends more than 1.0m laterally beyond the footprint of the structure.

Existing chimney stack and/or base construction are unable to be proved by calculation to modern codes of practice. Please refer to section no. 6 for CDM 2015 Residual Risk Assessment.

5. STRUCTURAL ALTERATION WORKS AND WORK SEQUENCING

The following is a summary of the recommended structural works and construction work sequencing for the safe installation of the proposed permeable lantern, top and bottom chimney stack strengthening, and foundation works.

- Install continuous and real time vibration and movement monitoring to chimney, trigger levels to be as agreed with Ridge & Partners LLP.
- Note KP Monitoring is now live and available to the construction team via live web link. This is for both Tilt monitoring for movement and vibrations
- Vibrations will be limited in line with BS 5228 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. A system is to be implemented as below.

STATUS	RESULTANT PEAK PARTICLE VELOCITY (MM/S)	ACTION
GREEN	0 - 4mm/s	All vibrations are below 5mm/s- work may continue
AMBER	5 - 9mm/s	Work on site should be stopped and engineer consulted to assess any movement of the chimney or damage before continuing.
RED	10mm/s +	Work is to **STOP** immediately and engineer to review chimney condition. Working practices to be reviewed and agreed with engineer before recommencement.

- Undertake temporary works as necessary and carry out repair to masonry to lower level up to coping stone. Repair and infill all voids in preparation for the steel frame.
- Undertake further investigation to chimney base and to chimney stack as necessary.
- Install new piles around the existing chimney base (designed and installed by specialist, refer to specialist's method statement).
- Install RC ring ground beam and RC pile caps around the chimney perimeter.
- Install steel braced frame.
- A 5m exclusion zone is to then be set up around the existing chimney. Zone to be fenced up. To protect the chimney during the main building piling and groundworks.
- Below steps to be completed at a later stage in site program.
- Carefully deconstruct top section of the chimney to allow for lantern base installation. Masonry removal to be undertaken under a supervision of masonry heritage specialists. Store and label removed masonry neatly on site. All metalwork and stonework to be repaired by specialist. Details of deconstruction to be confirmed by a high access site inspection.
- Install a new concrete plug to the chimney top. Concrete plug is to provide a base for the lantern structural framing and to stabilise the lantern, preventing overturning and uplift of the framing.
- Tension cables to be installed between new steel frame and lantern plug/support frame.
- Chimney top to be rebuilt and repaired by masonry heritage specialists around the new concrete plug to ensure the appearance of the rebuilt section matches the existing.
- Install the open lantern to the top.
- A 5m exclusion zone is to then be set up around the existing chimney. Zone to be fenced up. To protect the chimney during the remainder of the main building works.

Note: high level access to be provided either from mobile access platforms or from a self-supporting scaffolding (scaffolding not to be stabilised by the chimney stack).

6. CDM 2015 RESIDUAL RISK ASSESSMENT

The following is a summary of the key risks to health and safety that has been identified in relation to the structural chimney works. This summary does not identify all risks but aims to communicate those risks that have not been possible to eliminate through the design and may not be readily apparent.

POTENTIAL RISK IDENTIFIED	POTENTIAL CONSEQUENCE	RISK MITIGATION
Chimney stack and base construction differs from the one assumed.	Potential voids in the base, depth and full extent not fully known. Construction and geometry of the top section of chimney stack not known.	Further site investigation to be undertaken. Details are to be confirmed.
Temporary works, vibration & movement monitoring: vibration and movement trigger levels are exceeded during early stage of site works (e.g. during piling works).	Should vibrations or movements exceed trigger levels, all works are to stop, and engineer consulted. This could result in delays on site (e.g. piling rig unable to operate until chimney restraint supports are in place).	Alternative temporary stability works with full temporary support to chimney to be developed to mitigate this risk.
Existing chimney stack and/or base construction are unable to be proved by calculation to modern codes of practice.	Any construction works to chimney stack and/or its base may trigger a structural collapse.	All investigation and construction works to be vibration free, continuous vibration and movement monitoring to be provided. Detailed method statement for all works to be agreed prior works commencing.

7. PHOTOGRAPHS AND IMAGES



Image 2: Location of Existing Chimney Stack

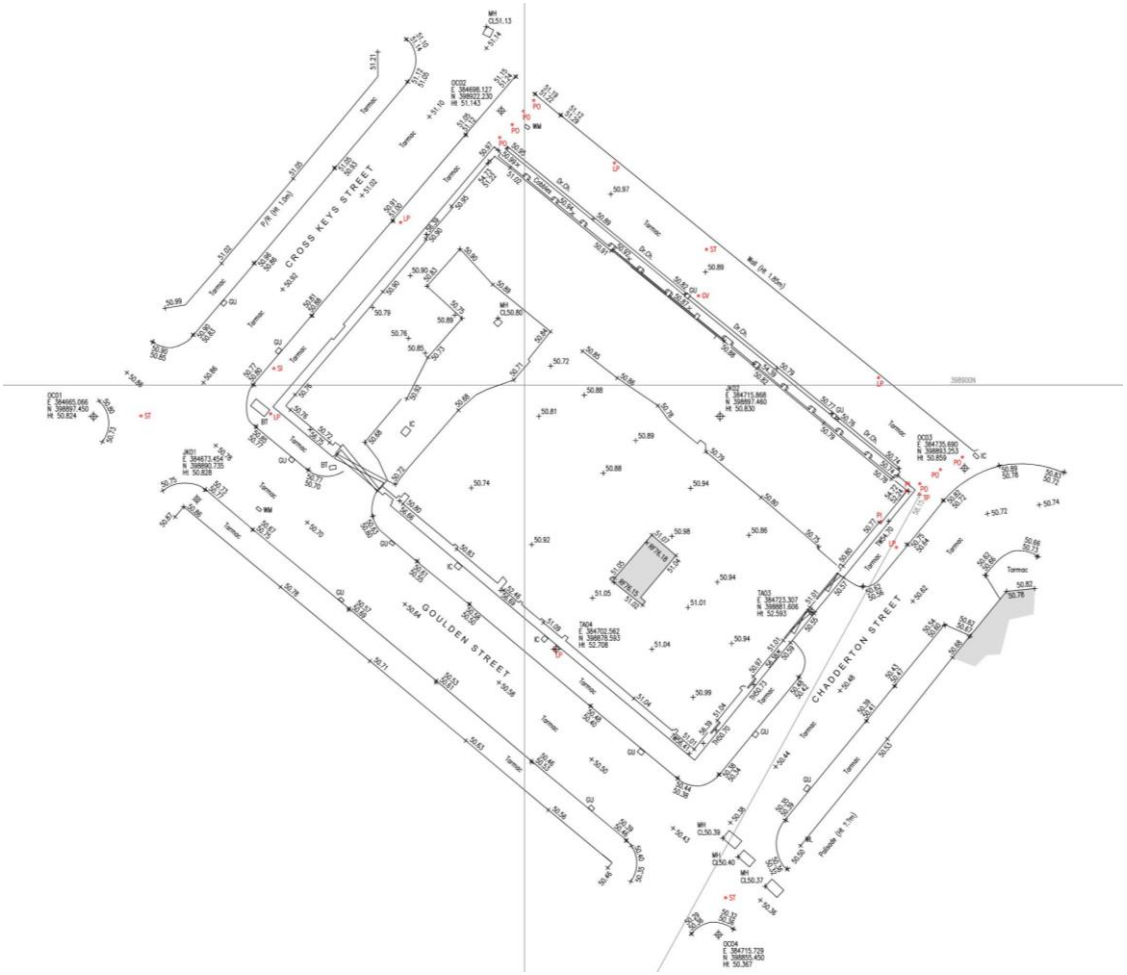


Image 3: Topographical plan



Image 4 – Chimney North-East Elevation (May 2021),
see survey report in Appendix B for defect description



Image 5 – Chimney North-East Elevation (May 2021)
see survey report in Appendix B for defect description



Image 6 – Chimney South-East Elevation (May 2021)
see survey report in Appendix B for defect description



Image 7 – Chimney South-East Elevation (May 2021)
see survey report in Appendix B for defect description



Image 8 – Chimney South-West Elevation (May 2021)
see survey report in Appendix B for defect description



Image 9 – Chimney South-West Elevation (May 2021)
see survey report in Appendix B for defect description

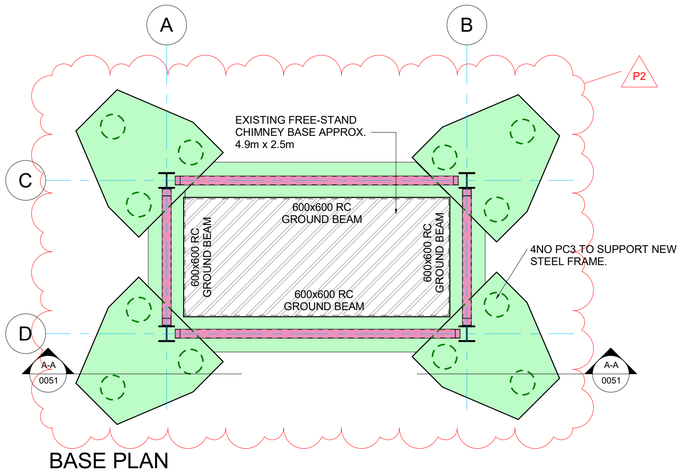


Image 10 – Chimney North-West Elevation (May 2021)
see survey report in Appendix B for defect description



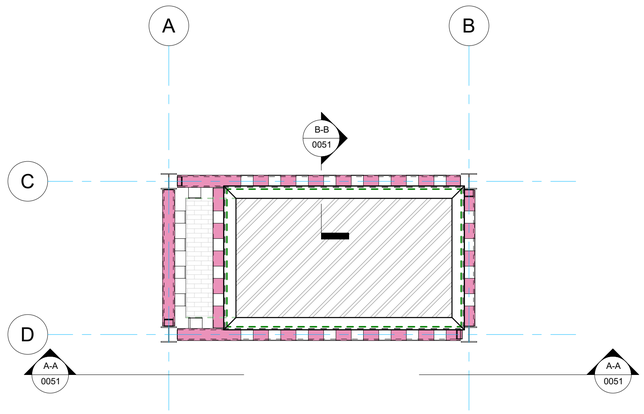
Image 11 – Chimney North-West Elevation (May 2021)
see survey report in Appendix B for defect description

APPENDIX A – PROPOSED STRUCTURAL DRAWING



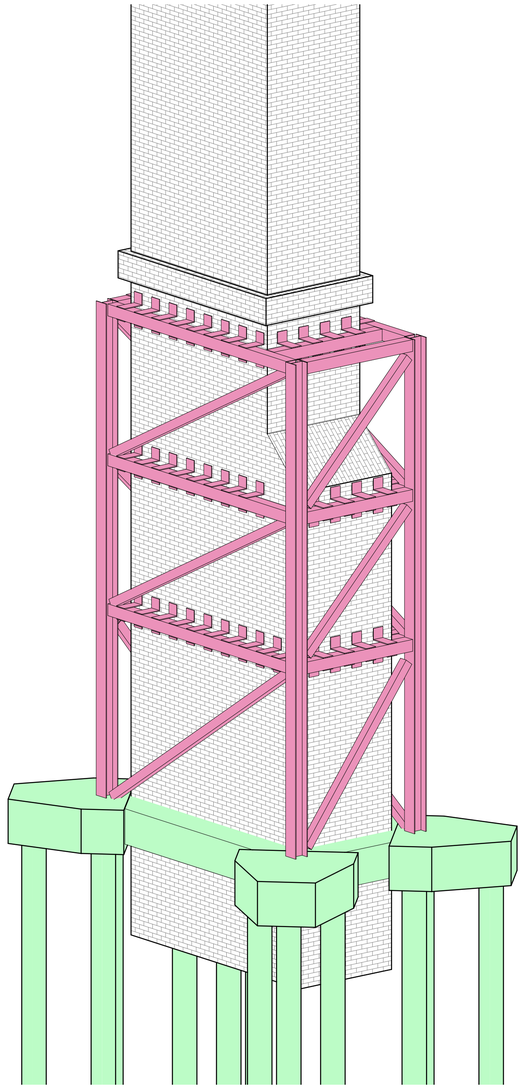
BASE PLAN

1 : 50

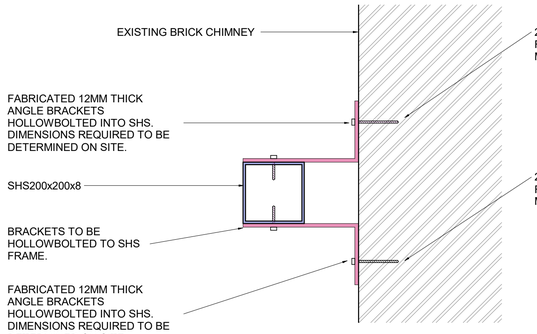


PLAN ON CHIMNEY TO STEEL FRAME CONNECTIONS

1 : 50

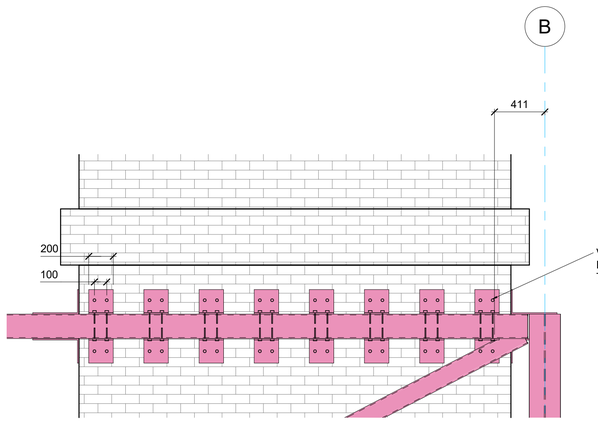


3D VIEW ON STEELWORK



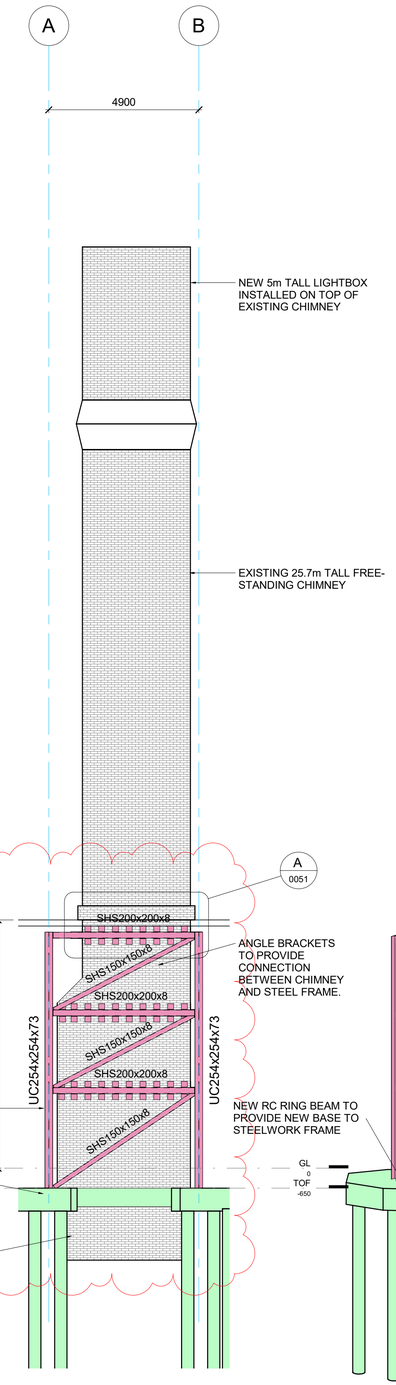
B-B SECTION B-B

1 : 10



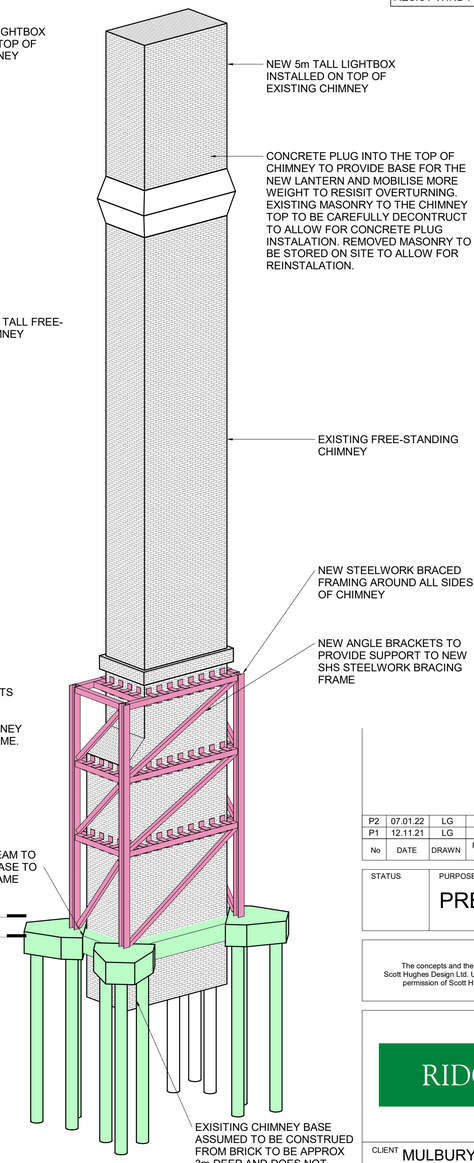
A 0051 DETAIL A

1 : 25



A-A ELEVATION A-A

1 : 100



FULL 3D VIEW

NOTE

ALL STEELWORK IS TO BE GALVANISED.

ALL BELOW GROUND STEELWORK IS TO BE ENCASED IN MINIMUM 100MM RC28/35 CONCRETE.

ALL CONCRETE TO BE RC28/35 UNO.

DO NOT SCALE FROM DRAWING

STEELWORK SIZES
(UNLESS NOTED OTHERWISE)

ALL STRUCTURAL COLUMNS - **UC254x254x73**

ALL STRUCTURAL BEAMS - **SHS200x200x8**

ALL STRUCTURAL BRACING - **SHS150x150x8**

PRELIMINARY OPTION FOR DISCUSSION - STEEL STRENGTHENING FRAME AND PROPOSED FOUNDATION TO RESIST WIND FORCES AND FRAME SELF-WEIGHT ONLY

No	DATE	DRAWN	REVD ENG.	AMENDMENT
P2	07.01.22	LG	BB	REVISED AS INDICATED
P1	12.11.21	LG	BB	PRELIMINARY ISSUE

STATUS: PRELIMINARY

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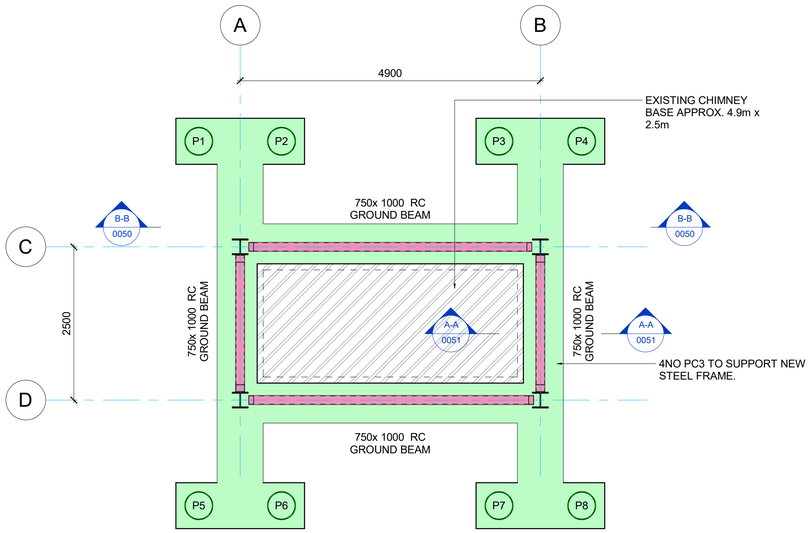
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DRAFTER	ENGINEER
LG	BB

TITLE: CHIMNEY STRENGTHING WORKS

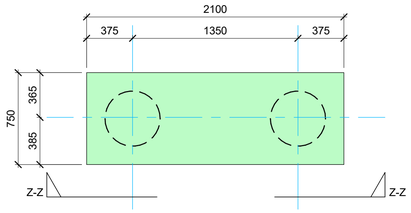
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As indicated	A1	5015327-RDG-00-ZZ-DR-S-0051	P2

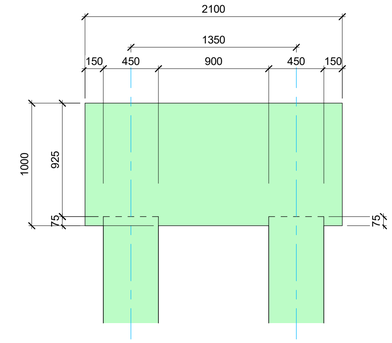


BASE PLAN

1 : 50



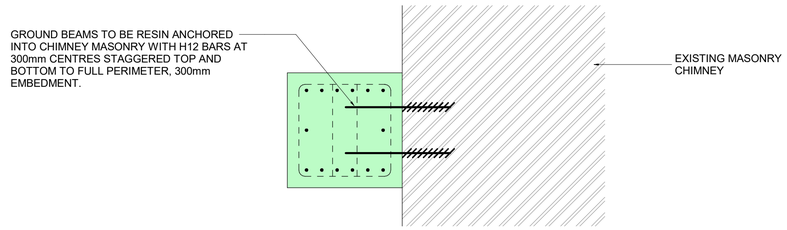
PLAN



DETAIL Z-Z

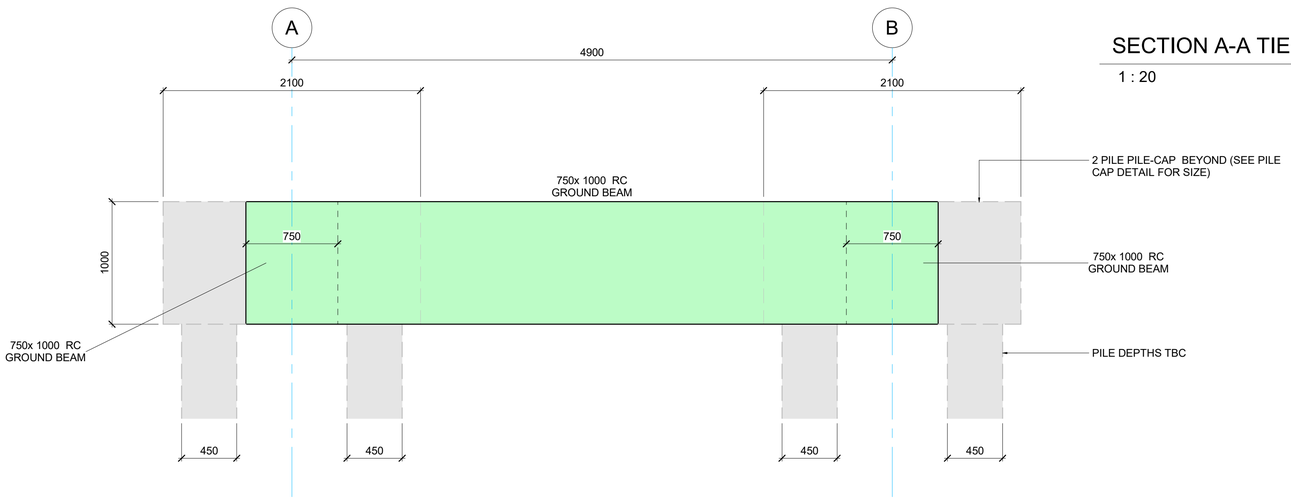
2 PILE PILE-CAP

1 : 25



SECTION A-A TIE DETAIL

1 : 20



SECTION B-B

1 : 25

PILE SCHEDULE

PILE REF.	EASTINGS	NORTHINGS	Cut Off - Pile Cap Depth	Gk (vert) (kN)	Qk, i (vert) (kN)	Qk, wind (vert) (kN)	Tk (vert) (kN)	DA1 Comb1 (ULS-STR) Ed, max (vert) (kN)	DA1 Comb1 (ULS-STR) Ed, min (vert) (kN)	DA1 Comb2 (ULS-GEO) Ed, max (kN)	DA 1 Comb2 (ULS-GEO) Ed, min (kN)	DA1 Comb1 (ULS-STR) Ed, max (horiz) (kN)	Qk, wind (horiz) (kN)
P1				300	50	320	-320	935	-210	760	-115	115	75
P2				300	50	320	-320	935	-210	760	-115	115	75
P3				300	50	320	-320	935	-210	760	-115	115	75
P4				300	50	320	-320	935	-210	760	-115	115	75
P5		TO BE CONFIRMED		300	50	320	-320	935	-210	760	-115	115	75
P6				300	50	320	-320	935	-210	760	-115	115	75
P7				300	50	320	-320	935	-210	760	-115	115	75
P8				300	50	320	-320	935	-210	760	-115	115	75

CDM 2015 : RESIDUAL RISK

CONTRACTOR IS TO ENSURE STABILITY OF THE EXISTING CHIMNEY THROUGHT THE WORKS

WORKS ARE TO BE CONDUCTED IN LINE WITH THE AGREED METHOD OF PRACTICE AS SET OUT BY RIDGE AND WITH AGREEMENT OF BUILDING CONTROL.

VIBRATION IS TO BE MONITORED WITH THE FOLLOWING VELOCITY-ACTIONS TAKEN.

STATUS	RESULTANT PEAK PARTICLE VELOCITY (MM/S)	ACTION
GREEN	0 - 4mm/s	All vibrations are below 5mm/s- work may continue
AMBER	5 - 9mm/s	Work on site should be stopped and engineer consulted to assess any movement of the chimney or damage before continuing.
RED	10mm/s +	Work is to **STOP** immediately and engineer to review chimney condition. Working practices to be reviewed and agreed with engineer before recommencement.

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- FOR GENERAL NOTES GO TO DRAWING 5015327-RDG-00-ZZ-DR-S-0001

ALL CONCRETE TO BE RC28/35

No	DATE	DRAWN	REV'D ENG.	AMENDMENT
P1	29.04.22	KLM	BB	PRELIMINARY ISSUE

STATUS	PURPOSE OF ISSUE
S2	FOR INFORMATION

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CLIENT MULBURY CITY

PROJECT GOULDEN STREET

DRAFTER LG | ENGINEER BB

TITLE

CHIMNEY FOUNDATION
LAYOUT AND DETAILS

Project Reference:

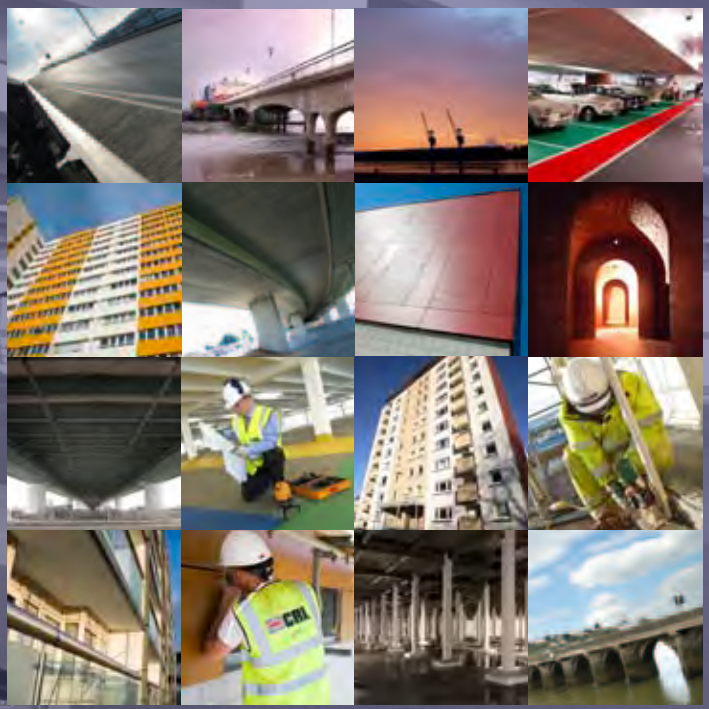
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As indicated	A1	5015327-RDG-00-FN-DR-S-0050	P1

APPENDIX B – CONDITION ASSESSMENT BY CRL SURVEYS (2018)

CRL
SURVEYS
structural & building assessment

CONDITION ASSESSMENT
OF
GOULDEN STREET CHIMNEY
FOR
SCOTT HUGHES DESIGN





continued success by continuous improvement

CONDITION ASSESSMENT
OF
GOULDEN STREET CHIMNEY
FOR
SCOTT HUGHES DESIGN

CONTRACT DETAILS

Contract No.:	SUR183512
Site:	The Former Police Station Chimney Goulden Street Manchester M4 5EZ
Customer:	Mulbury Homes (Goulden Street) Limited **c/o** Scott Hughes Design The Flint Glass Works 64 Jersey Street Manchester Greater Manchester M4 6JW **For the attention of: Mr Kris Clark**

FOR CRL SURVEYS

Documentation Authored By:	Simon Bladon BSc., MSc. CRL Surveys General Manager		
Report Prepared By:	Grzegorz Nowakowski Area Manager	**Signed:**	
Checked / Approved By:	Nigel Pierce BEng(Hons) Assistant Survey Manager	**Signed:**	

REPORT DETAILS

		Issue Record	
		Date	**Revision**
This Report Comprises:	14 pages of text Appendix A (5 Pages) Appendix B (5 Pages) Appendix C (9 Pages)	7th September 2018 28th September 2018	Draft Final

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UKAS Accreditation Address:- CRL Surveys, No.2 The Stables, 46 Castle Hill, Kenilworth CV8 1NB
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Opinions and interpretations expressed are outside the scope of UKAS accreditation.

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(9 PAGES) .....

END OF REPORT .....

1 REPORT REVISIONS RECORDS

Revised by	Date	Revision Details

2 INTRODUCTION

2.1 REFERENCES

CRL Surveys Proposals and Quotation Letter Ref: ESUR1630647/TB/tb dated 22nd July 2018

CRL Surveys Revised Quotation Ref: ESUR1630647 Rev1 dated 16th May 2018

Email with Instructions from Mr Kris Clark (Scott Hughes Design) to Mr Simon Bladon (CRL Surveys) on 4th July 2018

2.2 GENERAL BACKGROUND

CRL Surveys were asked by Mr Kris Clark of Scott Hughes Design acting at the direction of Mulbury Homes (Goulden Street) Limited to carry out a condition survey of the former police station chimney at Goulden Street in Manchester.

We were particularly asked to carry out a full visual inspection of the structure, remove brick samples for compressive strength and prepare mortar samples for 'Mix Composition'. We were also asked to establish the structural form of the chimney.

Our Technicians attended site on 22nd August 2018 and their findings are detailed as follows.

3 'SITE' DETAILS

The former Victorian fire and police station on Goulden Street in Manchester was constructed in 1872 and Grade II listed in 1992. The building suffered major fire damage in November 2002 when being used as a fireworks store, during the national fire service strike. After demolition to make safe, the remaining structures consisted of the perimeter walls / columns and the main brick chimney.



A



B

Plate T1: Aerial (A) and general (B) view of the chimney. Image (A) courtesy of Google.

4 PROCEDURES

4.1 TERMS OF REFERENCE

Dimensional measurement is undertaken as an inherent part of many of the following activities and although all dimensions recorded should be taken as 'approximate', every effort has been made to ensure the precision and accuracy of the approximations.

All dimensional measurements less than, 'nominally', 300mm, e.g. where checking reinforcement bar diameters, measuring depths of drilling (dust samples), measuring depths of carbonation, or measuring small defects etc., were measured using calibrated steel rules, manufactured to EU Class I. Where steel rules would not fit, e.g. within small breakouts etc., engineers dividers were employed, with dimensions transferred from a calibrated steel rule manufactured to EU Class I. Such measurements were generally rounded to the nearest whole mm.

All dimensional measurements greater than, 'nominally', 300mm, e.g. where measuring larger defect sizes or structural dimensions, were undertaken using measuring tapes manufactured to EU Class I.[1] We again generally rounded such measurements to the nearest whole mm.

> **NB:** The condition of the steel rules, measuring tapes, and engineer's dividers were checked prior to every shift / measurement and only used if in good condition, i.e. the ends / edges / points were straight, sharp and undamaged, with the gradations / values / markings clearly legible.

4.2 GENERAL DEFECTS AND DILAPIDATIONS

The structure was subjected to, as far as practicable, a full close-quarters visual inspection following the procedure described within Concrete Repairs Limited (CRL Surveys), Documented In-house Procedure CRLS STP01.

This procedure is covered by Concrete Repairs Limited (CRL Surveys) UKAS Accreditation, UKAS Ref: 2728. For further details please visit www.ukas.org.

UKAS TESTING
2728

4.3 MASONRY STRUCTURAL DETAILS

4.3.1 Unit Strengths

4.3.1.1 Sampling

A 'Set' of brick samples, each comprising specimens of similar 'sound' bricks from similar locations, were carefully removed from the structure using small hand-held tools.

Each brick specimen was uniquely referenced and sealed into a plastic Sample bag, with its sampling location recorded.

4.3.1.2 Testing

Each brick specimen was submitted to a UKAS Accredited Laboratory for compressive strength testing in general accordance with BS3921[2].

BS3921 requires that each 'test' should be carried out using a 'set' of 10No. bricks.

4.3.2 Mortar Bedding

[1] Proprietary steel 'pocket' tapes were not used due to potential inaccuracies with the loose fixing and / or deterioration of the end 'hooks'.
[2] BS3921: 1985, "Specification for Clay Bricks".

4.3.2.1 Sampling

Samples of mortar were prepared in accordance with BS 4551[3], in particular Sub-clause 5.3[4].

Samples were sealed into individually, uniquely labelled, plastic Sample bags, with the sampling location recorded.

4.3.2.2 Analysis

The samples were then submitted to a UKAS Accredited Laboratory for preparation and chemical analysis, for the calculation of mortar mix proportions, in general accordance with BS 4551.

4.4 STRUCTURAL FORM

The form of construction was investigated using non-destructive direct / indirect measurements aided by various fibre-optical borescopes / endoscopes inserted through existing holes. Due to the chimney being Grade II listed intrusive techniques were not used.

[3] BS 4551, "Mortar – Methods of test for mortar – Chemical analysis and physical testing"
[4]Clause 5, "Sampling", Sub-Clause 5.3, "Hardened mortars"

5 INVESTIGATION RESULTS

5.1 GENERAL

The detailed results of our investigations have been prepared as various drawings which have been presented within **Appendix A** and **Appendix B**, with a copy of the Laboratory Analysis Report included as **Appendix C**.

The investigation results are discussed, in summary, below.

> **NB:** The provision of the following summary should not be considered to nullify the requirement for the owners of, or those responsible for the ongoing design and repair or maintenance of this structure to review and understand the detailed results. CRL Surveys accept no liability for misunderstandings, or knock-on effects, including costs, arising from the sole reliance on the following summary. CRL Surveys remain committed to this project and, as far as practicable, on hand to expand or clarify any points of uncertainty.

5.2 GENERAL DEFECTS AND DILAPIDATIONS

> **Please Note:** The following photographs were prepared to illustrate the typical types of defects encountered, rather than to be a representation of the overall condition of the structures concerned, i.e. in this context the 'good' were not photographed, and the impression given may therefore be unduly pessimistic.



A



B

Plate T2: The cast iron and concrete elements at the top of the chimney were found to be displaced.



Plate T3: The steel frame supporting the slabs to the top of the chimney was extensively corroded.



Plate T4: The decorative grilles were also very badly corroded.



Plate T5: Spalled top corner of a stone sill.



Plate T6: Displaced supporting corbels.



A



B

Plate T7: The mortar pointing and brickwork was found to be in a very poor condition throughout the structure.

5.3 MASONRY STRUCTURAL DETAILS

5.3.1 Unit Strengths

The brickwork units' strength ranged between 9.5 N/mm^2 and 25 N/mm^2 with an average of 21.0 N/mm^2.

5.3.2 Mortar Bedding

The mortar sample S1 was found to comprise a Portland cement and sand mix and was found to be richer than any Designation given in BS 4551:2005 + A2:2013. The sulphate content of the sample was found to be at a normal level. The other three mortar samples were found to comprise semi-hydraulic lime and sand mixes. Mortar sample S4 was also found to contain 9.8% by weight coal or ash in the aggregate.

5.4 STRUCTURAL FORM

The top part of the chimney (approximately 15m high) comprised of two brickwork flues with a number of voids surrounding the flues. Limited information was established on the construction of the lower portion, approximately 8.6m high. We envisage that the voids did not extend to the lower part. The thickness of the external brickwork wall, measured at the existing opening, was found to be approximately 950mm.

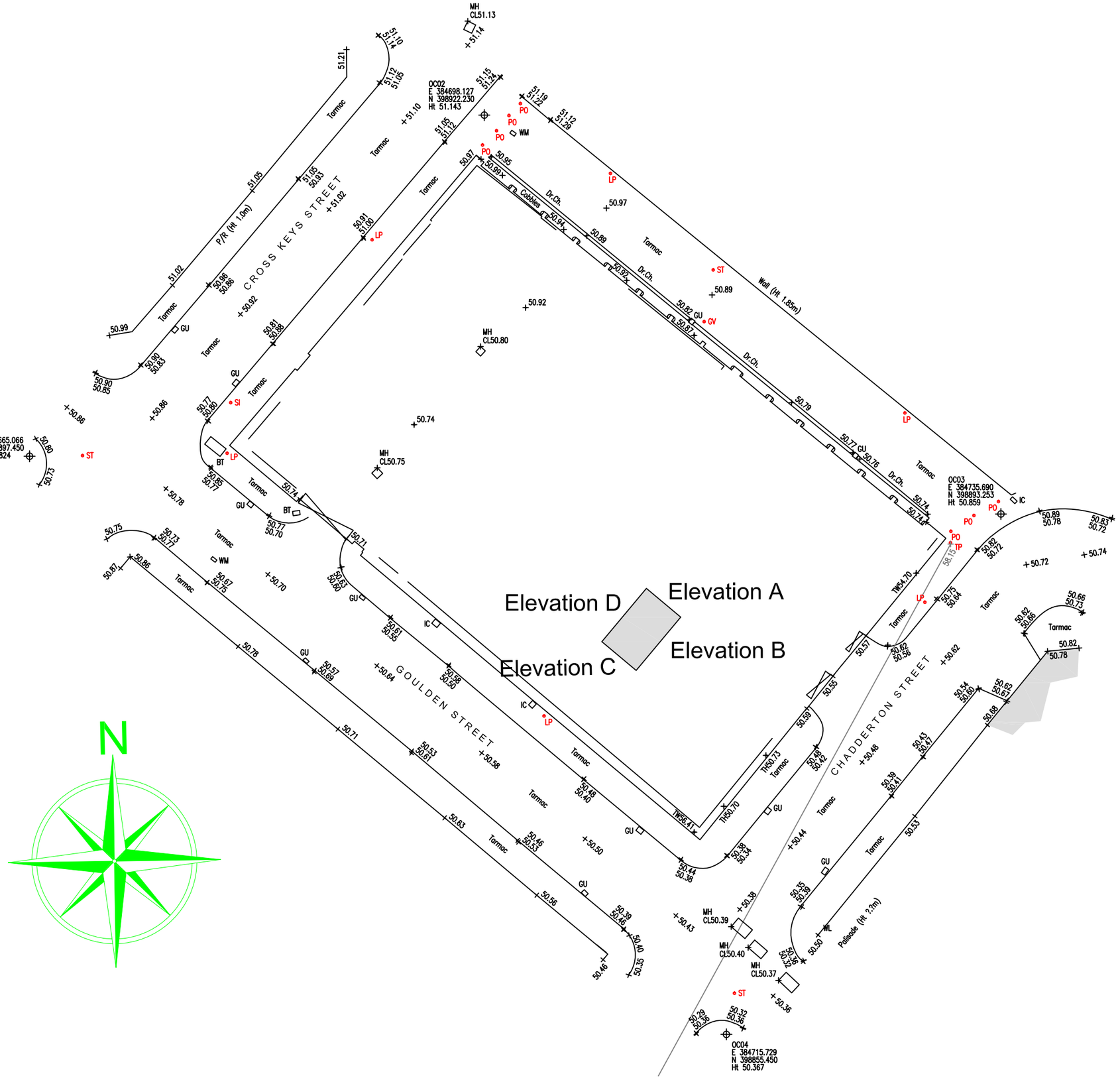
6 REMARKS

This report concludes the programme of investigation works requested to date.

APPENDIX A: DETAILED VISUAL INSPECTION RESULTS

(5 PAGES)

DO NOT SCALE



Notes:
1. Sizes and Locations of defects are indicative only.
2. Do not scale this drawing.

Revision	By	Date	Description

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PORTLAND HOUSE
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c/o
Scott Hughes Design

Project Title:
Goulden Street
Chimney

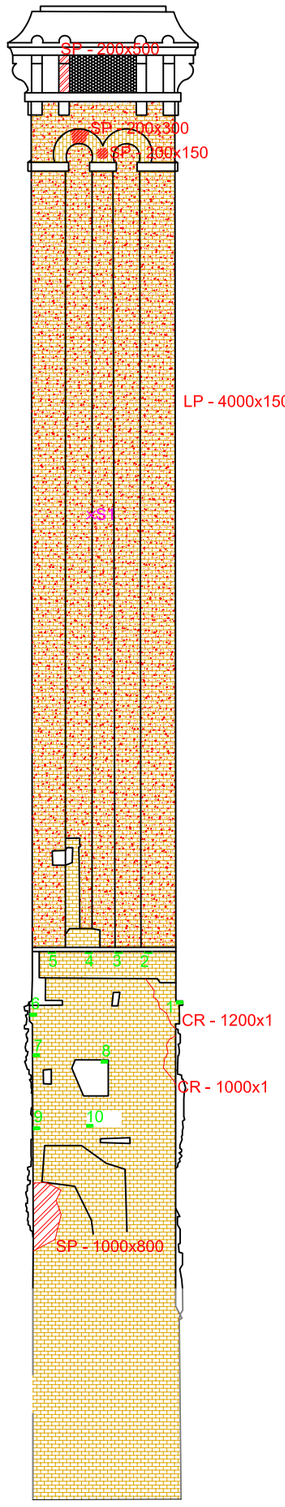
Drawing Title:
Kay Plan

Drawn By:	LC	Date:	Aug 2018
Checked By:	GN	Date:	Aug 2018
Approved By:	GN	Date:	Aug 2018
Drawing Number:	SUR183511/01	Revision	0
Dwg Scale:	NTS	Dwg Status:	FInal

CAD Filename:

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DO NOT SCALE



Notes:
1. Sizes and Locations of defects are indicative only.
2. Do not scale this drawing.

VISUAL INSPECTION LEGEND

- Spalled Brickwork (SP)
- Surface Erosion (SE)
- Crack (CK)
- Loose Pointing (LP)
- Poor Pointing (PP)
- 131 — Defect Reference Number
- Brick ork Samples
- S1 — Mortal Samples Locations

Revision	By	Date	Description

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c/o
Scott Hughes Design

Project Title:
Goulden Street
Chimney

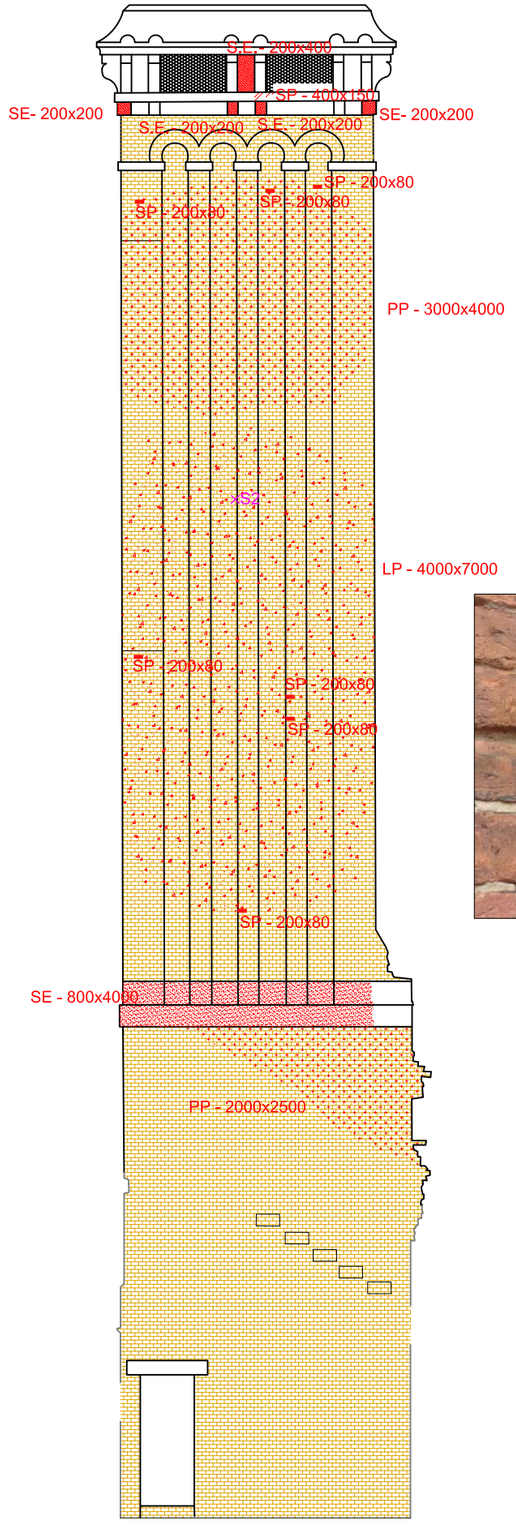
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Drawn By:	LC	Date:	Aug 2018
Checked By:	GN	Date:	Aug 2018
Approved By:	GN	Date:	Aug 2018
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CAD Filename:

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DO NOT SCALE





Notes:
1. Sizes and Locations of defects are indicative only.
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VISUAL INSPECTION LEGEND

- Spalled Brickwork (SP)
- Surface Erosion (SE)
- Crack (CK)
- Loose Pointing (LP)
- Poor Pointing (PP)
- 131 Defect Reference Number
- Brick ork Samples
- S1 Mortal Samples Locations

Revision	By	Date	Description

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Scott Hughes Design

Project Title:
Goulden Street
Chimney

Drawing Title:
Elevation B

Drawn By: LC Date: Aug 2018
Checked By: GN Date: Aug 2018
Approved By: GN Date: Aug 2018
Drawing Number: SUR183511/03
Revision: -
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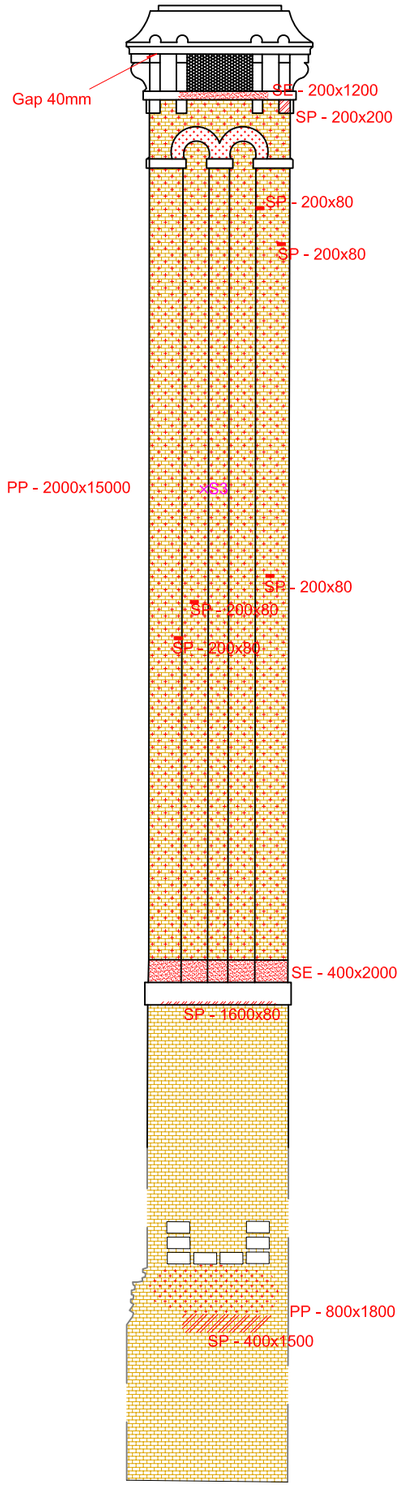
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Notes:
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VISUAL INSPECTION LEGEND

- Spalled Brickwork (SP)
- Surface Erosion (SE)
- Crack (CK)
- Loose Pointing (LP)
- Poor Pointing (PP)
- 131 — Defect Reference Number
- Brick ork Samples
- S1 — Mortal Samples Locations

Revision	By	Date	Description

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Scott Hughes Design

Project Title:
Goulden Street
Chimney

Drawing Title:
Elevation C

Drawn By: LC Date: Aug 2018
Checked By: GN Date: Aug 2018
Approved By: GN Date: Aug 2018

Drawing Number: SUR183511/04
Revision: 0

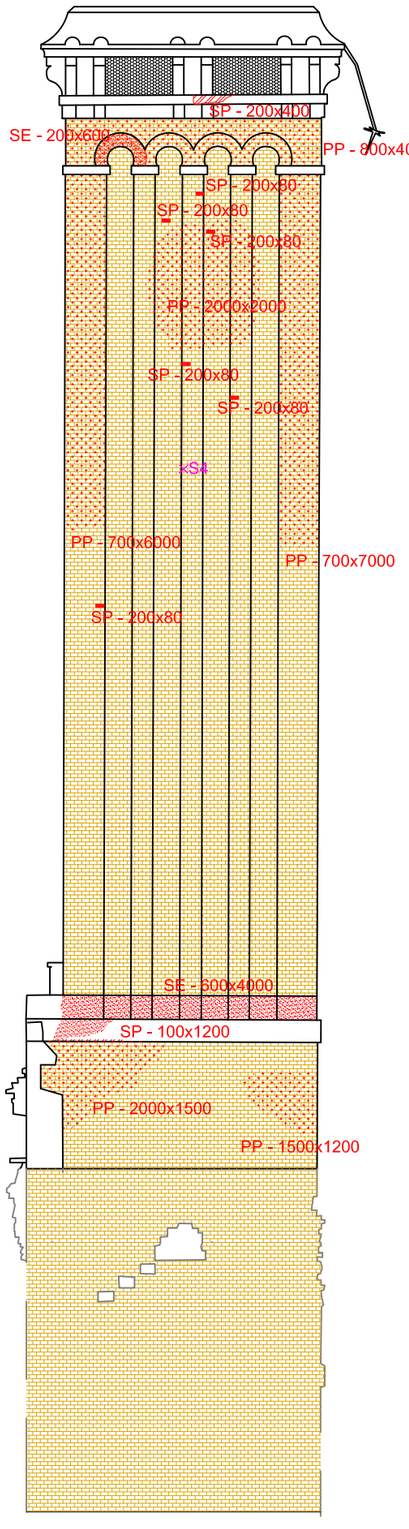
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Notes:
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VISUAL INSPECTION LEGEND

- Spalled Brickwork (SP)
- Surface Erosion (SE)
- Crack (CK)
- Loose Pointing (LP)
- Poor Pointing (PP)
- 131 — Defect Reference Number
- Brick ork Samples
- S1 — Mortal Samples Locations

Revision	By	Date	Description

CRL SURVEYS
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Client:
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c/o
Scott Hughes Design

Project Title:
Goulden Street
Chimney

Drawing Title:
Elevation D

Drawn By: LC Date: Aug 2018
Checked By: GN Date: Aug 2018
Approved By: GN Date: Aug 2018
Drawing Number: SUR183511/05
Revision: 0
Dwg Scale: NTS
Dwg Status: FInal

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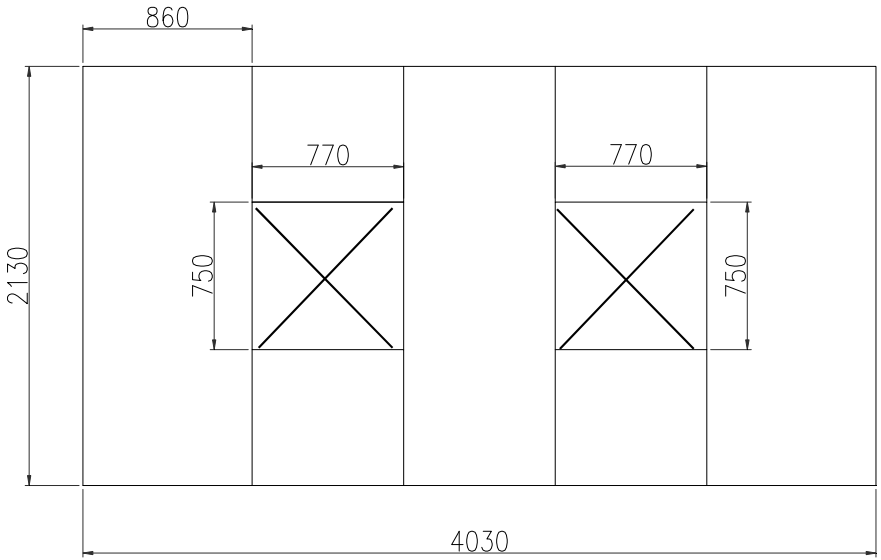
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APPENDIX B: DETAILED CONSTRUCTION FORM RESULTS

(5 PAGES)



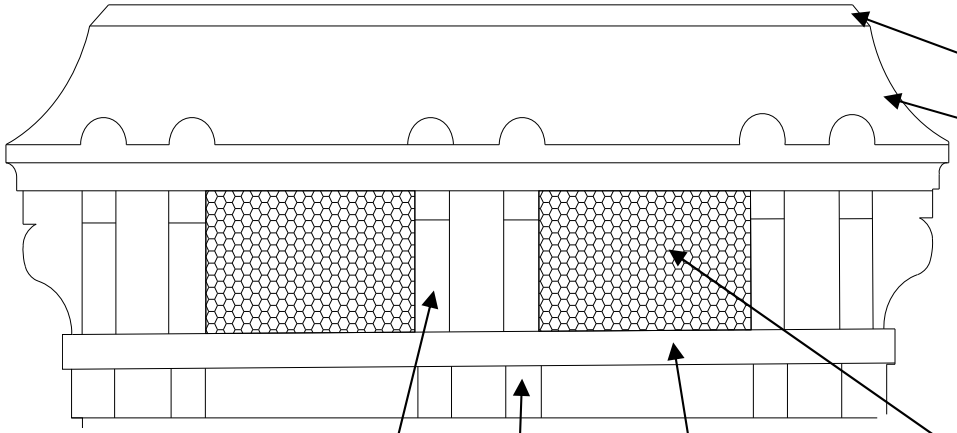




General view from top

SITE	DETAILS	DATE	CONTRACT NO.	INITIALS
Goulden Street Chimney	Structural Form	Aug 2018	SUR183512	LC

CRL SURVEYS
Structural and building assessment





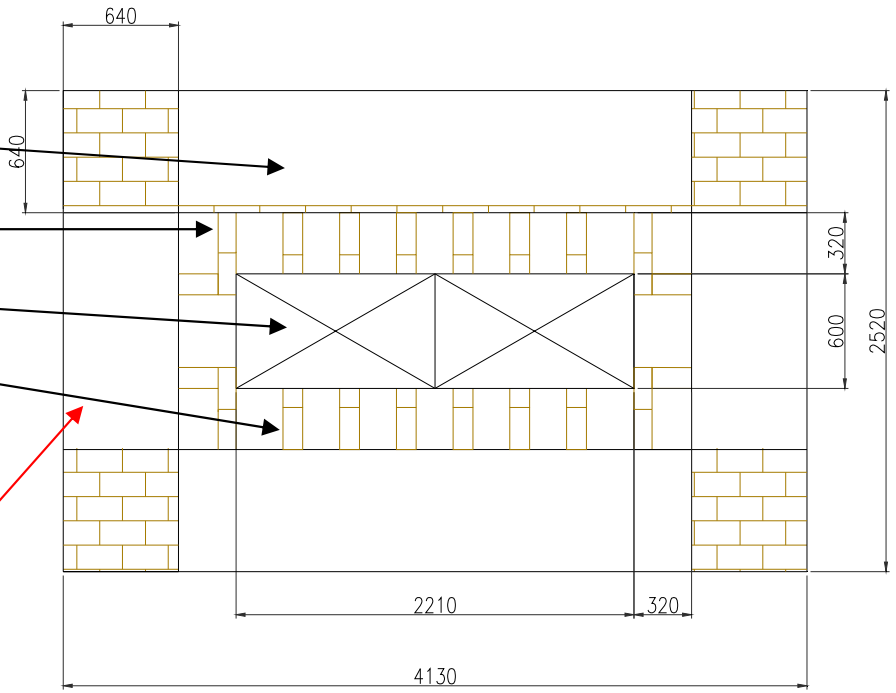




SITE	DETAILS	DATE	CONTRACT NO.	INITIALS	
Goulden Street Chimney	Structural Form	Aug 2018	SUR183512	LC	CRL SURVEYS Structural and building assessment

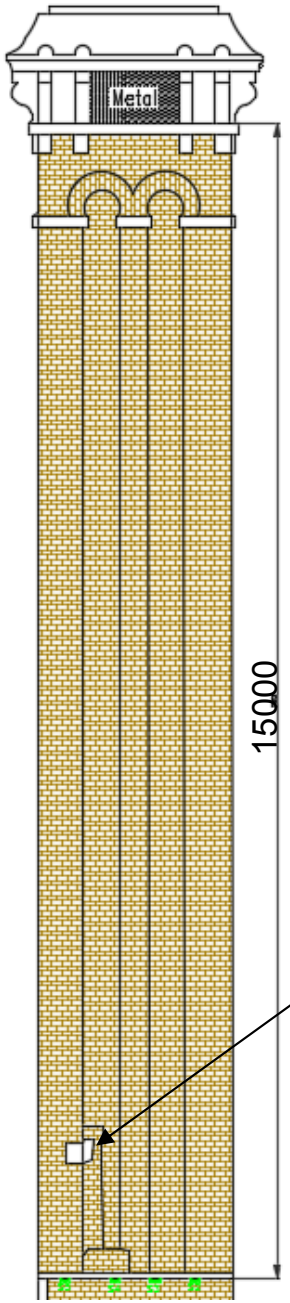






SITE	DETAILS	DATE	CONTRACT NO.	INITIALS
Goulden Street Chimney	Structural Form	Aug 2018	SUR183512	LC

CRL SURVEYS
Structural and building assessment

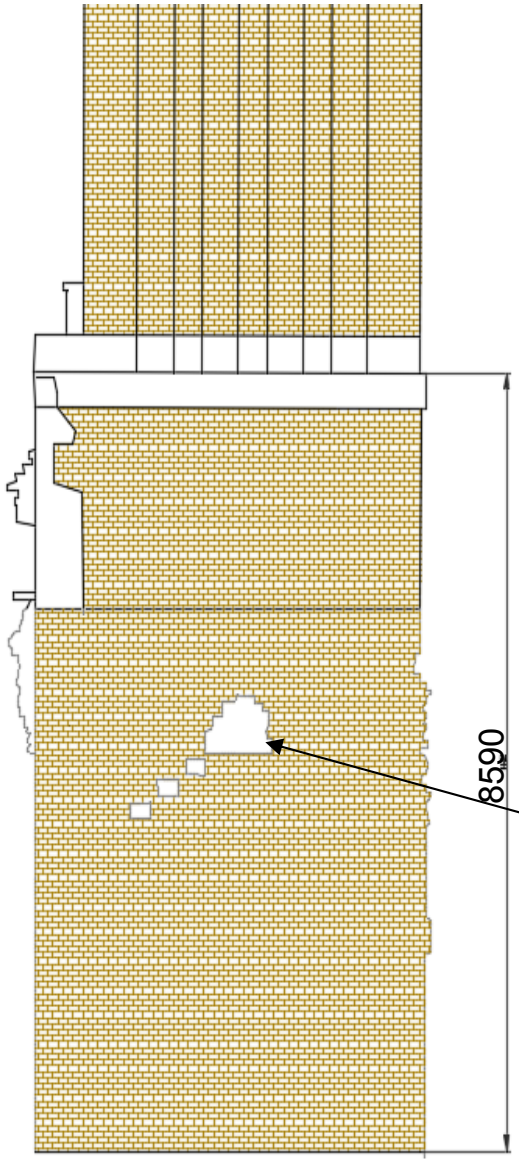




Voids Visible through an Opening

SITE	DETAILS	DATE	CONTRACT NO.	INITIALS
Goulden Street Chimney	Structural Form	Aug 2018	SUR183512	LC

CRL SURVEYS
Structural and building assessment





Voids not Visible above an Opening



Approximate wall thickness 950mm

SITE	DETAILS	DATE	CONTRACT NO.	INITIALS
Goulden Street Chimney	Structural Form	Aug 2018	SUR183512	LC

CRL SURVEYS
Structural and building assessment

APPENDIX C: LABORATORY ANALYSIS AND TEST REPORT

(9 PAGES)

SANDBERG

REPORT 61654/C/72

THE FORMER POLICE STATION CHIMNEY

ANALYSIS OF BRICKS AND MORTAR SAMPLES

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REPORT 61654/C/72

THE FORMER POLICE STATION CHIMNEY

ANALYSIS OF BRICKS AND MORTAR SAMPLES

Concrete Repairs Limited
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For the attention of Mr Greg Nowakowski

This report comprises
3 pages of text
Table 1 of 2 sheets
Table 2 of 1 sheet

19 September 2018

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Senior Associates: R D Easthope I M Hudson S R P Morris M I Ingle M Faliva R A Lucas A L Pitman D A Kinnersley
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REPORT 61654/C/72

THE FORMER POLICE STATION CHIMNEY

ANALYSIS OF BRICKS AND MORTAR SAMPLES

Reference: Order Number 000473 SUR183512 dated 23 August 2018.

1. INTRODUCTION

Four mortar samples, taken by yourselves from the above project, were received in our laboratories on 29 August 2018.

We were asked to carry out analysis to determine the mix composition and proportions of the mortar samples.

Ten brick samples were received at the same time for compressive strength testing.

2. SAMPLE DETAILS

Details of the samples are given in the results tables.

3. ANALYSIS METHOD AND RESULTS

3.1 Determination of Mix Proportions

The mortar samples were prepared and analysed using documented in-house methods based on BS 4551:2005 + A2:2013 “Methods of test for mortar”.

As examination of the analysis data indicated that the mix for sample C97119 (S1) consisted of Portland cement and sand, the mix proportions were calculated on this assumption, following the directions given in Table 3 of BS 4551.

As examination of the other three mortar samples indicated that the mixes comprised semi-hydraulic lime and sand, the mix proportions were calculated on this assumption, following documented in-house methods.

The cement content for sample C97119 (S1) was calculated from the acid soluble calcium content making the assumptions shown in the analysis Table. Since the result was outside the categories listed in Table 4 of BS 4551, the approximate volume proportions were calculated assuming the average bulk densities of the constituents which are given in BS 4551.

The lime contents were calculated from the acid soluble calcium contents making the assumptions shown in the analysis Tables. The approximate volume proportions were calculated using typical bulk densities for the constituents as indicated in the analysis tables.

Details of the analysis are given in Table 1 of this report, including details of the assumptions made in the calculations. The mix proportions are summarized below:

Sample Reference	Client Reference	Mix Type	Mix proportions by volume	Designation from BS 4551 : 2005
C97119	S1	Portland cement : sand	1 : 2.1	-*

-* Richer than any Designation given in 4551:2005 + A2:2013.

Sample Reference	Client Reference	Mix Type	Mix proportions by weight	Mix proportions by volume
C97120	S2	Semi-hydraulic lime : sand	1 : 2.8	1 : 1.1
C97121	S3	Semi-hydraulic lime : sand	1 : 3.0	1 : 1.2
C97122	S4	Semi-hydraulic lime : sand	1 : 5.7	1 : 2.3

3.2 Compressive Strength of Brick Samples

The ten brick samples were capped with high alumina cement mortar and used to determine compressive strength in accordance with BS EN 3921:1985.

The test results are given in Table 2.

4. **REMARKS**

The mortar sample C97119 (S1) was found to comprise a Portland cement and sand mix and was found to be richer than any Designation given in BS 4551:2005 + A2:2013.

The sulphate content of the sample was found to be at a normal level.

The other three mortar samples were found to comprise semi-hydraulic lime and sand mixes.

Mortar sample C97122 (S4) was also found to contain 9.8% by weight coal or ash in the aggregate.

Concrete Repairs Limited
Portland House
Britannia Road
Chesterfield
S40 2TZ

for Sandberg LLP

G S Mayers

G S Mayers
Department Manager
19 September 2018

For the attention of Mr Greg Nowakowski

Materials, samples and test specimens are retained for a period of 2 months from the issue of the final report.

Tests reported on sheets not bearing the UKAS mark in this report/certificate are not included in the UKAS accreditation schedule for this laboratory.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

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0262

61654/C/72

Table/Sheet
1/1 of 2

Date of Test
14-17/09/18

MORTAR - CHEMICAL ANALYSIS
DETERMINATION OF MIX PROPORTIONS

Documented In-house Methods 34.1(*) and BS 4551:2005+A2:2013

Sandberg Reference	**C97119**			
Client Reference	**S1**			
Details	**Mortar**			
CHEMICAL ANALYSIS	**% by mass**			
Insoluble Residue	**58.72**			
Soluble Silica, SiO_2*	**6.42**			
Acid soluble Alumina, Al_2O_3*	**1.68**			
Acid soluble Iron, Fe_2O_3*	**0.84**			
Acid soluble Calcium, CaO	**16.48**			
Acid soluble Magnesium, MgO	**1.62**			
Acid soluble Sulphate, SO_3	**0.86**			
Loss on Ignition	**13.01**			
Total	**99.63**			

Calculated Mix Proportions				
Composition to nearest 0.5%	**% by mass of dry mass**			
Portland cement : sand				
Portland cement	**29.5**			
Sand	**70.5**			
Calculated volume	**1 : 2.1**			
Mortar Designation From Table 4, BS4551 : 2005	**-***			
Sulphate % by mass of cement	**4.0**			

-*Richer than any Designation given in 4551:2005 + A2:2013.

Assumptions used in calculations	SiO_2 %	CaO %	bulk density kg/m^3	material type
Sand	0.2	0.0	1675	Siliceous
Portland cement	20.5	64.5	1450	OPC

SANDBERG

UKAS TESTING
0262

61654/C/72

Table/Sheet
1/2 of 2

Date of Test
14-17/09/18

MORTAR - CHEMICAL ANALYSIS
DETERMINATION OF MIX PROPORTIONS

Documented In-house Methods 34.1(*) and BS 4551:2005+A2:2013

Sandberg Reference	C97120	C97121	C97122	
Client Reference	S2	S3	S4	
Details	mortar	mortar	mortar	
CHEMICAL ANALYSIS		% by mass		
Insoluble Residue	65.31	67.35	79.46	
Soluble Silica, SiO_2*	1.04	1.03	1.54	
Acid soluble Alumina, Al_2O_3*	0.36	0.40	0.61	
Acid soluble Iron, Fe_2O_3*	0.26	0.28	0.89	
Acid soluble Calcium, CaO	14.73	14.21	9.17	
Acid soluble Magnesium, MgO	1.42	1.38	0.20	
Acid soluble Sulphate, SO_3	1.10	1.21	2.59	
Loss on Ignition	15.31	13.89	5.42	
Combustible material			(9.83)	
Total	99.53	99.75	99.88	

Calculated Mix Proportions				
Composition to nearest 0.5%	% by mass of dry mass			
Semi-hydraulic lime : sand				
Lime	26.5	25.0	15.0	
Sand	73.5	75.0	85.0	
Calculated volume proportions	1 : 1.1	1 : 1.2	1 : 2.3	
Remarks	Feebly hydraulic	Feebly hydraulic	Feebly hydraulic	

Assumptions used in calculations	SiO_2 %	CaO %	bulk density kg/m^3	material type
Sand	-	0.0	1400	siliceous
Semi-hydraulic lime	-	62.0	575	Semi- hydraulic

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UKAS TESTING
0262

61654/C/72

Table/Sheet
2/1 of 1

Date of Test
3/9/2018

BRICK TEST RESULTS
COMPRESSIVE STRENGTH
BS 3921:1985, Appendix D(s/s)[1]

Sandberg Sample Reference	C97109-18
Client Sample Reference	The Former Police Station Chimney
Type:	Used clay solid
Mean strength of mortar used to fill frogs at test, days, N/mm²	-

Sandberg Specimen Reference	Client Specimen Reference	Surface Area mm²	Maximum Failing Load kN	Compressive Strength[2] N/mm²
7386	-	23100	470	20.3
7387	-	23400	594	25.4
7388	-	23296	425	18.2
7389	-	24168	249	10.3
7390	-	24640	742	30.1
7391	-	22800	768	33.7
7392	-	25850	246	9.5
7393	-	23088	446	19.3
7394	-	22680	432	19.0
7395	-	25080	610	24.3
			Average	21.0

[1] BS 3921:1985 has been withdrawn and replaced by parts of BS EN 771 and BS EN 772 series. However for the purposes of testing reclaimed bricks we have continued to use BS 3921 methods.

[2] To the nearest 0.1 N/mm²

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This report shall not be reproduced, except in full, without the written approval of Sandberg LLP.

Where our involvement consists exclusively of testing samples, the results and our conclusions relate only to the samples tested.

END OF REPORT

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APPENDIX C – GROUND INVESTIGATION (CHIMNEY BASE) BY E3P (2021)

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Taylor Road
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Urmston
Manchester
M41 7JQ

Manchester | London | Edinburgh

info@E3P.co.uk
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Ref: 12-728-L1
Date: 25th August 2021

Klara Ludinova
Ridge and Partners LLP
Belvedere House, 5th Floor
12 Booth Street
Manchester
M2 4AW

BY Email

Dear Klara,

GROUND INVESTIGATION (CHIMNEY BASE) GOULDEN STREET, MANCHESTER

1. BACKGROUND AND OBJECTIVES

E3P has been commissioned by Ridge and Partners LLP to undertake a phase of supplementary site works as part of the redevelopment of the site for residential end use.

The brief for the works was to undertake a Ground Investigation to confirm the depth and extent of the chimney base at the site. The chimney is to be retained as part of the redevelopment scheme.

The Proposed Development Scheme is presented in Appendix I.

1.1. SITE HISTORY

The site has been occupied by amenity and industrial buildings throughout its mapped history, including police station, ambulance station and garage.

Most of the former buildings have been demolished, however, a perimeter high wall remains and a chimney structure in the southern sector.

2. GROUND CONDITIONS

E3P attended site on the 19th July 2021 to complete the intrusive works and the ground conditions identified are summarised herein.

The Exploratory Hole Location Plan is presented in Appendix I and the Exploratory Logs presented in Appendix II.

2.1. MADE GROUND

Made Ground was encountered in all exploratory locations to a proven depth of between 2.60-3.50m bgl. The Made Ground deposits typically comprised a gravelly clay, with granular constituents of brick, concrete, timber, plastic and mixed lithology.

E3P identified the presence of brick foundations beneath the chimney [Plate 1 and 2] in TT203 and TT204, however, these foundations were not noted to extend further than 1.00m beyond the footprint of the chimney. The full depth of the brick footing could not be proven due to sidewall collapse in the trial pits.

Anedotal information from the current site owners suggested that all basement structures were removed up to the base of the chimney and backfilled will loose end tipped material, as encountered within the exploratory locations.

2.2. DRIFT DEPOSITS

The drift deposits were encountered to a proven depth of 10.00 m bgl and deposits comprised a firm to stiff very stiff gravelly CLAY.

2.3. SOLID GEOLOGY

No solid geology was encountered during the site investigation works.

3. CONCLUSION

In conclusion, based on a series of rotary borehole and trial trenches, a brick footing foundation was noted beneath the chimney structure, however, no chimney base was identified which extends more than 1.00m laterally beyond the footprint of the structure.

I trust this information is satisfactory to your requirements, and should I be able to be of any further assistance, please do not hesitate to contact me.

Yours sincerely,

For and on behalf of E3P Ltd



Alex Smith
Associate Director

Enclosed

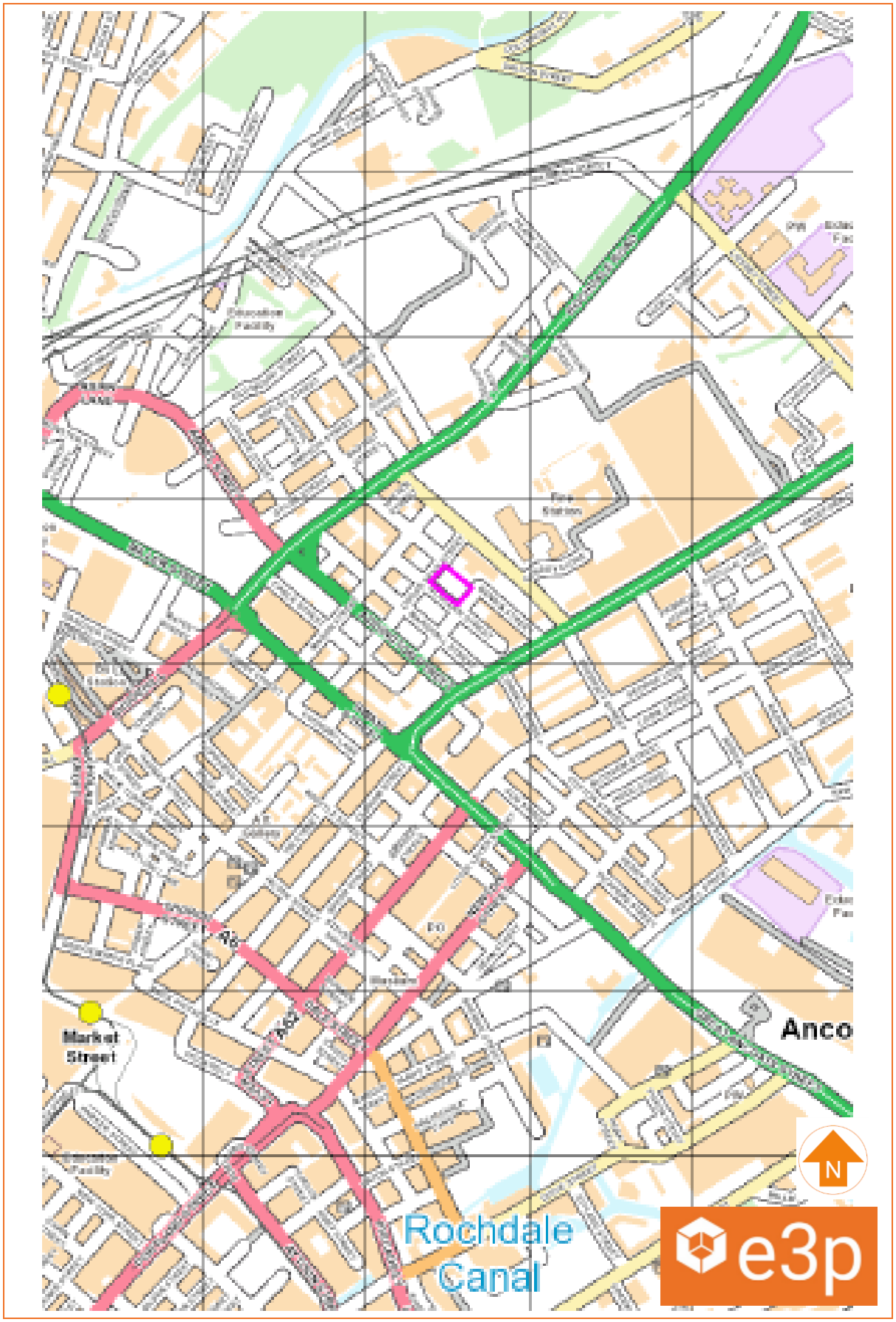
Appendix I Drawings

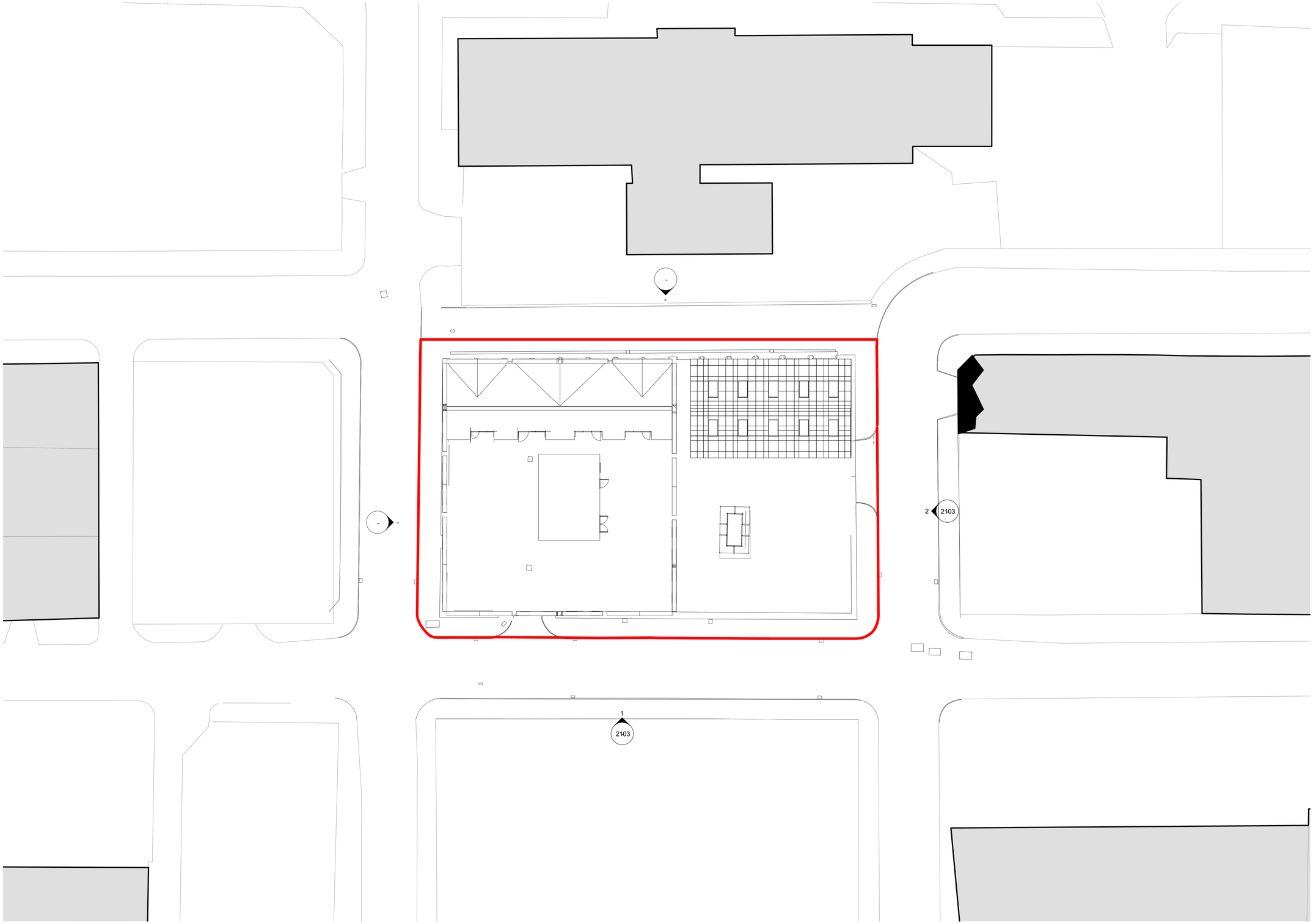
12-728-001 – Site Location Plan
12-728-005 – Exploratory Hole Plan

Appendix II Exploratory Hole Logs

APPENDIX I
DRAWINGS

DRAWING 14-578-001 – SITE LOCATION PLAN





0 1m 2 3 4 5 6 7 8 9 10m
SCALE BAR 1:200

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Dimensioning
Figured dimensions only to be taken from these designs and drawings. Work to annotated dimensions only. All dimensions to be checked on site. Architects to be informed immediately of any discrepancies before work proceeds. Drawings are to be read in conjunction with relevant specifications, structural engineers and service engineers' drawings. All data, dimensions and designs contained in this document are confidential to the copyright owner and may not be communicated to any third party save in accordance with a licence for the copyright owner or with the copyright owner's written permission and authority.

Rev	Description	Date
P2	Planning Submission	30.09.19

Client
Mulbury City

Project
Goulden Street

Title
Site Plan

Status
Planning

Project number
0321

Date
08/24/18

Drawn by
Author

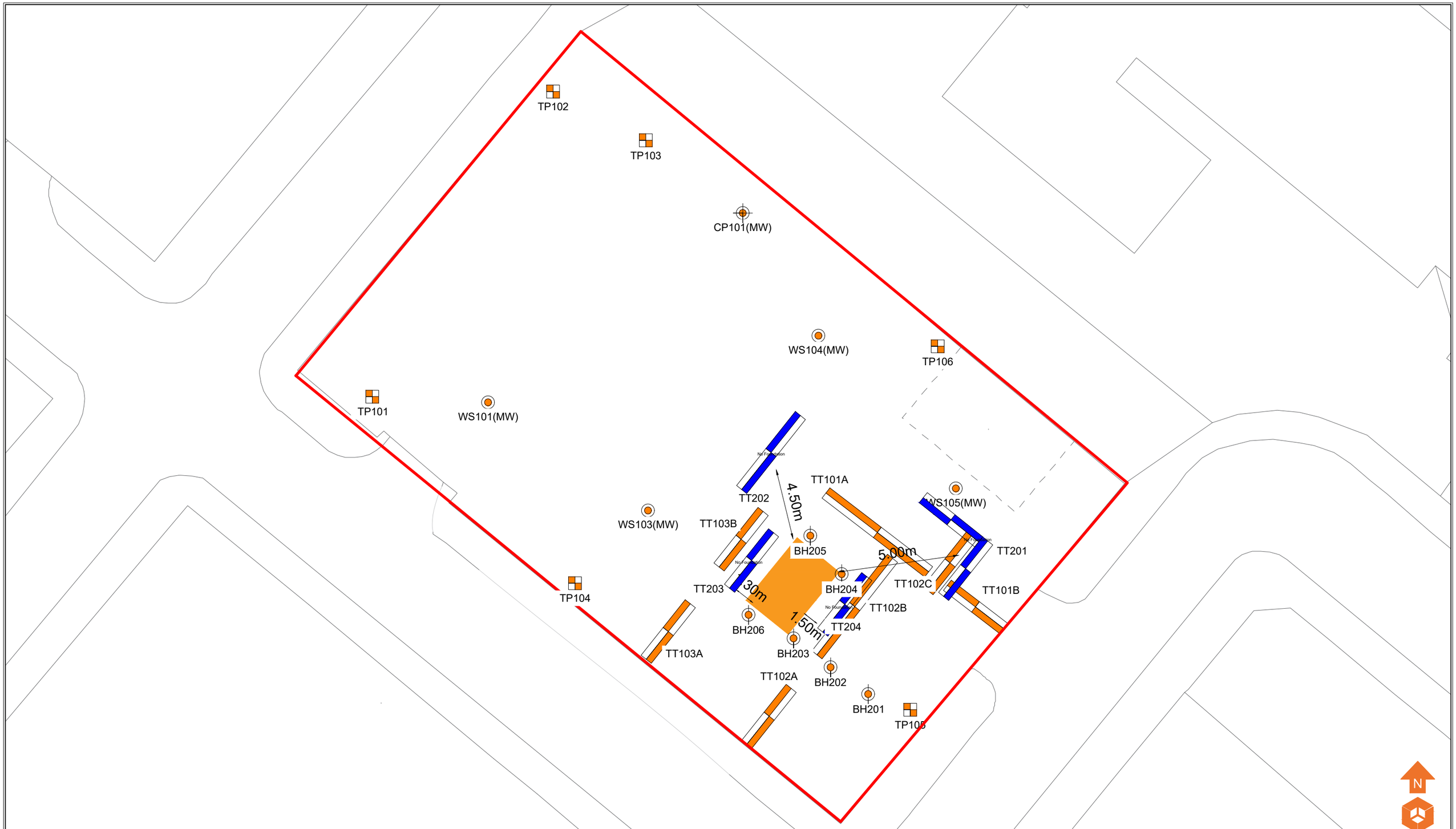
Checked by
Checker

Scale
1 : 200@A1

Revision
P2

Drawing No.
0321-TGA-XX-00-DR-A-0201

12/11/2019 15:05:01



Location Symbols

- Approximate Window Sample Probehole Location With Install
- Approximate Trial Pit Location
- Approximate Cable Percussive Borehole Location With Install
- Approximate Borehole Location
- Approximate Trial Trench Location

Notes:

Phase	Issue	Date	Drawn	Checked
P1	REVD	23.08.2021	EB	AS
P1	REVC	29.07.2021	EB	NG
P1	REVB	21.07.2021	EB	NG
P1	REVA	20.07.2021	HM	NG

Client: Scott Hughes Design

Job No: 12-728

Date: 23.08.2021

Drawing No: 011

Scale: NTS

Job Title: Goulden Street

Drawing Title: Exploratory Hole Location Plan (Chimney Base)

Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
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Tel: 0161 707 9612
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Website: www.e3p.co.uk

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APPENDIX II
EXPLORATORY HOLE LOGS

Trial Pit Log

TrialPit No TT201
Sheet 1 of 1

Project Name: Goulden Street	Project No. 12728	Co-ords: 384720.00 - 398893.00 Level:	Date
Location: Manchester		Dimensions (m):	Scale 1:30
Client: Mulbury City		Depth 3.50	Logged N.Gregory

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
				2.60			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
				3.50			End of Pit at 3.50m

1
2
3
4

Remarks:

Stability: Unstable.

Trial Pit Log

TrialPit No: TT202
Sheet 1 of 1

Project Name: Goulden Street	Project No. 12728	Co-ords: 384706.00 - 398900.00 Level:	Date
Location: Manchester		Dimensions (m):	Scale 1:30
Client: Mulbury City		Depth 3.15	Logged N.Gregory

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.05			MADE GROUND: Firm brown to black silty clay with rootlets and brick debris.
							MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
				3.00			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
				3.15			End of Pit at 3.15m

1
2
3
4

Remarks:

Stability: Unstable.

Trial Pit Log

TrialPit No TT203
Sheet 1 of 1

Project Name: Goulden Street	Project No. 12728	Co-ords: 384706.00 - 398894.00 Level:	Date
Location: Manchester		Dimensions (m):	Scale 1:30
Client: Mulbury City		Depth 3.50	Logged N.Gregory

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND: Red Coarse subrounded to angular Gravel with frequent bricks,pipes, timber,plastic and other lithologies.
				1.20			MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
				3.20			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
				3.50			End of Pit at 3.50m

1
2
3
4

Remarks: Visual inspection of the chimney identified brick foundation and presence of historic basement walls to the northwest of TT203.

Stability: Unstable.

Trial Pit Log

TrialPit No
TT204
Sheet 1 of 1

Project Name: Goulden Street	Project No. 12728	Co-ords: 384712.00 - 398892.00 Level:	Date
Location: Manchester		Dimensions (m):	Scale 1:30
Client: Mulbury City		Depth 3.80	Logged N.Gregory

Water Strike	Samples & In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
				3.30			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
				3.80			End of Pit at 3.80m

1
2
3
4

Remarks: Visual inspection of the chimney identified brick foundation and presence of historic basement walls to the southeast of TT204.

Stability: Unstable.

Borehole Log

Project Name: Goulden Street	Project No. 12728	Co-ords: 384710E - 398885N	Borehole No. **BH101** Sheet 1 of 1
Location: Manchester		Level:	Hole Type BH
Client: Mulbury City		Dates:	Scale 1:50
			Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.50			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					5.00			End of Borehole at 5.00m

Remarks

Borehole Log

Borehole No. **BH102**

Sheet 1 of 1

Project Name:	Goulden Street	Project No. 12728	Co-ords: 384707E - 398887N	Hole Type BH
Location:	Manchester		Level:	Scale 1:50
Client:	Mulbury City		Dates:	Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.30			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					7.00			End of Borehole at 7.00m

Remarks

Borehole Log

Borehole No. **BH103**

Sheet 1 of 1

Project Name:	Goulden Street	Project No. 12728	Co-ords: 384706E - 398888N	Hole Type BH
Location:	Manchester		Level:	Scale 1:50
Client:	Mulbury City		Dates:	Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.40			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					7.00			End of Borehole at 7.00m

1 2 3 4 5 6 7 8 9 10

Remarks

Borehole Log

Borehole No. **BH104**

Sheet 1 of 1

Project Name:	Goulden Street	Project No. 12728	Co-ords: 384711E - 398893N	Hole Type BH
Location:	Manchester		Level:	Scale 1:50
Client:	Mulbury City		Dates:	Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.20			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					10.00			End of Borehole at 10.00m

Remarks

Borehole Log

Borehole No. **BH105**

Sheet 1 of 1

Project Name:	Goulden Street	Project No. 12728	Co-ords: 384708E - 398895N	Hole Type BH
Location:	Manchester		Level:	Scale 1:50
Client:	Mulbury City		Dates:	Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.40			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					7.00			End of Borehole at 7.00m

1 2 3 4 5 6 7 8 9 10

Remarks

Borehole Log

Borehole No. **BH106**

Sheet 1 of 1

Project Name:	Goulden Street	Project No. 12728	Co-ords: 384703E - 398890N	Hole Type BH
Location:	Manchester		Level:	Scale 1:50
Client:	Mulbury City		Dates:	Logged By N.Gregory

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								MADE GROUND: Firm brown gravelly clay. Gravel is fine to coarse, angular to sub-angular of brick, concrete, sandstone, timber, plastics and mixed lithology.
					3.20			Firm to stiff brown mottled grey slightly gravelly CLAY. Gravel is fine subrounded of sandstone.
					7.00			End of Borehole at 7.00m

1 2 3 4 5 6 7 8 9 10

Remarks

APPENDIX III
PHOTOGRAPHS

PLATE 1 CORNER OF CHIMNEY WITH BRICK FOOTING / BASEMENT WALL EVIDENT (TT203)



PLATE 2 BRICK FOUNDATION PRESENT BENEATH CHIMNEY (TT204)



APPENDIX D – CONTRACTORS METHOD STATEMENT

SF-093-Method statement

W.A Construction

W.A Construction

Method Statement Title:			
Demolition & enabling works method statement - Relic industrial structure, Goulden Street, Manchester, M4 5EY			
Method Statement No.:	MS-11276-01-03	**Revision No. (start at 01)**	**03**
Project Name and number	Goulden street -11276	**Location of works**	**Ref - masonry repair site plan**
Prepared by:	Name: W.Abram	Signed: W.Abram	**Date 12/04/22**
Reviewed by:	Name: W. Abram	Signed: W.Abram	**Date 12/04/22**
Revision Detail:			
Revision No.:	**Revision Detail & Issue Status:**	**Completed by:**	**Issue Date:**

SF-093-Method statement

W.A Construction

01	First issue	TS	**12/04/22**
02	Second issue Pg. 23 Cast Column supervision removal	PC	**12/04/22**
03	Third issue – update on techniques to cast column removal, brick wall demolition and cut back dimensions.	PC	

NOTE: All REVISIONS completed will be completed in a different colour text than the previous revision to highlight changes made. Where DELETION required, strikethrough [e.g. ~~text no longer required~~].

NOTE: Where updating a previously revised document, grey out text that was previously double struck through [e.g. ~~text no longer required~~].

Description of work

Removal of asbestos materials.

Exert from R&D Survey, dated 19th July 2021.

We found the following asbestos containing materials to the building: - • A small pile of corrugate asbestos cement sheets were identified leant against the wall, within the near corner of the yard, measuring approximately 8 Sq. in total. This material should be removed and disposed of as asbestos waste. • Asbestos waste bags were identified mixed within the general building waste / madeground in the corner of the yard. The waste bags in question were found to be empty and, although the presence of the waste bags does not necessarily indicate the presence of an ACM, it is recommended that works that disturb this made-ground / waste material proceed with caution.

Demolition of specific sections of external walls (remote, progressive methods).

All demolished masonry to be removed in a careful and considerate manor.

Defined separate methodology to be provided for works prior to commencement.

Masonry to be neatly removed in preparation for cleaning and stacking.

All demolished brick walls to be removed in a careful and considerate manor.

Defined separate methodology to be provided for works prior to commencement.

Bricks to be cleaned, stacked on pallets, and shrink wrapped for off-site storage. (wrapped and removed by others)

Cast iron columns to be removed in a careful and considerate manor. The exact methodology for removal of the columns is to be provided by Henley restoration… WA construction are providing labour and machinery for the works.

Cast iron columns to be stacked on pallets (wrapped and removed by others)

SF-093-Method statement

W.A Construction

Glazed tiles to be removed in a careful and considerate manor. **Separate methodology to be provided for the works prior to commencement.** **Glazed tiles to be stacked on pallets (wrapped and removed by others**	
This method statement has been developed and must be read with the following risk assessments and associated documents	
RA or associated document reference number	**Title**
RA -11276-01-02	**RA- Goulden street**
Asbestos R&D survey	**AAC surveying 19th July 2021**
Work commences on	**3/05/22 (phase 1)**
Duration of work *(actual or estimated)*	**1 week prep clearing courtyard. 4 weeks demolition works**
Number of workers *(actual or estimated)*	**6 estimated**
Personnel *(include details of trades , job roles and detail skills or qualifications required)*	
Job role i.e. Banks man	**Training/competence required**
Demolition workers	**CCDO demotion +refurbishment op**
Site manager	**CCDO +SMSTS+ Black card**
360 operators	**CPCS demolition drivers**
Asbestos workers (non-licensed removal)	**CCD0 - CAT B asbestos training**
Emergency arrangement details	
 **Fire/evacuation**	**In the event of a fire, the site team will evaluate and report to the muster point.**
 **First aid**	**The WA site manager will act as the point of contact for all first aid injuries, all first aid incidents must be recorded in the accident book**
 **Pollution/spill**	**In the event of a spill, the site spill kit will be used to control the spill. If a large spill occurs that cannot be controlled/stopped the emergency services must be informed**
Other (e.g. rescue plans)	**Emergency rescue at height. An emergency work at height rescue plan must be developed and briefed to the team prior to any work at height.**
Personal protective equipment requirements (other than standard site PPE)	

					**Other**
Type 5-6-cat 3 when	When working	Harness and l m fixed lanyard when		FFP3 mask for asbestos works and general site	**Wellington boots to be worn when carrying**

W.A Construction

carrying out asbestos works	around site plant	working at height		dust	**out asbestos works.**

Dust Control

FFP3 face fit tested respirators will be worn when dust is generated during work activities. All operatives must use the correct make and model of respirator that they have been previously tested for. Operatives must be clean shaven to ensure the respirator gives adequate protection.

All activities with the eventuality or potential to cause dust will be assessed with a daily briefing and separate Risk assessment prior to commencement. Were possible the use of none dust producing tools will be used to minimize the operatives exposure to dust… i.e. reciprocating saws with metal blades.

Vibration

All operatives will be given the correct information, instruction, training, and supervision which will include the following guidance:

Knowing the symptoms of HAVS which are tingling of the fingers, loss of feeling and strength and fingers turning white in colour. Avoiding gripping too tightly or forcing a tool. Always using the correct accessories for a tool. Taking regular breaks. Keeping warm and exercise hands during breaks.

Use the correct posture and technique and let the tool do the work for you. Make account for weather conditions, cold and wet conditions inhibit blood circulation and increases the risks of vibration. Assessments will be made on the purchase of new equipment on HAVS to select the best equipment with high efficiency and low vibration.

Equipment will be well maintained and kept in good working order. Assessments will be made in the use of equipment that vibrates less and alternatives methods and equipment implemented where practical.

Operatives will monitor the vibration level times stated above and ensure the times are not exceeded. For any equipment that produces noise levels above 80 Decibels, hearing protection must be always worn during use.

All activities with the eventuality or potential to cause vibrations will be assessed with a daily briefing and separate Risk assessment prior to commencement. Were possible the use of none vibratory tools will be used or if machine attachments can be used they will be explored prior to exposing operatives to hand tools with the potential to cause vibration.

Environment

We aim to promote the sustainable use of natural resources and minimise environmental impact/pollution. Reviews of the policies, services and activities will be carried out.

Steps will be taken to ensure smoke/odour's, dust, noise, and vibration nuisance is minimised. Regular monitoring of site activities will be recorded and retained within the Site Records.

Wherever possible waste will be reused, reclaimed, or recycled. However, where waste must be disposed of,

W.A Construction

all waste disposals will be transported by registered carriers and removed to registered disposal sites. Documentation will be held on-site demonstrating compliance with this.

Liquid pollutants will not be allowed to enter watercourses. All liquid storage will be bunded wherever there is a risk and locked when not in use. Spill kits will be provided on site.

WA construction will provide adequate welfare facilities in line with CDM 2015.

WA construction will comply with the waste management systems.

Disposal and waste streams to be complied with by operatives on sites. WA will provide skips. Operatives will ensure the waste is not mixed and is segregated.

Fuel storage and generators will be enclosed, which will adequately contain any leakage of fuel. These must be110% of the volume of the maximum storage of fuel. This will be in line with GPP 2 Above Ground Oil Storage of Tanks.

Storage of Liquid in Fuels, Oils, and COSHH substance will be stored within a drip tray capable for holding 25% of the total capacity.

Storage and Use of Fuel Cans: Ensure that vessels used are appropriate for the fuel and that caps are securely fitted when not in use and they are restrained for transport.
If a spill occurs on site – this will be contained immediately using spill kits and further leakage will be prevented i.e., close valve, right.
A check will be made to ensure any spill has not reached any nearby drains, manholes, watercourses, or other sensitive areas. If required any pathways will be dammed and any receptors bunded to prevent subsequent contamination

Spills will be reported in accordance with WA construction

The following information will be included in the report:

Material involved and pollution properties if applicable.
Location
Whether it is in danger of entering drainage / watercourses
Quantity involved.
Reason for spillage / responsibility

Any material used to clean up a spill will be collected and disposed of as hazardous waste.

Plant and equipment required (keep this list appropriate to the size and complexity of the task)	
Type	**Details**
360 excavators	Demolition spec

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W.A Construction

HP Jetter	**Jetter bowser**
MEWP	**11m rough terrain Scissor lift**

Hazardous materials			
Are hazardous materials to be used or encountered?	**y**	**Are COSHH data sheets or assessments available?**	**y**
Attach or identify hazardous substance (including lead and asbestos)		**Control measures**	
Asbestos		**Detailed within this document**	
Diesel fuel		**COSHH**	
Site dust (silica)		**HSE silica dust sheet to be brief to the team (attached) Dust will be dampened down during demolition using a dust cannon/dust boss or locally, a hand-held sprayer.**	

Permit required *(tick below)*

X	**Permit to work at height**		**Permit to enter** *(Confined spaces)*		**Permit to break ground**
X	**Hot-work permit**		**Out of hours work permit**	**X**	**Other (permit to demolish)**

Details of the person issuing permit	**All permits will be issued by Peelers yard Ltd site manager with the exception for permit to demolish. WA site manager to issue permit to demolish (ADM internal procedure).**

Enabling works required (e.g. isolations)

1) **Any open areas (site entrance) will be secured with Heras mesh type fencing.** Are the main front gates not being retained or are they being taken out. The main gates are being retained
2) **Footpath protected matts to be used in demolition / enabling work areas.**
3) **Wall support and access scaffolding to be erected Cross Keys Street & Goulden Street.**
4) **Cross key street - temporary works prop for masonry above brick sections to be removed.**
5) **Footpath and single lane road closures to be in place prior to commencement of works.**
6) **All services other than water to be disconnected.** What other services are present on site? Survey Operations Utility Survey was carried out in July 2021, do you have the survey? No can you please provide a copy..

Pre-start procedures (e.g. safe starts, Rand D survey briefing etc.)

The site team will receive a pre-start briefing before each working day to discuss the associated hazards and controls with the day's works.

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Example document: -

A permit to demolish will be raised prior to demolition.

Asbestos survey will be discussed.

The following drawings will be displayed and discussed as part of the daily pre-start meeting: -Traffic management, Masonry repair / Demolition plan.

Site entrances is off Goulden street-

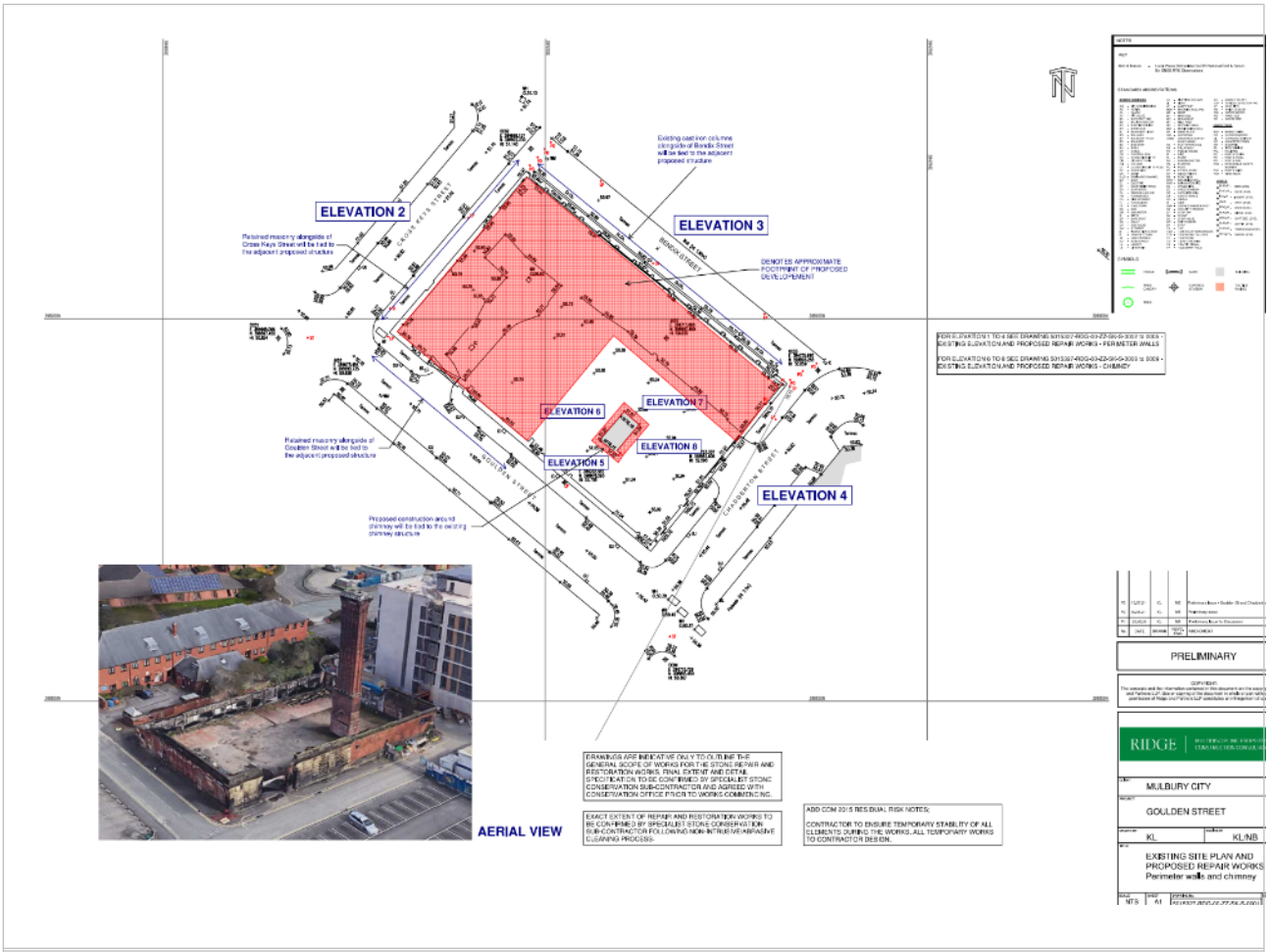


Welfare & staff parking as per Cert instruction. Are these doors staying? Yes

Masonry repair / demolition site plan:-

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Description of safe method of work. Too small to view properly, attach as a separate A3 Appendix pdf

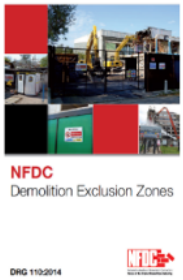
Guidance notes to be followed on this demolition



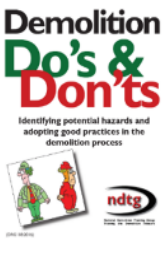
Safe use of Demolition Attachments



CDM 2015 Guidance Notes



Exclusion Zone Guidance Notes



Dos and Don'ts Guidance Notes



Asbestos Guidance Notes



Temporary works guidance notes

SF-093-Method statement

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Demolition Plan

Sequence of works: -

1) Heras fence demolition exclusion zone. A site plan showing the location of the heras fence should be provided, will netting be used to prevent spoil migrating from site. This has been provided as part of the construction phase plan.
2) Footpath protection matts inside the demolition exclusion zone (Only protect section being actively demolished).
3) Non licensed asbestos to be removed.
4) Demolition and enabling works.

Courtyard general waste removal methodology

1. A demolition exclusion zone must be formed around the relic structure during demolition works.

If operative needs to work at height they will use a hop up / podium tower or MEWP. Which is it to be? It will be a combination of both…this will be assessed as the full scope of works is progressed and subject to ground condition survey which is to be undertaken next week.

Up to three demolition operatives will be inserted into the courtyard prior to any works commencing, accompanied by the site manager. The relic structure courtyard is derelict, so the hazards previously identified are likely to have escalated, i.e., hypodermic needles, vermin (Rats).

General waste materials will be removed by hand and stockpiled. A 360° excavator fitted with selector grab attachment will then segregate and load into skips to be removed from site.

Working progressively through the courtyard, if required items will be broken down using a combination of hand tools i.e., mattock, wrecking bar, sledge hammer, etc if required.



An example of a Mattock to be used by WA operatives.

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Any work at height will be accessed by using mobile towers / podium steps or MEWP (subject to full compliance with accosted Risk Assessments) and a Permit for Work at Height must be issued. trunking, conduit, pipework and other non-structural metalwork will be cut out using oxygen/propane burning equipment, angle grinder or dismantled mechanically (subject to full compliance with accosted Risk Assessments) and a Permit for Hot Work must be issued. Where will this be required to be used? Again this will be assessed by site specific risk assessment…

All materials will be segregated into separate waste streams to remove rubbish, plasterboard, timber and metal products. By regularly removing the accumulated debris, the potential fire risk, that loose combustible material imposes, is minimised/removed.

Debris will be taken off site by a licensed carrier with copies of waste tickets retained in the Site Records.

Discovery of Unexpected Asbestos – Company Procedure

Operatives are to be vigilant, and if they discover any suspect material, the site team will adopt the following procedure:

- There will be an immediate suspension of activities within the affected area. The area will be immediately cordoned off with barriers. WA supervisors will notify management and no further works will be undertaken until a full analysis has been conducted and remedial action agreed.

Samples would be taken by removing a piece and placing within a sealed bag, which would then be taken to the laboratory for testing. This should be done by a qualified asbestos surveyor.

Upon receiving the results from the laboratory, a Plan of Works would be produced, and the material dealt with, either by using locally controlled conditions or HSE waiver. The HSE Waiver was available during the Covid period, which has ended, I assume if anything was identified it would be removed by a licensed contractor or suitably competent contractor. – We have been informed that all asbestos related material which was raised during the survey has been removed…

Once the Plan of Works is agreed, operatives PPE and RPE will enter the exclusion zone and commence spraying area with a water/surfactant mix which will suppress any fibers.

During the commission of these works, WA would instruct a UKAS certified analyst to conduct personal and background air monitoring around the perimeter of the works and any adjacent areas subject to client concerns.

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Courtyard masonry stone collection and removal methodology

Dotted around the courtyard are numerous masonry stones from previous demolition works. Some are separated with timbers and others are loose tipped.





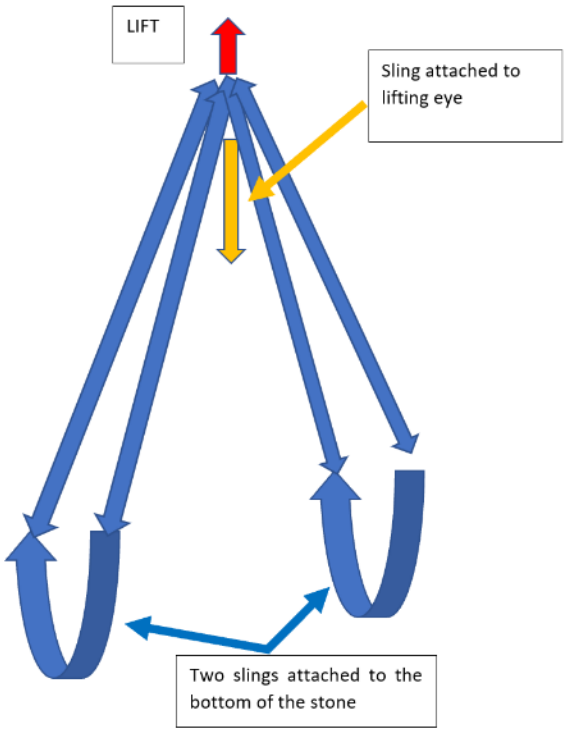




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Using a combination of a selector grab and slings the 360 excavator will carefully lift the masonry stones and placed then on pallets for storage off site. The masonry stones will be placed onto the pallets to secure for transportation and all pallets will have an identification code starting CY01 to CYXXX to identify they are from the courtyard under the supervision of Henley Stone.





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W.A Construction



Selector grab with rubber attachment to be used on this project

Courtyard glazed tile removal methodology



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Glazed tiled have been bonded to the walls with mortar and have minimal jointing to assist with the loosening of the tiles.

Working off podium steps / MEWP the demolition operative will endeavor to lift and not break the glazed tiles from the internal walls of the courtyard. They will use small hand tools such as a tile chisel along with small tools such as bolster chisels, breaker bars etc to lift the tiles



Tile chisel

.

The glazed tiles will be shrink wrapped onto pallets to secure for transportation and all pallets will have an identification code starting CY01 to CYXXX to identify they are from the courtyard.

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Demolition Methodology

Exclusion Zone Security
WA construction will put in place a banksman with two-way radio communication to ensure the exclusion zone is not breached.

Hold Point checks
To ensure the safe process throughout the demolition, we will ensure that the work is constantly reviewed by all parties. Therefore, we have a series of hold points where a section of demolition will be carried out and the operation will be formally stopped and reviewed to ensure the stability of the building is maintained and we are not exposing the local area to excessive dust and noise.

Targets and movement monitoring is to be used, are you organizing this, should this be mentioned, who will be checking this once in place?

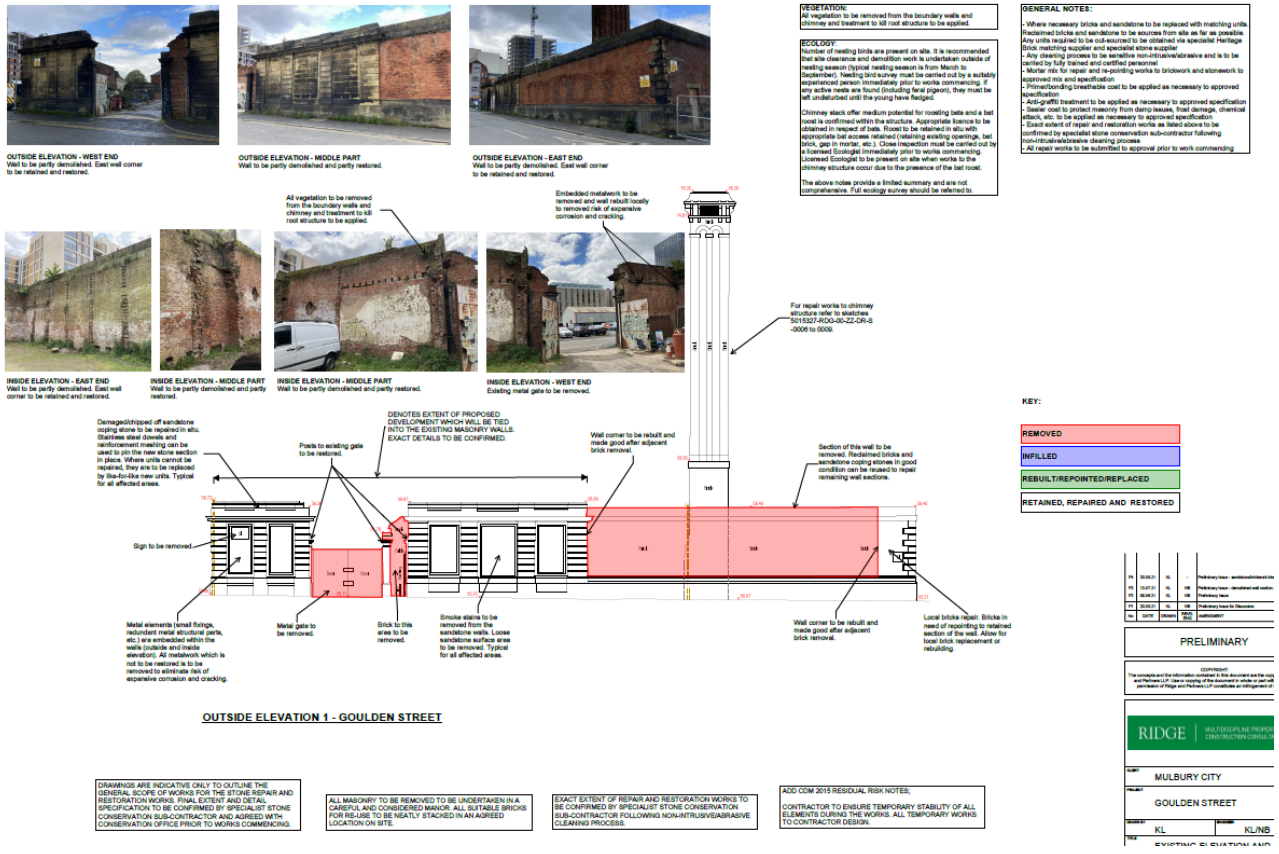
Vibration and tilt monitoring has been installed by the client with backgrounds reading being undertook by the surveyors this information is to be interpolated by the engineer into a simple traffic light system… based on the background/baseline monitoring information provided…

An exclusion zone is to be provided of 5m around the base of the chimney to ensure that no machinery enters this zone without the prior authorization of the structural engineer.

Elevation 1 Goulden street.

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The steel gates will be lifted off its hinges using a 360 excavator with a selector grab and placed into a metal skip for recycling. Provide an A3 attachment as this is too small to read? – A1 copies will be available on site..

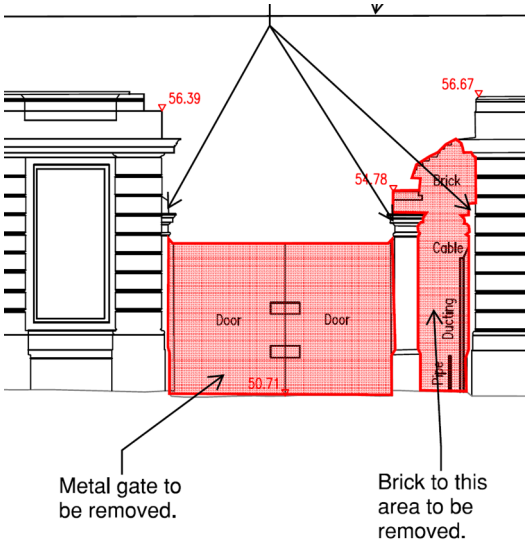
Hold point

1) The site will be secured with a Heras mesh type fencing to create a demolition exclusion zone.
2) Thorough checks must be made inside and around structures to ensure the structures are free from trespassers.
3) Thorough checks for discarded hypodermic needles.
4) Check all services to the work area have been terminated.
5) Remove all waste material and stockpile in storage area.
6) HP jetter to be in position and operational before demolition can commence.
7) Check all asbestos containing materials have been removed.
8) Wall support and access scaffolding to be erected corner of Goulden Street with Chadderton street as per designs issued. Do you know who will be erecting this and will you be in control?- Crest scaffolding the order

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is being placed direct by the client.

Masonry removal and brick wall demolition



Pallet reference 1A

The areas identified in red are to be demolished using hand demolition techniques.

Working from a MEWP two operatives using a medium breaker and small hand tools will remove the brick column highlighted above from the top down. The bricks removed will then be place onto the deck of the MEWP (subject to SWL constraints) or in the bucket of an onsite all terrain telehandler which will have the bucket at height adjacent to removal works to avoid any fall from height damage. Would agree with using the telehandler for placing brick into and not the MEWP. – Agreed.



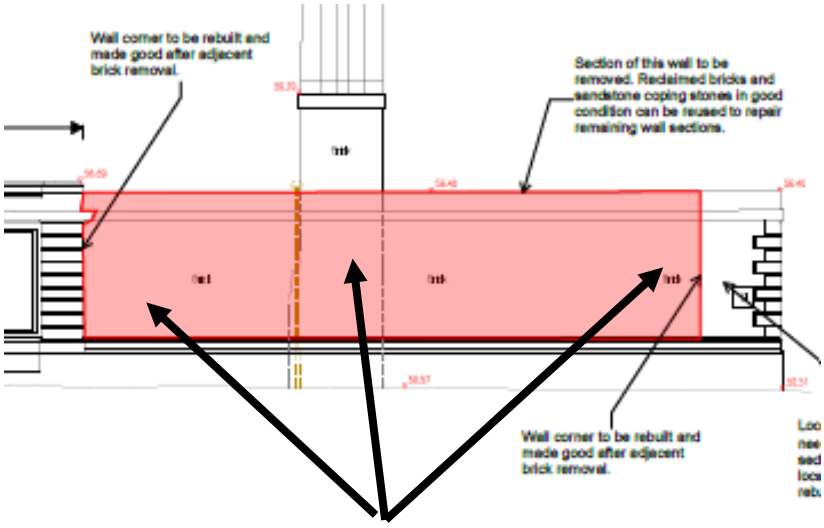
Examples of hand tools to be used to carry out this operation.

The bricks will then be offloaded from the MEWP by hand. The bricks in the bucket will then be removed again by hand and cleaned, palletized, stockpiled and recorded by Henley stone.

If dust levels within the site are elevated during the works operatives will wear oral/nasal dust masks and ensure

W.A Construction

arms and legs are covered to minimise exposure to the dust. The utilisation of a fine water spray will also be directed at the point of demolition to control dust migration. The quantity of water emitted by the spray will be regulated and controlled to prevent any flooding at ground level

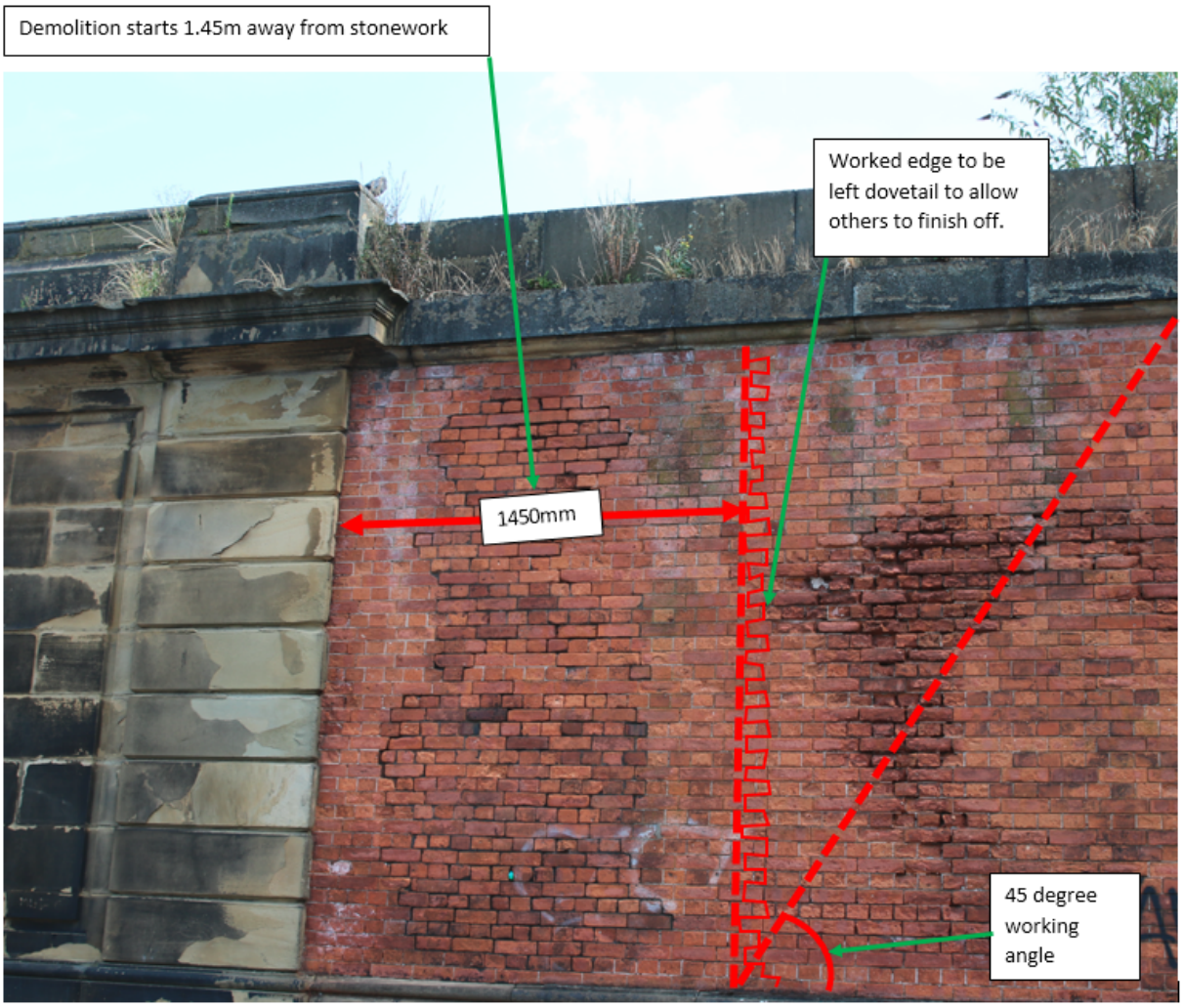


The areas identified in red above are to be demolished using hand demolition techniques.

Pallet reference with Henley Stone.

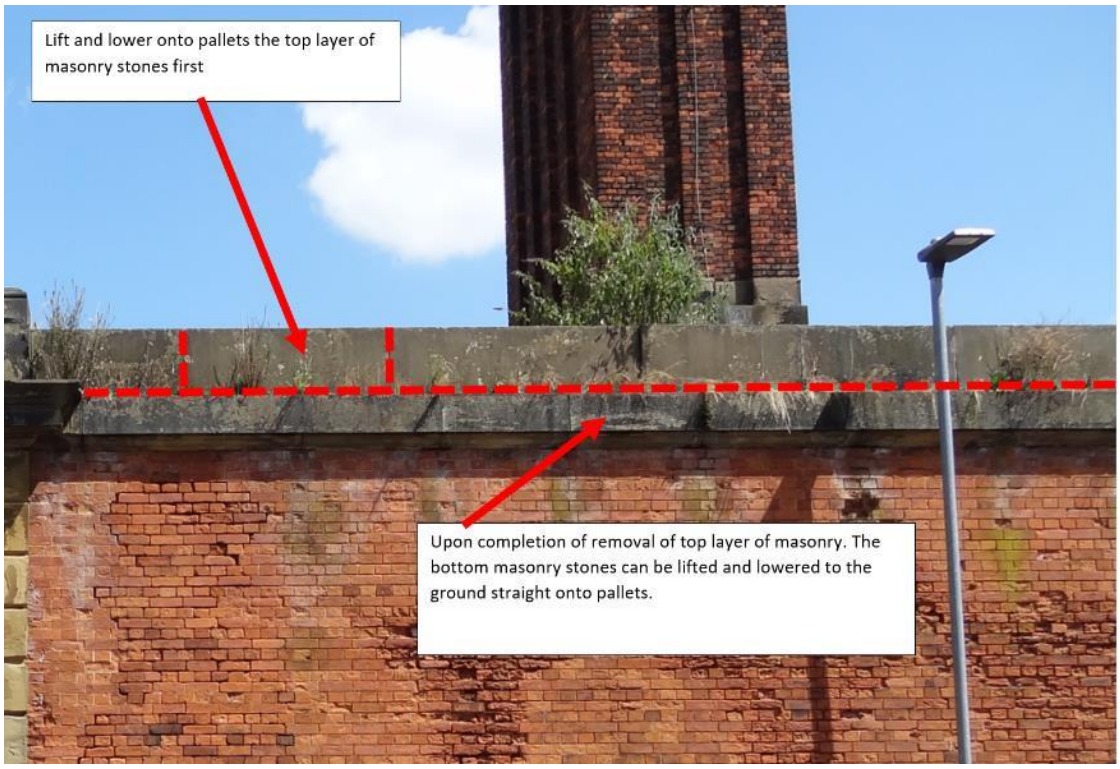
SF-093-Method statement

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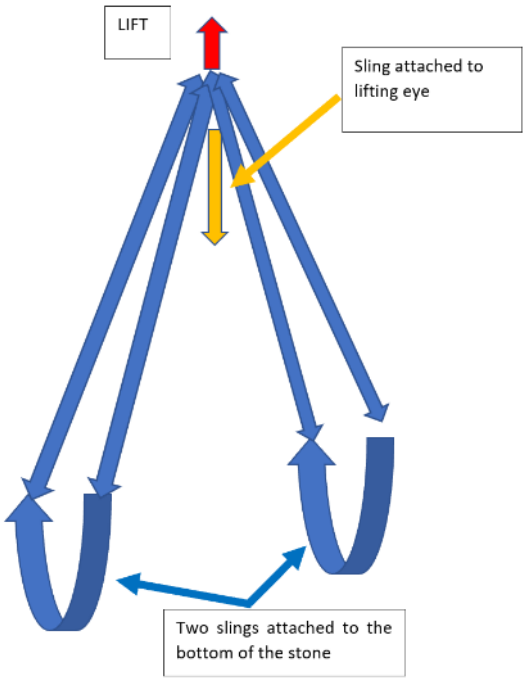


Two demolition operatives in a MEWP will assist with stone release using small hand tool, breaker bars, chisels etc. They will also guide the selector grab into position and assist with sling attachment if required.

Using a combination of a selector grab with a rubber protection band plus slings the 360 excavator will carefully lift the masonry stones and placed then on pallets for storage off site. The masonry stones will be shrink wrapped onto the pallets to secure for transportation and all pallets will be identified and coded under the supervision of Henley Stone. One the stone has been loosened sufficiently will operates come down rom the Scaffold and move away to a safe distance? – yes……

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Selector grab

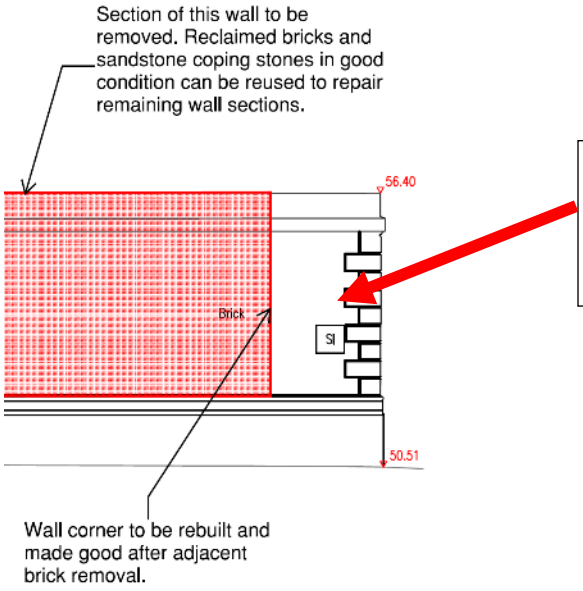




Working from a MEWP two operatives using a medium hand held breaker and small hand tools will remove the bricks from the top of the wall 1 metre in as detailed above. Removal will start from the top down and will open the wall up horizontally to create a 45-degree working edge. Once the 45-degree working edge has been created removal will continue following this 45-degree rake towards the corner of Goulden street with Chadderton street.

Due to the high volume of brick removal, they will be placed into the ditching bucket of a 360-excavator which will have the bucket at height adjacent to removal works to avoid any fall from height damage.

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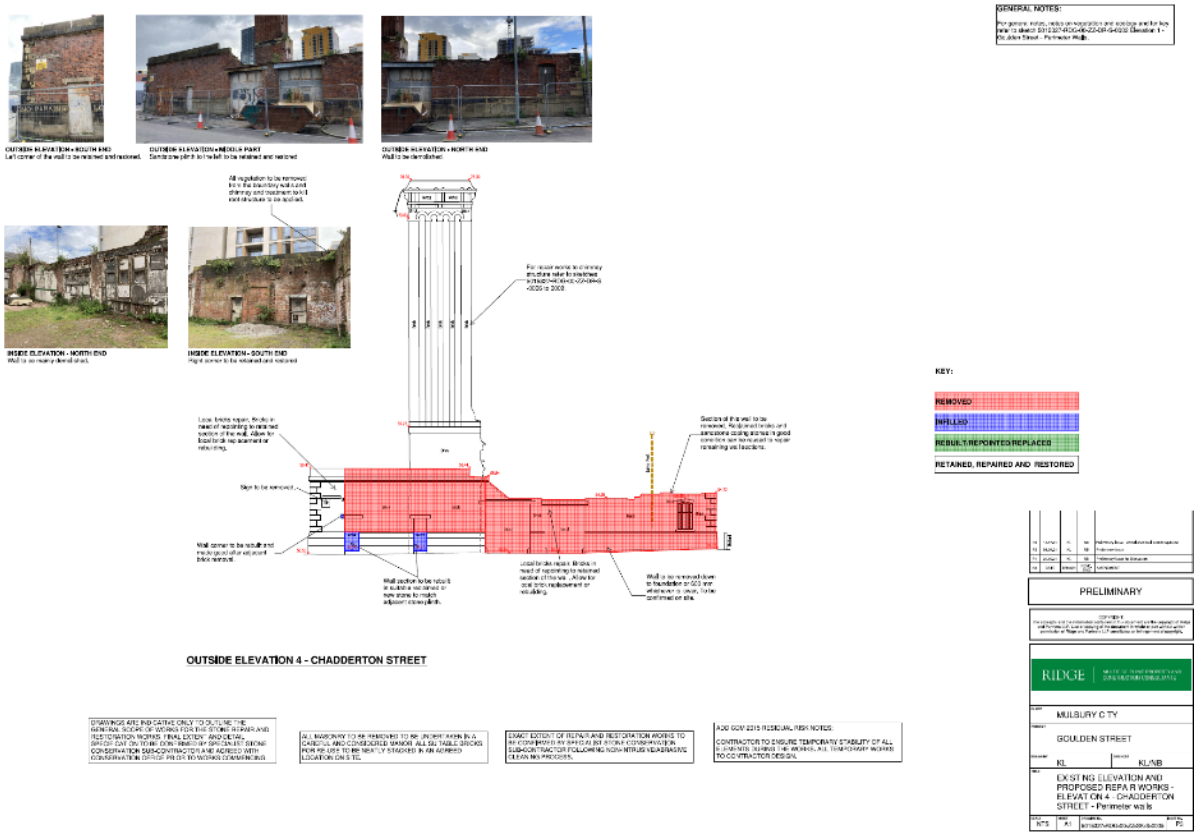


Wall support scaffold corner of Goulden street with Chadderton street **to be in place prior** to commencement of demolition works.

Elevation 2 Chadderton street.

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Provide a A3 pdf attachment, this is unreadable.A1 will be available on site..

Hold point

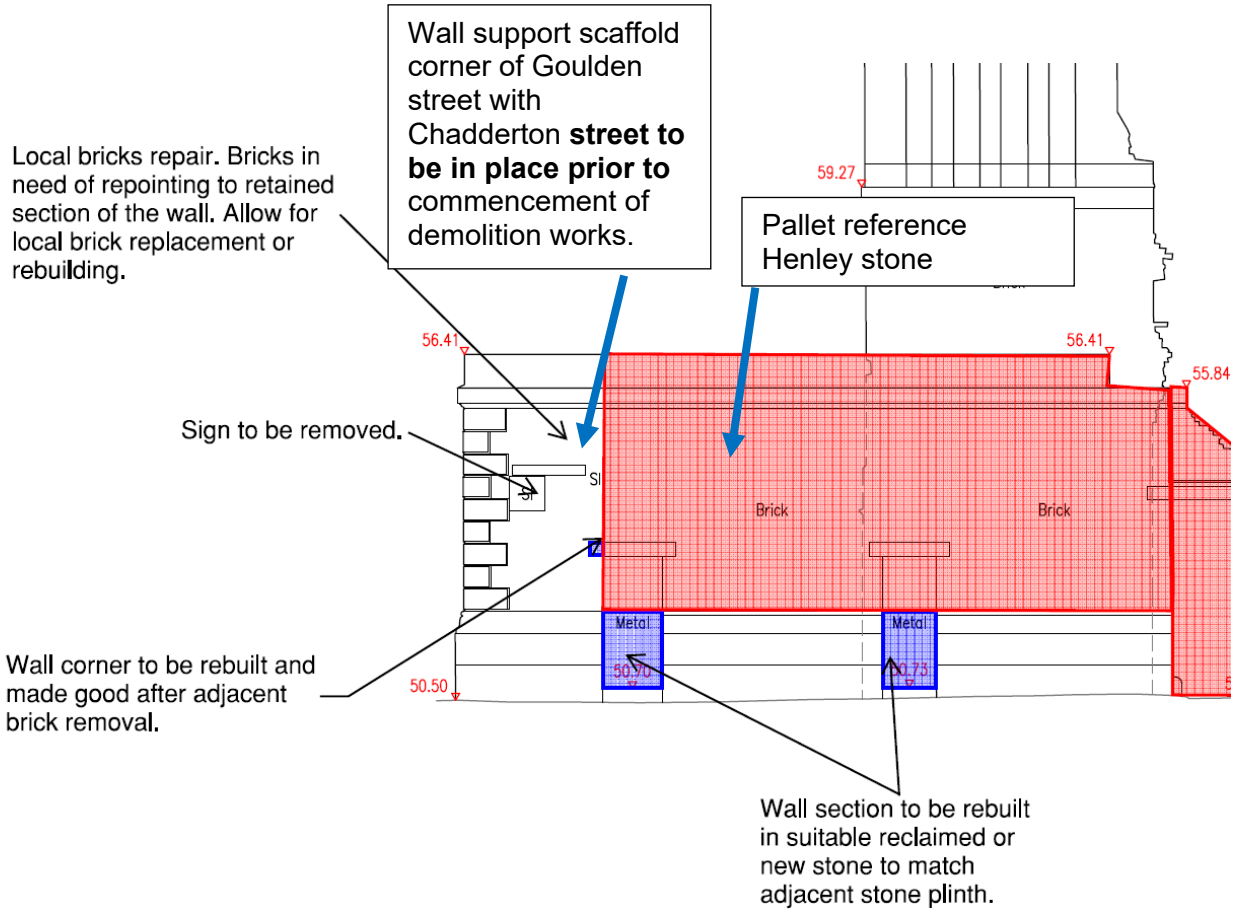
1) The site will be secured with a Heras mesh type fencing to create a demolition exclusion zone.
2) Thorough checks must be made inside and around structures to ensure the structures are free from trespassers.
3) Thorough checks for discarded hypodermic needles.
4) Check all services to the work area have been terminated.
5) Remove all waste material and stockpile in storage area.
6) HP jetter to be in position and operational before demolition can commence.
7) Check all asbestos containing materials have been removed.
8) Wall support and access scaffolding to be erected corner of Goulden Street with Chadderton street.

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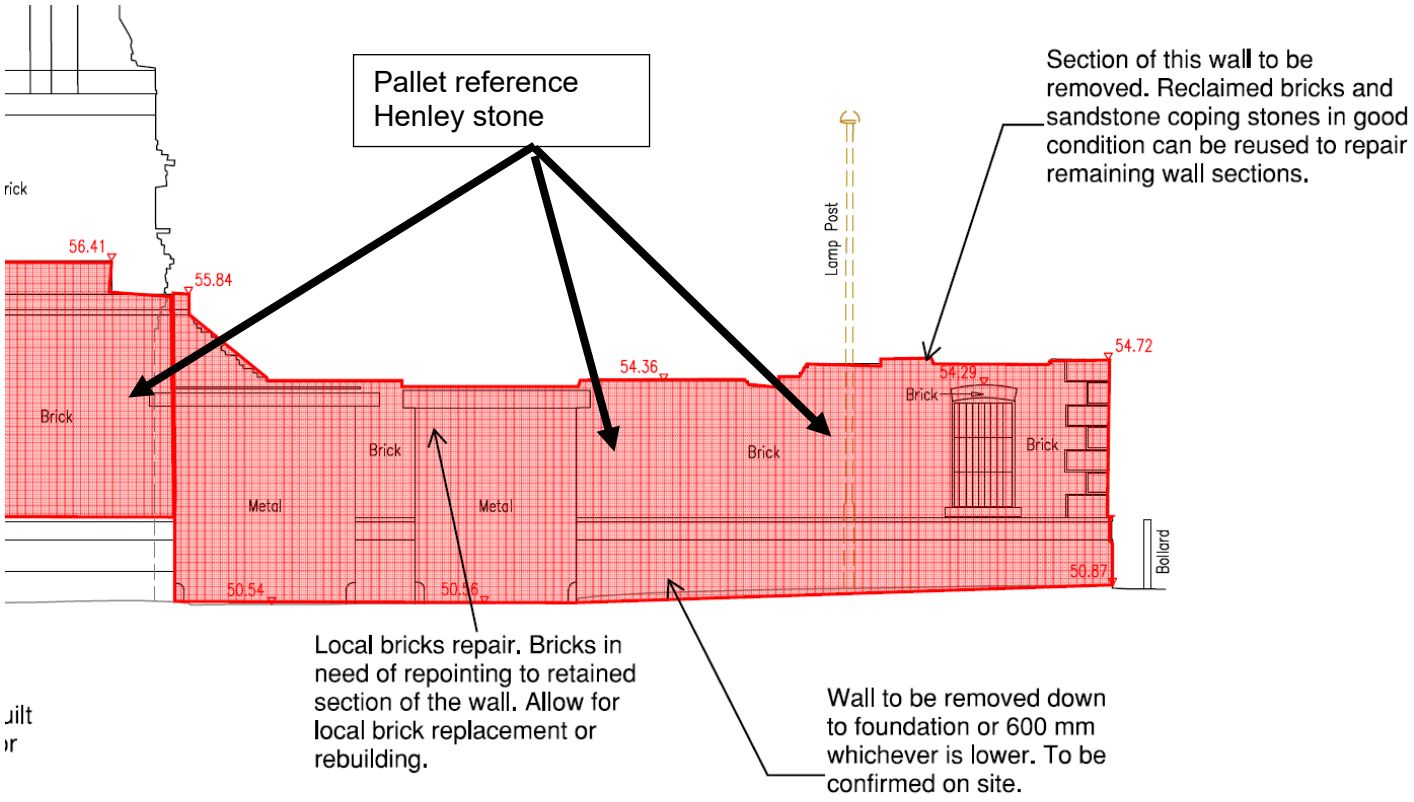
Masonry removal and brick wall demolition

The areas identified in red are to be demolished using hand demolition techniques.



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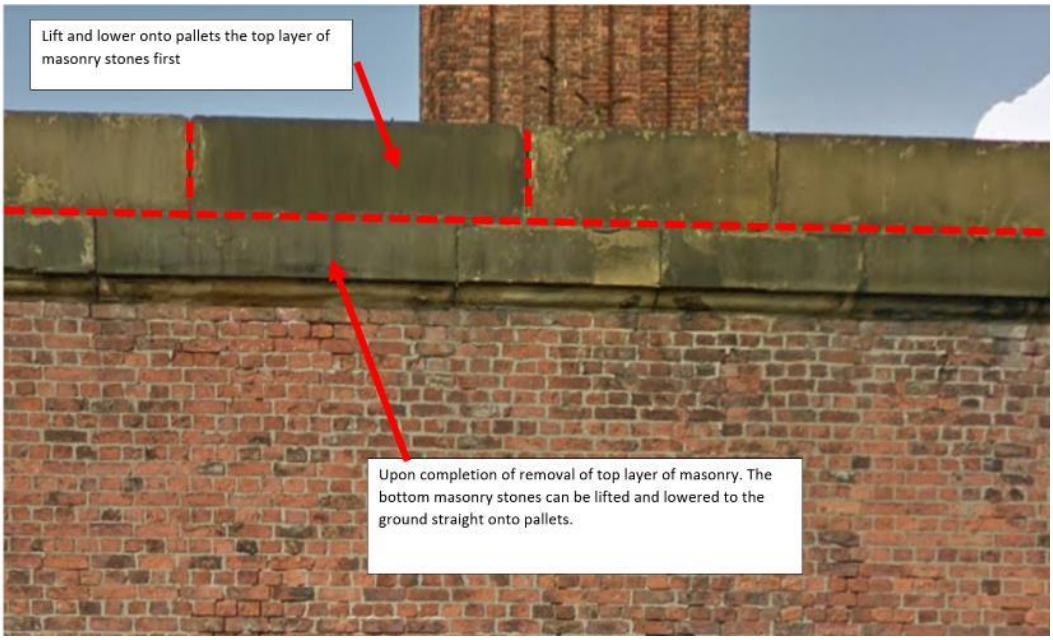


The areas identified in red above are to be demolished using hand demolition techniques.

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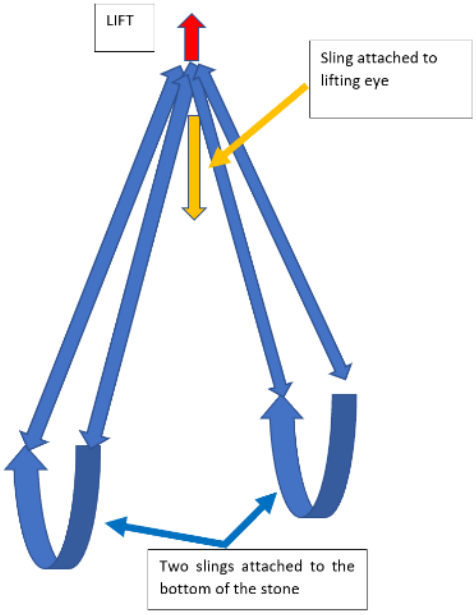


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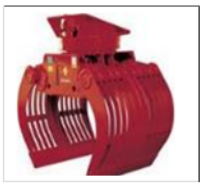
W.A Construction

Two demolition operatives in a MEWP will assist with stone release using small hand tool, breaker bars, chisels etc. They will also guide the selector grab into position and assist with sling attachment if required.

Using a combination of a rubber bar selector grab and slings the 360 excavator will carefully lift the masonry stones and placed then on pallets for storage off site. The masonry stones will be shrink wrapped onto the pallets to secure for transportation and all pallets which will be managed and wrapped by Henley Stone.



Selector grab





Working from a MEWP two operatives using a medium hand held breaker and small hand tools will remove the bricks from the top of the wall 1 metre in as detailed above. Removal will start from the top down and will open the wall up horizontally to create a 45-degree working edge. Once the 45-degree working edge has been created removal will continue following this 45-degree rake along Chadderton street.

Due to the high volume of brick removal, they will be placed into the ditching bucket of a 360-excavator which will have the bucket at height adjacent to removal works to avoid any fall from height damage.

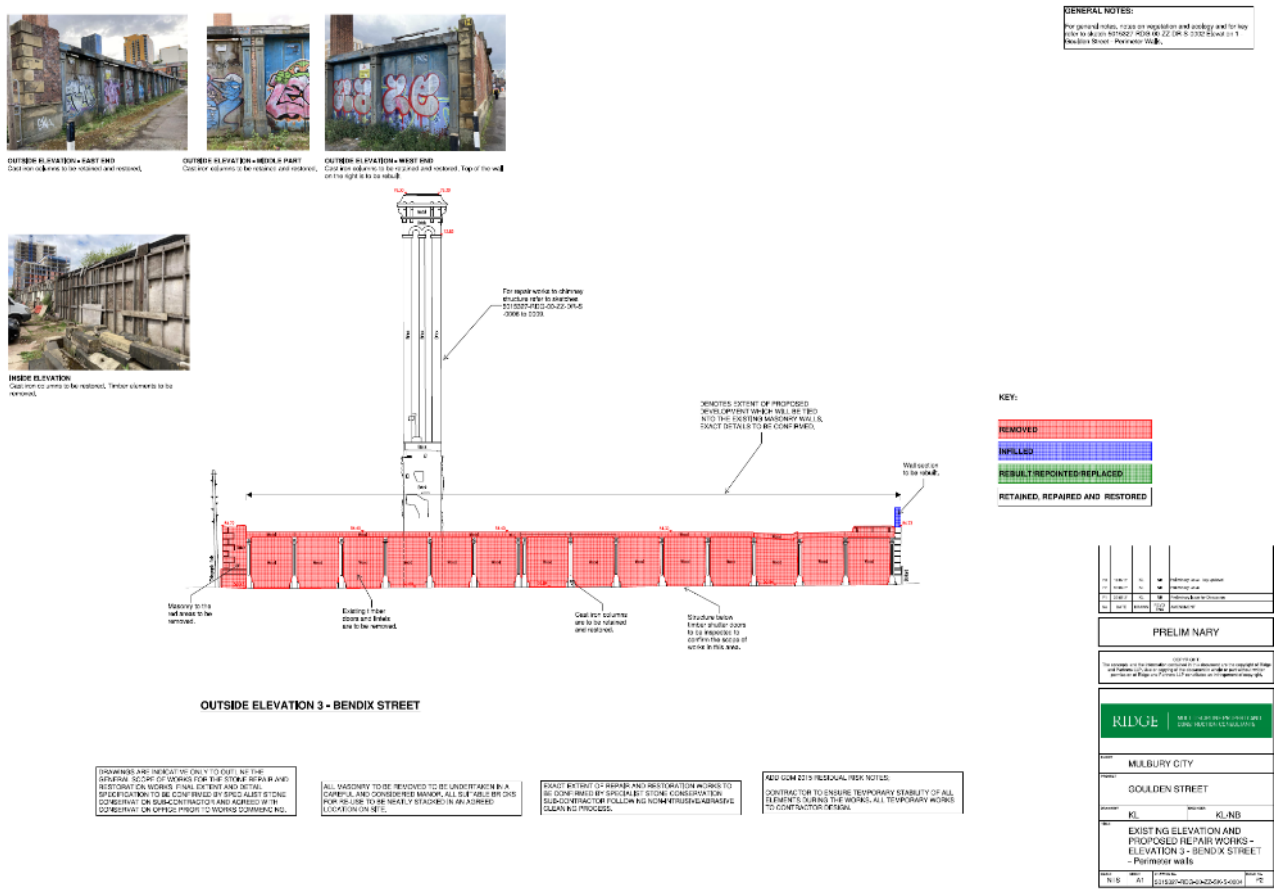
If dust levels within the site are elevated during the works operatives will wear oral/nasal dust masks and ensure arms and legs are covered to minimise exposure to the dust. The utilisation of a fine water spray will also be directed at the point of demolition to control dust migration. The quantity of water emitted by the spray will be regulated and controlled to prevent any flooding at ground level

The steel lintels and garage doors will be lifted using a 360 excavator with a rubber bar selector grab and placed into a metal skip for recycling.

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Elevation 3 Bendix Street.



The areas identified in red are to be demolished using hand demolition techniques.

Provide a A3 pdf attachment, this is unreadable.

Hold point

1) The site will be secured with a Heras mesh type fencing to create a demolition exclusion zone.
2) Thorough checks must be made inside and around structures to ensure the structures are free from trespassers.
3) Thorough checks for discarded hypodermic needles.
4) Check all services to the work area have been terminated.
5) Remove all waste material and stockpile in storage area.
6) HP jetter to be in position and operational before demolition can commence.
7) Check all asbestos containing materials have been removed.

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Cast iron column removal - to be supervised by the Heritage specialist during removal

Note - Column condition photographs to be taken before commencement of works



Using small hand tools, mattock, breaker bars ect the cobbles in front of the cast iron columns will be lifted and removed to stockpile for reclamation.

The top of the timber headers will then be accessed by two demolition operatives in a MEWP who will unscrew the holding bolt or cut the bolt using a grinder to release the header. Once the header is released from the column the 360 excavator fitted with a selector grab will grab the timber header and lift it to the ground.

Using a small 8T excavator fitted with a bucket attachment the base area of tarmac around the column will be removed to release it. This will expose the 4x base bolts holding the columns in place. The base bolts will be undone using a large 35mm socket. If the nut is seized, burning gear will be used to cut free the bolts. Once loose, a sling will be attached to the column, the 360 excavator will then lift it vertically from the hole and will lay it down on a pallet and handed over to Henley Stone. All works to be supervised by Henley Stone. Safe digging/excavation methods to be used when breaking any ground, cable avoidance tool must be used prior to breaking ground. – Agreed this ground has already been excavated prior to taking possession of the site although good practice will be followed whilst excavating by hand.

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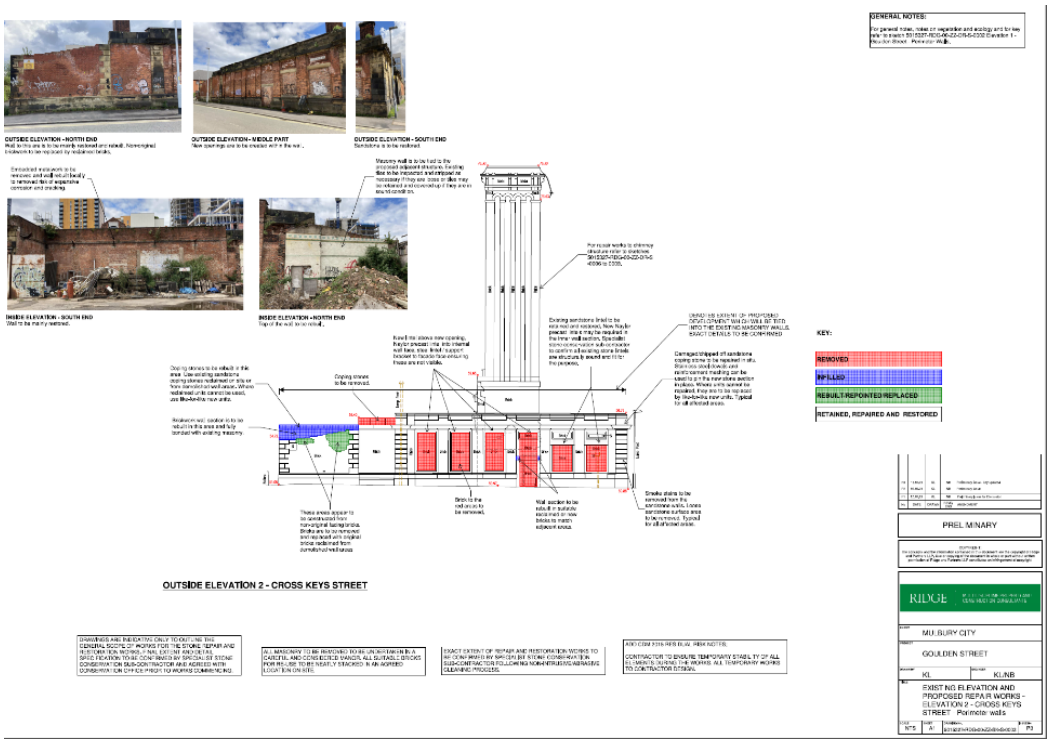


Example of sling attachment

Using small hand tools any excess concrete will be removed from the base of the column. The columns will be shrink wrapped onto pallets to secure for transportation and all pallets will become responsibility of Henley Stone.

This sequence of works will continue until all the columns are removed**.**

Elevation 34 Cross Keys Street.



The areas identified in red are to be demolished using hand demolition techniques.

Provide a A3 pdf attachment, this is unreadable

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Demolition hold point

1) The site will be secured with a Heras mesh type fencing to create a demolition exclusion zone.
2) Thorough checks must be made inside and around structures to ensure the structures are free from trespassers.
3) Thorough checks for discarded hypodermic needles.
4) Check all services to the work area have been terminated.
5) Remove all waste material and stockpile in storage area.
6) HP jetter to be in position and operational before demolition can commence.
7) Check all asbestos containing materials have been removed.
8) Wall support and access scaffolding to be erected Cross Keys Street.
9) Precast lintels required to support masonry above brickwork to be removed.

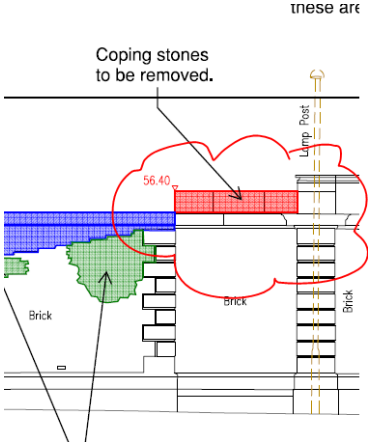
Note –structural engineer hold position

Regarding the new openings in the Cross Keys St elevation (red areas above).

The window/door openings will have to be formed once the new internal steel structure is in place and the existing wall is tied to the steelwork. Unfortunately making the openings before that could make the wall potentially unstable.

Not every proposed opening has an existing lintel over and new lintels will have to be provided. Any opening details and lintels will need to get approved by the heritage planners beforehand.

This phase of the works is on hold except for the for a small section of coping stones that can be removed.



Please note **only the top part** of the copers is to be removed and **bottom copers are to be left in place** (in accordance with the attached Architect's drawing)

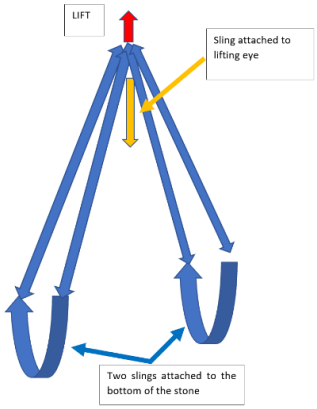
SF-093-Method statement

W.A Construction



Two demolition operatives in a MEWP will assist with stone release using small hand tool, breaker bars, chisels etc. They will also guide the selector grab into position and assist with sling attachment if required.

Using a combination of a rubber bar selector grab and slings the 360 excavator will carefully lift the masonry stones and placed then on pallets for storage off site. The masonry stones will be shrink wrapped onto the pallets to secure for transportation and all pallets will be handed over to Henley Stone.





SF-093-Method statement

W.A Construction

MEWP Rescue Plan

Rescue plan Normal and auxiliary control systems built into a mobile elevating work platform (MEWP) will allow the operator to bring the platform of the machine safely to ground level under controlled conditions. It is extremely unusual not to be able to lower the platform using these controls or for all of these systems to fail.
The following is an example of a rescue plan for people who work at height using a MEWP.

MEWP details - Manufacturer/model/ID:

Location of use:

MEWP Familiarisation

There are many different types of MEWP, and each MEWP may have completely different working controls than the other. It is important that the operator and anybody involved in rescue are made familiar with the controls of each individual machine, with added emphasis on the controls to be used in a rescue scenario.

Emergency Situation and Required Actions

Listed below are the required actions for three different rescue scenarios;

1. Failure of upper MEWP controls
2. Operator incapacitated
3. Fall from height and suspended in a harness

1/ Failure of Upper MEWP Controls

Follow all steps in order until the MEWP and/or operator(s) are safely on the ground.

- Ensure that the operator of the MEWP is OK and has no injuries.
- If there are any injuries to the operator or they feel unwell, call for the First Aider and assess if necessary to call 999 to request medical assistance.
- The Standby operative who has already been familiarised with the ground controls should attempt to lower the platform by using the ground controls (as per the manufacturer's guidance).
- Should the normal ground controls fail to operate, the same Standby operative is to attempt to use the ground 'auxiliary controls' to lower the platform.
- Should the auxiliary controls fail to operate, an engineer must be called to provide engineering assistance.
- If the engineer fails to repair the machine, then a mid-air rescue should be considered

W.A Construction

The mid-air rescue should not be attempted unless it has been agreed with site management and there is a Risk Assessment in place. If this is not possible or practicable, move to step below.

- Should the auxiliary controls fail to operate, then the site Supervisor should consider calling the Fire Brigade on 999 for rescue assistance.

2/ Operator Incapacitated

Incapacitated; where a person cannot access or use the controls to lower the machine down safely i.e. heart attack, stroke, crush injury, head injury, seizure.

Follow all steps in order until the MEWP or operator(s) are safely on the ground.

- Call for the First Aider and call 999 to request medical assistance
- The Standby operative who has already been familiarised with the ground controls should attempt to lower the platform by using these controls (as per the manufacturer's guidance).
- Should the normal ground controls fail to operate, the same Standby operative is to attempt to use the ground 'auxiliary controls' to lower the platform.
- Should the auxiliary controls fail to operate, then the Fire Brigade should be called on 999 for rescue assistance.

I sign below to confirm I have read the above document and also carried out a practical assessment for the MEWP (operation of the ground controls)

Name	Position e.g Operator /standby operative	Signature

SF-093-Method statement

W.A Construction

Briefing register			
Document Name and number	**MS-11276-01-03**	**Revision**	**03**

A copy of this briefing register must be attached to the method statement, together with other relevant information. *(such as the associated risk assessments, permits or COSHH assessments)***.**

Supervisor in charge of the work

I confirm that I have read and understand the requirements of this method statement and associated risk assessments and have communicated them to operatives under my control and to those who may be affected by its requirements.

Note: *it is important that you test the operatives' understanding and assume they have read and understood the method statement and risk assessments.*

Name		**Position**		**Signature**		**Date**	

Operatives/workforce carrying out the work

I understand and will agree to adhere to the contents of this method statement and the associated risk assessments.
I have attended a site induction/briefing that explained the general site rules and necessary site-specific arrangements.

Name	**Position**	**Signature**	**Date**

SF-093-Method statement

W.A Construction

If you have any doubt about the information given or contained in this method statement – ask for clarification.


Welfare and parking location 10 man self contained accommodation unit
The Smithfield Projec
Site boundary line currently secured with herras pannels
Cross Keys St
Initial 5m exclusion zone in place until finalised piling matt design complete following CBR testing
Delivery and plant entrance to be secured at all times and manned when in use
Goulden St
Chadderton St

W.A Construction and Civil Engineering

CDM

Construction Phase Plan

Project:	Peelers Yard Enabling works
Reference:	Cert01
Client:	C.E.R.T
Principal Contractor:	W.A Construction and Civil Engineering
Date:	27/4/22

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Construction Phase Plan Development

This Construction Phase Plan (CPP) has been developed in accordance with the Construction (Design & Management) Regulations and is viewed as a working document that will be amended with relevant information throughout the project. This plan should be viewed in conjunction with our risk assessments and safe methods of work, which outline many of the systems and procedures we have in place to reduce construction risks and achieve our health and safety goals.

In order to develop a thorough Construction Phase Plan and minimise construction risks to our best ability, this construction phase plan has been developed based on the Pre-Construction Information supplied to us as required under the duties outlined in the Construction (Design & Management) Regulations. On reviewing the Construction Phase Plan, please notify us of any other relevant information regarding the existing site that we have not been supplied with/is not included, to allow us to protect our employees, subcontractors and any other person affected by our operations.

This document will be clearly displayed and made available to all persons working on / visiting the site.

The CPP has been developed from the pre-construction information provided by the Client, Designers and other parties involved with the project, and will be further developed as the project progresses. All persons working on or visiting the site will be made aware of the availability of this plan and its contents.

The Principal Contractor will ensure the following obligations identified by the Construction (Design and Management) Regulations and other applicable legislation is complied with:

1) To develop the plan as a working document containing all necessary information.
2) To communicate both Client and Principal Contractor requirements to all contractors.
3) To take reasonable steps to ensure all contractors cooperate.
4) Only allow authorised persons access to site.
5) Obtain and assess method statements and risk assessments from all contractors. 6) Ensure all statutory notices are displayed.
7) Advise all members of the project team of any discoveries or proposals regarding design matters.
8) Procure competent contractors through supply chain management.
9) Monitor the health and safety performance of contractors and persons on the project.
10) Ensure all relevant information is handed over for the safe use and maintenance of the building
11) Ensure training and safety information is maintained to all those on site exposed to. construction risks
12) Encourage on open door policy for the reporting of hazards and proposing improvements to safe practices.
13) Notify all operatives of the responsibility and statutory requirement to look after their own safety and not engage in activities which will put themselves or others at risk.

Construction and Design Management Regulations

Standards & Objectives

It is the intention of the Principal Contractor that:

1) Activities shall be carried out in accordance with the Construction (Design and Management) Regulations and other relevant legislation
2) Consultations with the project team will take place on health and safety matters
3) Management of the project will encourage cooperation between all members of the project team
4) Advice and assistance will be obtained where necessary to fulfil obligations and duties
5) The works shall be completed in accordance with the quality standards specified, to5. programme and budget as per client instruction

Safety Standards & Objectives

The Principal Contractor will aspire to:

1) Achieve zero fatalities, zero major accidents and improve on health & safety performance year on year
2) Comply with all current health and safety legislation and approved codes of practice
3) Ensure compliance with Client safety requirements and include these as part of the project requirements
4) Work with the Client in his aim to provide a better environment for employees
5) Maintain safe access and egress to site, particularly emergency and fire escape routes.
6) Minimise disruption to neighbours and occupiers of the building and adjacent land users6.
7) Identify and address risks arising from the construction activities
8) Implement, enforce and coordinate the safe use of tools, plant, equipment and personal8. protective equipment (PPE)
9) Work with the Clients direct contractors to maintain safety and cooperation
10) 10) Carry out regular site safety inspections
11) Maintain adequate welfare facilities for the work force, including contractors
12) Assess the impact of the project on the environment and reduce it where required.
13) Promote awareness of health and safety within the workforce through training and communication, and through demonstrating management commitment.

Project Description

Project name:	Peelers Yard
Site address	Peelers Yard Goulden Street New Cross, Manchester, M45FR
Project Description	Enabling works for a new apartment development, works consisit of site clearance. piling matt, CFA piles, steel exo skeleton for existing chimney support, removal of listed columns and controlled demolition of existing boundary wall.
Start date:	3rd May 2022
Project Duration:	10 weeks
Documents & Records:	All documents and records held on site by the Principal Contractor within the site office.
Asbestos report:	AAC refurbihsmnet/demolition survey 19th July 2021
Ground Investigation:	
Adjacent land use:	North of the site is the smithfield project… residential East of the site Chaderton street which is a shared access with GMI construction currently using this for access to there site. Cross key street is an arterial route for public car parks.
Access/Egress:	Access for staff and contractors will be voa a gated access on Crosskey street.
Deliveries:	Access and egress for deliveiries will be via the main gates on Goulden street..

Project Key Contacts

Client:	C.E.R.T – Propoertoes
Principal Contractor:	W.A Construction and civil engineering
Architect:	Tim Groom
Structural Engineer:	Kris Clark Ridge
Building control inspector	Not applicable in enabling works
Planning officer	Manchester City Council
Principal Designer	Stuart – Rawlinson

Sub-contractor Directory

Ground/Civils Contractor	W.A Construction and Civil engineering
Piling Contractor	Green Piling
Steel frame	Warrington Fabrications
Conservation contractor	Henley Stone

Management & Emergency Arrangements

Project Manager:	Ben Moreton
Site Manager:	
First Aider(s):	Site Manager
First Aid kit Location:	Site Office
Welfare provision:	Temporary Cabins at Site Entrance Welfare facilities will include WC and washing facilities, running water, rest and canteen area, and site office.
Fire Marshal	Site Manager
Fire alarm warning is:	Alarm and/or shout Fire! Fire! Fire!
Fire Assembly point:	Will be by the main gates on Gourden street
Nearest A&E Hospital:	Manchester Royal infirmary Anson road, Manchester
Emergency services:	Emergency Services: Call 999 and ask for the required service Give your name, site address, be clear, give directions, stay calm Site Address:
Site address:	PROJECT ADDRESS
Utility Emergency contacts:	Gas: Cadent Gas Ltd 0800 111 999 Electricity: Electricity, North west. 0800 195 4141 Water: United Utilities Plc 0800 330033
THIS IS A NO SMOKING SITE	
ALL PERSONNEL ARRIVING / LEAVING THE SITE MUST SIGN IN / OUT AT THE SITE OFFICE	
YOU MUST BE INDUCTED BEFORE STARTING WORK ON THIS SITE	
ALL ACCIDENTS / NEAR MISSES TO BE REPORTED TO THE SITE MANAGER	

Project Responsibilities

Management Team

The Principal Contractor has selected a team who have a wealth of experience with this type of project covering all disciplines which will be deployed in order to achieve the project goals.

The team function will be to:

integrate with the consultants to achieve the best solutions for the project; work as one with the professional team and the client's management team to achieve the objectives and safety goals embraced by the client and published within this document; develop a team philosophy with contractors so that there is a mutual understanding as to what must be achieved to meet the clients expectations; employ our depth of management knowledge and previous experiences of undertaking similar projects to achieve the best outcome for the client; bring the project in on time, on budget, to meet and exceed the clients expectations.

Project Management

The contracts / project manager will promote a positive health and safety culture by creating an interest and enthusiasm for health and safety in all activities and set a good example, and ensure appropriate health and safety training is given to all employees as necessary. Will strive to ensure that health and safety factors are considered at all stages in the work process with sufficient resources made available to maintain safe working methods and equipment, and to ensure compliance with the company policies and procedures.

In overall charge of the contract and monitoring delivery of the project, including health & safety issues, and responsible for day to day liaison with project team members.

Site Management

The Site Manager has day-to-day responsibility for the site including management of work activities, tradesmen and delivery of the construction works. The site manager will implement the company's policies and procedures on site, reporting to the Contracts / Project Manager.

The Site Manager will: ensure compliance with company policies and procedures; ensure that a risk assessment has been carried out for any equipment, work activity or substance hazardous to health and safety, ensure appropriate control measures, training, instruction, protective clothing etc have been provided and that there is supportive documentation; ensure that all plant and equipment is safe, fitted with any necessary guards or safety devices and is services and maintained as recommended by the manufacturer; ensure the site is laid out and maintained to secure site safety, clear access/egress/emergency routes and that suitable welfare facilities are provided; ensure there are sufficient first aiders on site, suitable first aid facilities and arrangements; ensure all reportable accidents/incidents are immediately notified to the appropriate persons.

The Site Manager will be responsible for ensuring that works on site are carried out in line with the agreed health and safety plan, method statements and risk assessments.

Contractors

All contractors will operate in accordance with the Principal Contractor's procedures, site specific rules and client's requirements, as explained both within the induction process and within contract

documentation. All contractors shall cooperate with each other to facilitate the safe operation of site activity.

All contractors either failing to meet those site rules that are governed by zero tolerance or those failing to comply with safe practices/provisions of safe tools and equipment will be asked to remove themselves and their equipment from the site.

The Principal Contractor will co-ordinate the activities of the various contractors on site and if anyone has a health and safety question, or there is a co-ordination problem with other contractors, the matter should be referred to the Principal Contractor as soon as possible.

Site Staff / Operatives

All persons on site are required by law to take reasonable care of themselves and others who may be affected by their acts or omissions.

Everyone must co-operate with the Principal Contractor by observing the procedures and site rules described in this plan, so enabling the various parties to comply with their statutory duties. In particular, everyone on site must:

Use the appropriate personal protective equipment at all times.
Keep personal tools and equipment in good condition and report all defects in plant and equipment, or any unsafe acts, to the Site Manager.
Only undertake tasks authorised within their scope of works.
Not perform any task unless they have been authorised, trained and are capable of doing it.
Follow the site rules and any relevant method statements at all times.
NEVER TAKE ANY CHANCES. If any site employee or contractor has any doubt about the health and safety aspects of the task being undertaken, he should immediately inform the Site Manager.

If any employee or contractor becomes aware of a hazard that has not been foreseen, he should bring this to the attention of the Principal Contractor and discuss precautions that can be adopted to minimise any risk.

Project Delivery

Setting Standards

It is the intention of the company that: activities shall be carried out in accordance with relevant statutory provisions to include the Construction (Design and Management) Regulations; management of the project shall include the encouragement and maintenance of the co-operation between all employees and individual project parties (i.e. consultants and contractors) working on the project; expert advice and assistance will be obtained where necessary to discharge obligations and duties identified within the CDM Regulations; The works shall be completed in accordance with the quality standards specified, to programme and budget as per Client instruction.

Health and Safety Goals

The company will aspire to: achieve zero fatalities and improve on safety performance year on year; comply with all current safety legislation and approved codes of practice; ensure compliance with client safety requirements; work with and advise the client in his aspiration to provide a better environment for his employees; maintain safe and unimpeded access to the site, particularly for emergencies, and minimise disruption to neighbours; identify and address all risks arising from the works; police and coordinate the use of safe procedures, tools, plant, equipment and the appropriate use of PPE; work with the clients direct contractors to maintain safety and site cooperation; maintain adequate levels of welfare facilities; identify and provide health and safety training to promote awareness of safety and improve risk perception; and, assess the impact of site activities on the environment and minimise this.

Project Meetings

- Contract Pre-Start Meetings:
- 1 per contractor prior to project commencement Contract Meetings: Weekly
- Progress Meetings: Weekly Client Meetings: As Required
- Management Review: On completion

Site Rules

PPE	Suitable and sufficient PPE must be worn at all times, provided by your employer. All operatives shall wear PPE including high visibility vests, toe protectors and hard hats at all times, under the instruction of the Site Manager. Failure to comply will result in removal from the site. Other PPE, where necessary, will include eye protection, ear protection, gloves and respirators. The supervisor will be responsible for ensuring all PPE is worn.
Induction	The Site Manager will induct all persons working on the site prior to commencement. All persons including visitors must report to the site office for induction on arrival. Once you have been inducted you have a duty to inform others who you suspect have not been informed of these rules. Failure to comply will result in removal from site.
Welfare	Welfare facilities will be made available on site for all operatives. You must leave welfare facilities in the condition they were found in. Report any damage or poor conditions to the site manager. Do not misuse the welfare facilities or equipment provided.
Security	All persons must sign in / out of site. Fencing surrounding the site boundary will not be less than 2m high. It will be properly fitted, secured and maintained. All access gates will be lockable and secured when not in use, and at all times the site is unoccupied. The site will be locked and secured at the end of each working day or when not in use. Storage and welfare facilities will also be within a lockable and vacant area of the site. You must not trespass upon adjoining areas except where permission has been granted. Comply with safety signs at all times.
First Aid	The first aid box will be available at the site office; all operatives will be made aware of its location in the site induction. The Site Manager is responsible for first aid throughout the construction phase and ensuring the procedures set out in the site induction and this plan are complied with. Promptly report any injuries to the appointed first aider for treatment.
Plant & Equipment	The site operates on 110v supply only. You may only operate plant and equipment that you are trained and authorised to use. You may only carry out tasks for which you are trained and competent. If you suspect that plant / equipment / scaffold is unsafe please notify the site manager immediately.
General Safety	You must comply with the method statements and risk assessments for your activity(s). If you see any hazards on site, real or potential, inform the site manager immediately. Do not block routes for access / egress / escape or fire exits. Maintain a safe place of work by being tidy and removing your rubbish / waste.
Restrictions	Radios are NOT PERMITTED on site unless authorised by site manager. No alcohol or drugs are permitted on site. Persons suspected of being under the influence of drugs or alcohol will be asked to leave site Food and Drink are only to be consumed within designated canteen areas Persons displaying racist, sexist, violent or threatening behaviour will be asked to leave site and not return
Fire Safety	Smoking and Burning on site are NOT PERMITTED Hot works are subject to permits are obtain from site manager

Safe Systems of Work

Risk Assessments

Risk assessments have been carried out to cover operations and site wide risks under the direct control of the Principal Contractor and are included within the project documents.

Detailed risk assessments will be carried out throughout the project for all activities carried out on site. All personnel involved in the project will be briefed on the risk assessment and only once the risk assessment and control measures in place have been discussed and fully understood will the activity proceed.

All risk assessments are reviewed periodically and on commencement of an activity to ensure suitability for the task being undertaken.

Risk assessments will address the hazards, likelihood and severity of harm, people at risk, existing control measures in place and additional control measures required to control the risk.

All subcontractors will be required to submit an overall project method statement and risk assessments specific to the activities to be carried out as part of the project. All method statements and risk assessments will be reviewed by the PC and accepted prior to contractors being able to commence work on site.

Method Statements

The control methods outlined within the above risk assessments must be complied with when undertaking the work activity. Other high-risk activities to be completed as part of the works must be carried out under the method statements provided by the specialist subcontractor.

Method statements will be used to manage the work activities and the safety of those on site, or who may be affected by the activity.

Where a method statement is in place for an activity, in addition to the risk assessment, operatives must familiarise themselves with both documents and ensure they work to the procedures outlined.

Method statements will be developed as ‘safe working procedures’ for high risk or complex site activities. Method statements must be approved by the Site Manager prior to commencement of the activity on site.

Permits to Work

High risk works will be controlled by a permit to work system, this will include the following activities:

- Hot Works
- Roof Works
- Live Electrical Works
- Confined Spaces
- Excavations

Hot Works are not permitted unless a permit to work has been issued by the Principal Contractor, specific to the activity. Permits can be issued by the Site Manager in control of the works. Subcontractors are expected to implement their own permit to work systems in addition to the site Permit to Work Systems when needed, details of which should be supplied to the Site Manager.

Site Register

All persons visiting or working on the project are required to sign in and out of site at the site office before proceeding to their work area.

In an operational / occupied site environment, operatives may also be required to sign in and out of the clients premises; this is an additional requirement and not an alternative.

Subcontractors

Subcontractors are required to supply the following information:

1. Health & Safety Information - policies, procedures etc.
2. Risk Assessments
3. Method Statements
4. Insurance Details

Method statements are to include author, date, PPE to be worn (above and the standard PPE set out in this document). Information must be project specific and include details of any plant/equipment used. This information is required PRIOR to commencement on site. Only when a RA/MS has been approved by the Principal Contractor will the works commence.

Throughout the works subcontractors must also supply material data sheets, operation and maintenance manuals for any relevant materials used or products installed.

The project will be undertaken in accordance with all contract drawings and in line with the schedule of works. All works will be completed to the full satisfaction of the supervisor and contract architect. All defective works will be rectified at the respective contractors expense, including any associated work by other parties required prior to, or following rectification of the defective items. Should this situation arise, liquidated and ascertained damages will be apportioned in line with the contract documents.

Incident & Accident Procedures

When an accident or dangerous occurrence takes place, it will fall into one of the following categories. Proceed as indicated in the accompanying information as described below:

Minor Accident to Employee

- Report to First Aider for treatment
- Ensure details have been entered in the accident book
- Where an employee is incapacitated from work for more than 7 consecutive days (excluding the day of the accident but including any days which would not have been working days) because of any injury, complete internal report form and send direct to the Principal Contractors H&S manager / director
- If the injured employee is admitted to hospital and is an in-patient for more than twenty-four hours, the accident becomes specified as 'major injury' and must be notified as described under that category below

Minor Accident to Others

- Report to First Aider for treatment.
- Complete the accident book and accident report form as detailed above. - Inform the persons workplace and notify his employer.

Major Injury

- Report to First Aider for treatment / Call 999
- Halt works on the site immediately
- Complete the accident book - Inform director with overall responsibility for health and safety who will notify HSE and obtain written reports from all persons on site
- Comply with requirements of RIDDOR (Reporting of Injuries, Disease, And Dangerous Occurrence)
- A record must be kept by employers of all noticeable diseases, this will be form F25008A - Where an employee has suffered an injury as a result of a noticeable accident or dangerous occurrence which is the cause of health problems within one year of the date of the incident, the employer shall inform the enforcing authority in writing as soon as it comes to his knowledge.

Reporting of Accidents

Inform the Site Manager who will immediately obtain medical assistance if required. The Site Manager will advise the Director with overall responsibility for health & safety, who will notify our safety advisors and HSE if applicable. Injuries will be entered into the accident book, which will be on site as part of the health & safety file.

All incidents (accidents, dangerous occurrences and near misses) should be followed with a written report through the completion of an Incident Report Form. Copies of the form will be available from the site office.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) Following an accident or dangerous occurrence the HSE will be notified as soon as possible via the incident contact centre on 0845 300 9923. An internal investigation will then take place as carried out by the specialist contractor and the Principal Contractor which will be carried out in accordance with the

procedures detailed in RIDDOR. The HSE will be informed within 10 days of the accident via the specified HSE form and using the incident contact centre website.

Reporting of Near Misses

All incidents (accidents, dangerous occurrences and near misses) should be reported immediately to the site manager verbally, and followed with the completion of an Incident Report Form. Copies of the form will be available from the site office.

Investigation Procedures

Written reports will be obtained from all parties and presented to the director responsible, who will instigate a formal inquiry into the incident, the findings of which will be included within the health & safety file, and on the companies Incident System, with any necessary improvements implemented.

Subcontractor Management

Subcontractor Selection

Subcontractors are selected from an approved list of specialists who either have recognised quality and safety accreditation or have a history of carrying out satisfactory works on behalf of The Principal Contractor or as named by the Client. All subcontractors will fill out a questionnaire as part of our vetting procedure prior to becoming approved by the company.

All subcontractors will have produced evidence of up to date insurances which will be kept on file at The Principal Contractor offices and written confirmation that their operatives are fully trained for their specific element of work and in the use of equipment pertinent to their role.

All subcontractors will be responsible for obtaining relevant COSHH information for materials associated with their works and this will be issued with their method statements, risk assessments and O&M Manuals and will be held in a separate file by the Site Manager.

Exchange of Information

A copy of the Construction Phase Plan and associated project documentation will be made available to all subcontractors and a copy of the specific risk assessments, method statements and procedures for this contract will be issued to all subcontractors.

The Site Manager will hold regular site meetings with all contractors to review health and safety matters. All parties will be encouraged to raise any health and safety concerns they may have.

The Principal Contractor will co-ordinate the activities of the various contractors on site and if anyone has a health and safety question, or there is a co-ordination problem with other contractors, the matter should be referred to the Principal Contractor as soon as possible.

All subcontractors will be given an initial induction course to ensure that they understand site procedures. All personnel will undergo a site-specific induction before being allowed to work on site, in addition subcontractors must take responsibility for the safety and task specific training of their own personnel.

Plant utilised by subcontractors during the course of the contract must have up to date certification which should be presented to our site agent prior to commencement of the work. All plant operator licenses and training certificated must be presented to the Site Manager before they will be allowed to start work on site.

Communications

Management Meetings

Meetings are anticipated to take place with the client fortnightly throughout the works, to ensure the frequent exchange of information and that the client requirements and critical success factors of the project are met.

The site manager is the point of contact for discussing and taking views on H&S for all persons working on site. Various meetings will be held throughout the contract at all levels to allow the communication and distribution of contract information along will giving the opportunity for feedback.

Regular liaison with the Client, Consultants, Contractors and Designers will take place throughout the project with the distribution of all relevant information to project team members.

Consultation

All members of the workforce will be consulted on H&S procedures and controls that affect the workplace. This procedure will be initiated during the site induction and will involve the distribution of relevant information and allow for feedback and suggestions.

Any health and safety suggestions made by employees and/or contractors will be recorded and considered, and, where appropriate, implemented into working procedures.

Site Inductions

All Principal Contractor personnel and visitors will undergo a site induction on company safety procedures and a site specific induction before being allowed to work on site.

All subcontractor personnel will undergo a site specific induction before being allowed to work on site, and must take responsibility for the safety and task specific training of their own personnel.

New operatives will receive a site induction from the Site Manager. At this stage they will be informed of the location of existing records and documents including H&S information on site and all relevant procedures and will be requested to sign a separate section of the register to acknowledge that they have received an initial tool box talk and have been given the opportunity to read the details within the site files.

The initial toolbox talk will cover the scope of works, outlining the risks posed by other trades on site, and site specific hazards will also be verbally communicated during the induction.

Tool Box Talks

Weekly Tool Box Talks (TBT's) are required on site throughout the construction phase.

The TBT's will be used a communication channel to update operatives on progress and include relevant H&S information for the current activities taking place.

Records of the Induction and TBT's should be maintained and stored in the site H&S File.

Design Changes

Any design changes made during the construction phase will be discussed with the project team prior to being implemented within the project, and any additional health and safety risks assessed as a result of the design changes.

Construction drawings to be updated to include the design changes and design risk registers / method statements and risk assessments to be updated to include any changes.

Health & Safety Monitoring

Monitoring Arrangements

Monitoring will be carried out and achieved using a variety of different means such as: inspections, checklists, meetings, appraisals, audits, reviews, permit to work procedures, employee consultation etc. The site manager will carry out regular inspections of the works and highlight any breaches of regulations or bad practices to the relevant contractor.

Specific arrangements in place for monitoring the delivery of this project are:

1) Site Managers weekly safety inspection
2) Weekly progress reports
3) Site safety inspection (as required)
4) Management meetings

Subcontractor Performance

The Site Manager will hold regular site meetings with all contractors to review health and safety matters. All parties will be encouraged to raise any health and safety concerns they may have.

Subcontractor performance including H&S performance will be reviewed periodically and monitored continuously throughout the contract, with any concerns brought to the attention of the subcontractor. Failure to rectify any issues within an agreed timeframe may result in removal from site.

Control of Safety Risks

Access, Delivery & Waste Removal

Designated vehicle and pedestrian access points to be put in place as part of site set up. All people accessing the site to report to the site office to sign in each day.

Parking only within designated parking area, where on street parking is utilised, care must be taken to obey parking restrictions and to avoid blocking access to neighbouring properties or emergency services.

All operatives will be made fully aware of any restrictions on deliveries within the site boundaries. All operatives will be fully licensed for their vehicles.

All delivery drivers will be instructed to report to the Site Manager on arrival, and, where necessary, a banks man will be provided for the vehicle while within the site boundary.

Waste will be carried down from high levels or lowered directly into skip, or send waste via a chute directly into the skip below, to avoid spread of dust, litter and debris.

All materials disposed of from site will be removed in accordance with the requirements of environmental protection legislation, by a licensed waste disposal contractor, to a licensed waste disposal site.

Waste removal should be frequent, to prevent the build up of site debris.

Services

All service work will be subcontracted to specialist companies, who are expected to follow their own safe systems of work and comply with those of the Principal Contractor.

All overhead and underground services will be identified and protected from contact and/or damage throughout the duration of the project.

The buildings existing service plans will be referred to, where available, and all necessary surveys will be undertaken prior to the commencement of works.

Services will be isolated by a competent person to the working area before work begins. The location of all services will be recorded and clearly marked before works commence.

Power to the site working area to be created via a 110v temporary supply, set up from a transformed 240 volt supply, connected from outside of the working area, transformed to 110v and centre-tapped to earth, or using generators where a temporary supply has not been established.

The temporary supply will be installed and connected by a competent electrician, with hand-over test certificate provided to the Principal Contractor.

The Site Manager will ensure that isolation does not compromise the buildings existing alarm systems, and where necessary to isolate existing alarm systems, temporary alarm procedures will be put in place and communicated.

Ground Conditions & Excavations

Any ground work will first be subject to ground investigation works including trail holes and checks by a competent person (e.g. structural engineer / building control) to ensure ground is suitable to support the proposed structure.

Drawings to be obtained from public utility companies and prior to any excavation work commencing the area will be scanned to identify any underground services.

All excavations will be examined and supported as required.

All excavations regardless of ground conditions will be assessed by a competent person, and supported or battered, under the supervision of a competent person.

All excavations are to be fenced with warning signage.

Work within excavations will be subject to a permit to work system. Trenches will be inspected prior to entry, and monitored (water, fumes, gas, services) to ensure entry is safe.

Site Traffic & Vehicle Movements

A traffic management plan will be in place with segregation of pedestrian and vehicle traffic and the implementation of a one-way system will be enforced where possible.

A banks man will safely guide all vehicles arriving at the site, and a site speed limit of 5mph will be enforced. All reversing and turning is to be carried out under the constant supervision of a banksman.

Drivers must take care when other vehicles and pedestrians are in any area through which they are moving.

Where possible audible and visual signals are to be used for any reversing. Manoeuvring of any sizeable loads or vehicles to be carried out with signaller in attendance, to ensure that third parties are kept clear of site operations.

All plant ordered by the Principal Contractor will be through an external plant hire company who will ensure that the plant complies with all current legislation. The site manager, prior to accepting delivery, will check all machine certification. Hired equipment must be tagged and inspected.

All plant involved in lifting operations on site must have current valid lifting certification as detailed in the Lifting Operations and Lifting Equipment Regulations 1998. Copies of the certification and current weekly inspections will be held in the site H&S folder.

Operatives should be trained and competent for the use of any specialised tools or equipment with copies of training certificates held on site. Plant and machinery statutory testing and examination certificates are to be held on site. This includes hand-over and weekly inspections to verify scaffolding as safe for use and regular inspection and testing of portable appliances. 110 volt portable equipment to be used, supplied via a transformer, centre-tapped to earth or suitable power generator.

Plant utilised by subcontractors during the course of the contract must have up to date certification which should be presented to our site agent prior to commencement of the work. All plant operator

licences and training certificated must be presented to the Site Manager before they will be allowed to start work on site.

Existing Structures & Fragile Materials

All existing structures will be protected throughout the works, with temporary supports detailed by a structural engineer where necessary, to prevent the risk of premature collapse or damage to existing structures.

When carrying out structural alterations or works in close proximity to an existing structure, the structure will be assessed prior to commencement.

A detailed risk assessment and safe working method statement will be prepared by a competent person, then inducted to and understood by all involved, prior to any demolition, dismantling or other work that may affect the structure or adjacent structures.

The method should minimise the risks to persons, by as far is as practicable: Ensuring that only the minimum number of people are involved in the work, as little work as is possible is undertaken within the structures being demolished / dismantled, and that mechanical means are used whenever possible. Taking steps to prevent non-essential personnel and third parties from entering the area. Ensuring that no unplanned collapse of materials occurs.

All fragile materials within any existing structures will be identified and protected as required. No fragile materials will be used as working platforms, or form part of any access routes. Where any risk of falling through materials is identified, fall prevention methods such as barriers to prevent access, harnesses, safety netting or temporary platforms / crash decks to be installed underneath the material.

The handling of any fragile materials will be subject to risk assessment and additional control measures to ensure materials are adequately protected.

Work at Height / Falls

Falls from height are a major contributor to construction fatalities, therefore, all working at height shall be controlled through the use of method statements, ensuring that risks are thoroughly assessed and minimised where working at height cannot be avoided.

When working at height is anticipated, the Site Manger is expected to highlight the hazards and promote safe working practices during site inductions and toolbox talks.

The following system of controls will be implemented:

1. Avoid high level working wherever possible.
2. If work at height cannot be avoided, then a rigid barrier edge protection around all edges of areas where persons could fall any distance that might cause injury (including temporary access platforms) will be the priority measure.
3. Toe boards and guards to contain work equipment and to prevent fall of materials will be installed.
4. Warning signs at ground level will be displayed below working areas.

5. Where the risks of falls from height cannot be totally eradicated, then fall-arrest measures such as harnesses, air bags or safety netting below the working area will be selected to limit the falling distance and to cushion the fall.
6. The Site Manager is to ensure that perimeter site barriers and warning signs at base level are maintained at all times.

To minimise slips and trips on site, good housekeeping is an essential part of our site safety procedures, and unless otherwise specified workers are expected to: (a) keep their working area tidy; (b) report any area of the site in poor housekeeping state to the site manager.

Confined Spaces

All confined space work to be subject to a task specific risk assessment and a permit to work system.

Confined space work will be eliminated where possible.

Valid permit must be displayed at entrance prior to confined space work proceeding.

Any work place from which it is not possible to simply walk away in an emergency must be a confined space e.g. closed tanks and vessels, roof voids, large ducts and pipes, inspection chambers etc.

Confined spaces will be tested prior to entry to ensure safe to enter and method of communication and rescue procedures established.

Personnel trained in confined space work. Rescue and communication procedures arranged prior to confined space entry. Rescue procedures triggered through lack of communication rather than having to summon help as this may not be possible.

Lifting Operations

All lifting operations must be assessed and planned by a competent person, and a lifting plan developed prior to the lift commencing.

Unsafe lifting operations can not only harm those involved in the lift but also other site personnel and members of the public. Failure to undertake lifting operations safely can also cause considerable damage to materials, property and the lifting equipment itself.

The Site Manager will have overall responsibility of lifting operations on site and will act in compliance with all relevant H&S Regulations in particular the Lifting Operations and Lifting Equipment Regulations (LOLER).

Lifting operations will be pre-planned taking into account all aspects of the load to be lifted. Banksman/Slingers will be adequately trained and competent.

Competent person to be in charge of lifting operations.

Clear segregation of working areas and close supervision by the Site Manager is required to ensure that persons are kept clear of areas directly beneath or in line with any lifting or swinging across of materials or structures.

All plant involved in lifting operations on site must have current valid lifting certification as detailed in the Lifting Operations and Lifting Equipment Regulations 1998. Copies of the certification and current weekly inspections will be held in the site H&S folder.

Work On or Near Water

Any work on or near water will be subject to a task specific risk assessment with appropriate rescue procedures in place prior to work commencement.

No lone working will be permitted where work is on, over or near to water courses. Where possible any work on water will be eliminated through alternative work methods and/or temporary enclosures such as cofferdams to maintain a dry work area.

Permit to work to be in place for works on or over water.

Workers will be made aware of any risks associated with leptospirosis and precautions taken such as good hygiene, PPE and symptom awareness.

Other Significant Safety Risks

For the safety of all operatives and members of the public that may be present within the surrounding site area, all drivers must not exceed 5mph within the site boundary. Under no circumstances should contractors park obstructing neighbouring properties.

No other adjacent land use is anticipated to be affected by the works.

No other significant safety risks not outlined above have been identified.

Control of Health Risks

Asbestos

A Refurbishment and Demolition Asbestos Survey will be carried out before any materials can be disturbed as part of demolition, refurbishment or maintenance works.

Any asbestos containing materials likely to be disturbed during the works to be removed in accordance with current asbestos regulations and as recommended within the survey.

If any suspected asbestos materials are discovered during the course of the works, all works must cease and do not disturb the suspected materials.

The Client will be contacted immediately, and testing of the material will take place before proceeding with any works. If the suspected asbestos material is disturbed accidentally, or is already friable and presents a risk, the area will be closed off immediately for an environmental clean by specialist asbestos removal company.

Hazardous Materials & Substances

We have not been informed by the Client or Designers of any other hazardous materials present within the existing structure.

All materials shall be used in accordance with good practice and current Health & Safety Regulations including COSHH Guidance Notes from manufacturers and suppliers.

Any contractor bringing onto site any hazardous substance must notify the contracts manager and be in possession of a suitable COSHH assessment and material data sheet.

All containers on site must be labelled.

All substances are to be stored as detailed by the manufacturer's health and safety data sheets.

COSHH Assessments will be undertaken by competent person for all hazardous substances.

All hazardous substances to be stored in locked storage areas, designed specifically for the substances, with good ventilation and away from direct sunlight and any sources of ignition.

No unauthorised person to use a hazardous substance.

PPE to be worn as directed in individual COSHH assessments.

Hazardous substances must be used well away from drains and watercourses to avoid risks of environmental pollution.

Contaminated Land

No contaminated land has been identified. However, caution is advised, as some degree of contamination may be present in any existing site.

Contamination risks will be minimised by the selection of safe working methods and suitable PPE, and the risks to third parties are not significant.

To overcome harmful effects of any identified contaminants, the following precautions apply:

- Minimise contact between humans and the contaminated area.
- Use mechanical means where possible to work on and move contaminated ground.
- Use PPE to protect operatives, including protective overalls and gloves.
- Thorough washing and cleaning procedures should be followed for people, equipment and plant.

Noise, Vibration & Dust

There are not anticipated to be significantly high levels of noise or vibration during the construction phase. Levels will be minimised through the selection of equipment, working procedures, and job rotation.

Vibration and noise levels will be monitored throughout the project.

Control measures will be specified where applicable within Method Statements.

Operations shall be subject to a noise assessment if required and control measures implemented.

All contractors are to implement best practicable means to minimise noise in accordance with current statutory regulations and local requirements. The site manager will stop any operations deemed to be unreasonably noisy.

All contractors to ensure that PPE to comply with the Noise at Work Regulations is issued to their own operatives where required. Appropriate PPE for the site activities will be available on site. Works will not commence without suitable PPE, such as ear defenders, where required.

Where high levels of dust are anticipated during works the Site Manager will be responsible for issuing face masks or other respiratory/PPE specified in Method Statements.

Manual Handling

All operatives will be made aware of the risks associated with manual handling. On site training and tool box talks to be delivered as appropriate to raise awareness of the risks.

When necessary, mechanical hoists and lifting equipment will be utilised to minimise the risk of injury to operatives. When lifting or moving materials, use mechanical means wherever possible.

When lifting and depositing loads, ensure that the load is manageable and, if necessary, ask for help if load is heavy and bulky.

Avoid individuals lifting any load heavier than 25kg, or large or bulky items. Larger loads should be moved mechanically by a fork lift truck (telehandler), hoist or barrow or otherwise by employing a team lift.

Ensure that access routes are clear, to avoid slips, trips, falls or awkward positions.

Avoid the manual handling of heavy loads up and down access ladders and steps. There is an increased risk of strain due to lack of control over the load and possible falling persons or objects.

Other Health Risks

Appropriate precautions will be in place to protect the workforce from sun exposure through the use of clothing and barrier creams.

Any other health risk on site must be reported to site manager, so that necessary steps can be taken and recorded.

Risk Register

Public Safety & Adjacent Land Use

Risk	Control
Unauthorised persons entering site	Site access via secure gated entrance which will be locked out of hours
Movement of plant and machinery on site	No members of the public to have access on to site
Work adjacent to the site boundary	Any work outside the site boundary to be risk assessed and temporary fencing erected
Access Routes for Vehicles, Plant and Pedestrians	Segregated access routes where possible. Access routes to reduce the need for turning or reversing.
Vehicles and Plant Manoeuvring	All vehicles manoeuvring on or off site and around site to be accompanied by a banksman if in close proximity to pedestrians, other vehicles or structures.

Environmental & Ground Issues

Risk	Control
Noise - above 80dB(A) or 10dB(A) above background noise out of hours	Disruptive works completed within normal working hours. Ear Protection for operatives
Exposure to high levels of vibration	Work on vibrating equipment will be minimised. Exposure will be restricted within the legal limits.
Dust exposure to operatives	Dust masks/RPE provided for activities if required particularly silica containing products
Risk of water contamination through spillages	Refuelling areas away from natural water or surface water drainage. Spill kits provided.
Removal of construction debris	Contractor to supply skip through licensed waste management company
Gas - Possibility of damage during excavation	Services to be located and marked on site
Electricity - Possibility of damage during excavation	Services to be located and marked on site
Water - Possibility of damage during excavation	Services to be located and marked on site
Sewers - Possibility of damage during excavation	Services to be located and marked on site

Fire & Emergency

Risk	Control
Fire Risk on Site	Possible risk due to hot works. Hot works permit to be issued prior to any hot works commencing
Fire Risk to Adjacent Buildings	As above
Fire Escape Blockage	Existing fire escapes to be kept in use. All existing fire escapes to be kept clear at all times
Access Routes Obstructed	Materials blocking escapes. No materials to be stored in walkways
Fire & Emergency Planning	PC to produce a fire plan and will ensure that the works are executed in accordance to the procedures set out
Inhalation, burns, risk of fire from use of Flammable Substances	Recommendations as details on manufacturer's safety data sheets on storage to be complied with. Gases and flammable liquids to be stored as required by the HFL DSEA Regs
Arson	Site security to be maintained throughout project. Skips and waste materials to be located away from perimeter and buildings.

Site Hazards

Risk	Control
Manual Handling - Dropping, crushing, straining	PC to control delivery and movement of materials to ensure loads being lifted by individuals do not exceed those that can be safely lifted
Demolition - Collapse, crushing	PC to ensure that demolition is carried out in a controlled way by competent contractors working to an approved RA/MS and in accordance to procedures contained within the H&S Plan
Excessive noise	Ensure that all noisy operations are minimised during occupation of the building. Excessively noisy operations will be subject to noise assessments and programmed to minimise disruption
Stability of existing structures	PC will protect any existing structures that may be effected by the works
Electrical, Mechanical	PC to ensure that all areas are surveyed prior to works commencing. Live work prohibited on site
Hazardous Substances - Sealants, Adhesives, Paints etc	PC will ensure use by competent personnel working to approved RA/MS and thorough COSHH assessment. The COSHH data sheet will be with the RA/MS
Disturbance of Asbestos Containing Materials	Client to provide refurbishment and demolition(previously type 3)survey prior to commencement. Works to stop if ACM found
Falls of persons/materials	Safe access provided to be provided to all work faces. Competent personnel working in accordance with approved risk assessments and method statements will erect access plant and platforms
Contact with falling materials from overhead work	Adequate protection from work being carried out overhead. Exclusions zones below work at height as required
Persons falling down holes/excavations	Secure barriers to be fixed around all openings or plates/timber fixed over service holes
Falls of persons causing injury	Fragile materials to be identified. Depending on location use of guardrails, toe boards, barriers,

	suspension and fall arrest equipment. RA/MS to be provided
Slips, trips and falls - Fall of persons causing	injury Constant monitoring of housekeeping. Maintaining of access/egress routes

Fire Procedures

The fire and emergency plan for the project will be displayed at the site office and is included in the Fire Safety Plan within this document. Fire extinguishers, notices, alarms and fire exits will be provided for all working areas.

In accordance with our Hot Works Permit to Work System, all Hot Works must be authorised by a permit to work and must cease at least 1 hour before site closure.

Fire Safety Plan

Fire Plan Principles

- Site specific fire arrangements will be briefed to all site operatives through the site induction
- The site shall have a designated Fire Marshal
- Fire alarms, call points and extinguishers must be maintained on occupied floors
- Floors under the control of the Principal Contractor will have alarm call points and extinguishers maintained at all times
- Where the works take place in occupied buildings then the buildings own fire warning system will be used with the permission of the occupier

Principal Contractor Responsibilities

The overall responsibility for the prevention of fire rests with the Principal Contractor

All sites are no smoking sites except for designated areas

No burning is permitted on site

The design team and client will, where possible, specify materials of a non-flammable nature

The Principal Contractor is responsible for ensuring adherence to the project fire plan and procedures, and will:

1) Provide and maintain in good working order, suitable and sufficient fire fighting equipment and establish safe and adequate fire assembly points;
2) Maintain means of safe access and egress in all areas at all times;
3) Liaise with the design team and client to secure permanent fire fighting equipment to be brought into service as soon as possible;
4) Include fire patrols as part of the site safety inspections;
5) Conduct fire evacuation tests regularly as per the company's test procedures; 6) Update the fire plans as the project progresses and inform site operatives accordingly; 7) Provide secure storage for flammable / highly flammable liquid and compressed gas.

Contractor Responsibilities

1) Complying with all relevant statutory requirements and procedures relating to fire prevention as laid down by the Principal Contractor;
2) Using, where possible, non-flammable materials for temporary works, packaging etc;
3) Ensuring that safe systems of work are carried out on site;
4) Advising the Principal Contractor of all COSHH materials brought onto site, to include data sheets;
5) Where required appoint fire marshals; 6) Obtain permits for all hot works;
7) Liaise with and obtain approval from the Principal Contractor for all use and storage requirements of flammable liquids and gases;
8) Petrol / Diesel equipment should be located so that exhausts are well away from combustible materials with engines shut off during refuelling operations
9) Oxygen cylinders should be stored well away from readily combustible materials and acetylene or other fuel gas cylinders, separated from other stores by fire resistant materials and well ventilated
10) Liquid petroleum gas cylinders containing propane or butane should be stored in the open, well away from any heat source, in a secure well ventilated and suitably labelled storage area
11) All cylinders when not in use should be returned to the storage area immediately. Use of cylinder should be covered by a risk assessment / method statement
12) The electrical subcontractor appointed by the Principal Contractor will carry out regular inspections and tests on all electrical equipment and fittings
13) Ensure that open fires are not started for any reason The Principal Contractor and Contractors will target a zero loss rate due to fire

Suitable Means of Escape

- All works must be designed and erected so that a safe route is always available to a final exit (place of safety)

- Fire exits must be clearly identified, with a maximum travel distance in accordance with relevant standards

- Fire escape routes are to be kept unobstructed and, if necessary, illuminated at all times

- When work necessitates use of naked flames, a portable fire extinguisher is to be readily available, and works must only commence when a Permit to Work/Hot Works Permit has been issued by the Principal Contractor

Fire Fighting

The Principal Contractor will establish a site procedure for dealing with fire emergency that takes into account the hazards involved and site specific features, the procedure includes the following points:

1) Sounding a warning alarm

2) Dealing with a fire
3) Closing down of operations
4) Evacuation of the area
5) Assembly at marshal points and roll calls
6) Locating missing persons

The contractors Fire Marshal will instruct and train all personnel under his control under his control precautions and the actions to be taken in the event of fire

The Fire Marshal will instruct and train all supervisors in the correct use of fire fighting equipment

The Principal Contractor will arrange for adequate numbers of hand extinguishers of a suitable type to be available and maintained within the permanent works as they develop until such time as a permanent provision is secured

All fire fighting equipment will be properly maintained, examined and tested in accordance with the manufacturer's instructions, and shall conform to the relevant British Standard

Fire Emergency Protocol

1) In the event of discovery of any fire, the nearest local fire alarm will be activated by the discoverer of the fire
2) All personnel within audible distance of the alarm will immediately evacuate the area and report to the assembly / muster point
3) The Site Manager must be notified immediately by the quickest practical means by the discoverer of the fire
4) The Site Manager will immediately:

A. Activate the fire alarm (if not already)
B. B. Contact the emergency services requesting assistance
C. C. Ensure all areas are quickly evacuated and site personnel are at assembly points D. D. Notify the Client

5) The Site Manager will establish where possible:

E. E. The exact location of the fire
F. F. The extent and nature of the fire
G. G. Whether there are any casualties
H. H. The evacuation status

6) Without taking any personnel risks, and if reasonably safe to do so, and attempt may be made to extinguish the fire by using the nearest appropriate extinguishers
7) All contractors supervisors will report to the Principal Contractor's representative at the assembly point and verify that all personnel under his control are accounted for as a result of the evacuation

8) The Principal Contractor will arrange for the emergency services to be met at the main access point, and guide / direct them to the incident
9) Upon arrival of the emergency services, the Principal Contractor's site manager will brief the officer in charge, and provide such assistance as required
10) 10. No person will return to work until the all clear has been issues from the Fire Marshal

Health and Safety File

All relevant information for the H&S File will be submitted to the Principal Designer appointed by the Client for this project. The information that will be gathered includes:

1) Construction Methods
2) Safe Systems of Work
3) As Built / As Installed drawings
4) O&M Manuals
5) Specifications / Data Sheets
6) Any further information requested by the Principal Designer for the compilation of the H&S File.

Any other information required by the Principal Designer will be supplied on request.

Gathering of Information

Subcontractors must submit all relevant health & safety information, method statements and risk assessments specific to this contract, the method statements are to include identity of the author, date prepared, PPE to be worn (over and above standard PPE for the site), they will be project specific and include any plant/equipment to be utilised. This information will be collated and filed on site as part of the contract health & safety file under CDM Regulations.

Subcontractors must also submit relevant O&M manuals, material specifications and As Installed Drawings where applicable for inclusion in the H&S File. All subcontractors will be responsible for obtaining relevant COSHH information for materials associated with their works and this will be issued with their method statements and risk assessments and will be held in a separate file by the Site Manager.

All information must be issued on or before date of project completion. Retention reduction will not be released until this information has been provided and approved.

An instruction is included on all purchase orders to ensure that the relevant COSHH information is provided by suppliers. This information is retained in a central file and then issued as required.

Storage of Information

All relevant information will be stored electronically and, where applicable, in hard copies.

APPENDIX E – KP MONITORING QUOTATION AND SPECIFICATION

KP monitoring
Part of the KP Acoustics Group

KP Monitoring Ltd.
info@kpacoustics.com
1 Galena Road, W6 0LT London, UK
+44 (0) 208 222 8778
www.kpacoustics.com

Quote Ref: KPM-22683-S.300322.Q2

Company: Cert Property

Date: 30 March 2022

By email only to: nigelpearce@certproperty.co.uk

Re: Peelers Yard (Goulden Street), Environmental Monitoring Services

Dear Nigel

Further to your recent enquiry, we have pleasure in submitting our proposals for environmental services at the above project.

The proposed services are detailed in the following pages together with any assumptions and limitations that have been made in connection with these proposals.

We hope that these proposals are in line with your expectations and we look forward to working with you on this project.

Yours sincerely

On behalf of KP Monitoring Ltd.



Richard P Booth

Environmental Monitoring Team

Summary of Project Fees

Fee Outline	Fee (exc. VAT)
Part A – Environmental Monitoring (Silver Package, 50 Weeks)	£8,450.00
Part B – Structural and Movement Monitoring (54 Weeks)	£7,560.00

Environmental Services (Silver Package) Proposal

Part A – Environmental Monitoring

In order to monitor the environmental impacts of the project at Peelers Yard (Goulden Street), KP Monitoring Ltd propose to monitor emissions from the site at 2No. locations. We propose to install 2No. vibration monitoring sensors at the base of the chimney for a minimum duration of 50 weeks.

The following table details our deliverables for vibration monitoring at the Peelers Yard (Goulden Street) project.

Deliverables	No. Off
Proposed monitoring locations	2
Vibration monitoring sensors	2
Minimum duration (weeks)	50
Equipment guarantee – Calibrated and tested equipment	✓
Installation	1 day(s)
Decommissioning	1 day(s)
Ongoing calibration, service and maintenance of devices	✓
Online access to data via the KP Olympus web portal	✓
Public-facing website	✗
Data validity	✓
Email trigger notifications as required	✓
SMS trigger notifications as required	✗
Off-grid power solution	✗
Off-grid power management	✗
Written reports	✓
Call out	Within 3 working days

The following table details the proposed power supplies required for vibration monitoring at the Peelers Yard (Goulden Street) project.

*Power Supplies	Power Supply
Vibration monitoring sensors	Mains power only

*See 'Onsite Power' described in our Terms and Conditions.

The following table details our proposed fees for vibration monitoring at the Peelers Yard (Goulden Street) project.

Fee Outline	Fee (exc. VAT)
Instruction Fees	
Fee payable upon instruction of project	£00.00
Installation Fees	
Fee payable upon installation of equipment (includes decommissioning and removal)	£450.00
Weekly Fees	
Environmental monitoring sensors fee per week (or part thereof)	£160.00
Presentation of data (KP Olympus Website & Monthly Reports)	Included
Additional Fees	
Call out	£160.00 per hour on site (or part thereof)
Total Proposed Environmental Monitoring Fees	
Proposed fees for 50 week minimum duration	**£8,450.00**

Part B – Structural and Movement Monitoring

In order to monitor the structural impacts of the project at Peelers Yard (Goulden Street), KP Monitoring Ltd propose to monitor the chimney structure. We propose to maintain up to 8No. live tilt monitoring sensors on the chimney, with the assistance of the site team and an MEWP as required, for a minimum duration of 54 weeks (backdated to 01 February 2022). Note that it will be the responsibility of the Client to provide the high-level access, i.e. the MEWP, for decommissioning of the sensors.

The following table details our deliverables for structural monitoring at the Peelers Yard (Goulden Street) project.

Deliverables	No. Off
Proposed tilt monitors	8
Minimum duration (weeks)	54
Calibration, service and maintenance of devices	Included
Equipment guarantee – Calibrated and tested equipment	✓
Installation	Completed
Decommissioning	1 day(s)
Ongoing calibration, service and maintenance of devices	✓
Online access to data via the tilt-monitoring web portal	✓
Public-facing website	✕
Data validity	✕
Email trigger notifications as required	✓
SMS trigger notifications as required	✕
Off-grid power solution	✓
Off-grid power management	✓
Written reports	✕
Call out	Within 5 working days

The following table details our proposed fees for structural monitoring at the Peelers Yard (Goulden Street) project.

Fee Outline	Fee (exc. VAT)
Instruction Fees	
Fee payable upon instruction of project	£00.00
Installation Fees	
Fee payable upon decommissioning of tilt monitors only	£00.00
Weekly Fees	
Tilt monitoring sensors fee per week (or part thereof)	£140.00
Presentation of data (Website Only)	Included
Total Proposed Structural Monitoring Fees	
Structural monitoring proposed fee for 54 weeks	**£7,560.00**

TERMS AND CONDITIONS

This offer stands valid for acceptance for 30 days from issue date and is subject to equipment availability.

The overall procedure would be facilitated with the provision of any site plans, outline site drawings and/or relevant planning conditions. Copies of liaison/correspondence between relevant parties would be required where the subject matter is relevant.

Installation & Decommissioning of Environmental Monitoring Equipment

1.0 As part of our equipment guarantee, KP Monitoring Ltd shall calibrate and test all equipment to be installed prior to installation. This testing shall ensure that monitoring instruments fall within defined tolerances appropriate for environmental monitoring.

2.0 KP Monitoring Ltd will configure the monitoring equipment and install the system at the relevant site. KP Monitoring Ltd shall also decommission and remove the equipment on completion of the project.

3.0 Installation of equipment is assumed to be to a single site and is to be carried out in one continuous visit. This assumes normal weekday, daytime working unless otherwise agreed.

4.0 Decommissioning of equipment is assumed to be to a single site and is to be carried out in one continuous visit. This assumes normal weekday, daytime working unless otherwise agreed.

5.0 Unless otherwise agreed, the Client is responsible for

- supplying a suitable power supply (110/230V) within one metre of the agreed monitoring locations;
- providing suitable fixing surfaces for the equipment in the agreed monitoring locations;
- providing safe and secure monitoring locations such that theft is deterred;
- providing safe access to monitoring locations, including use of any specialist access equipment as required;
- permissions to install monitoring equipment on 3rd party structures or property as required.

6.0 Maintenance visits assume normal weekday, daytime working unless otherwise agreed. The Client shall allow KP Monitoring Ltd access to the equipment at any time during the monitoring period without reason or explanation.

7.0 The Client shall not remove ownership labels on any equipment.

8.0 No adjustments or modifications to the installed system are to be made without prior consultation with and agreement from KP Monitoring Ltd.

9.0 Making good of any holes due to any fixings is to be carried out by the main contractor following the decommissioning of the monitoring equipment.

Onsite Power for Environmental Monitoring Equipment

10.0 It is always the preference of KP Monitoring Ltd to provide onsite environmental monitoring using a suitable 110/230V mains power supply. This ensures the best possible data capture rates.

Off-Grid Power Solutions

11.0 Where a suitable 110/230V power supply cannot be supplied within one metre of the monitoring position, and it has been agreed herein, KP Monitoring Ltd will provide an off-grid solar and/or battery station solution as detailed below.

12.0 It should be noted that MCerts air particle monitoring stations always require the use of a mains power supply (110/230V) and cannot be run from a solar/battery off-grid solution. If an off-grid solution is required for these monitors, this will need to be arranged separately with KP Monitoring Ltd.

Gold Total-Management Package

- A solar panel and battery solution will be provided such that the installed instruments should not require power maintenance or battery changes dependent on weather conditions and sight to sky conditions.
- KP Monitoring Ltd shall maintain the solar and battery solution on behalf of the Client and to aid the smooth running of the project. This shall include any charging and exchange of batteries as required.

Silver Supported Package & Bronze Self-Managed Package

- A solar panel and battery solution will be provided such that the installed instruments should not require power maintenance or battery changes dependent on weather conditions and sight to sky conditions.
- A battery station solution will be provided such that there are 2No. external batteries and 1No. mains charger per monitoring station. The battery station shall feature a universal quick-change such that one station can be on charge whilst the other is in operation on site.
- We would strongly urge that each battery station is charged and swapped once per week (for example, charged over the weekend to be swapped on Monday morning).
- It shall be the responsibility of the Client to maintain any off-grid systems operation including the charging and swapping of onsite batteries.
- It should be noted that battery stations may be up to 25kg each in weight and, as such, should be handled with the appropriate due care.

Our Commitment

13.0 Although KP Monitoring Ltd shall make every effort to mobilise promptly, a lead time of up to two weeks may be required before initial and phase installations.

14.0 KP Monitoring Ltd shall undertake appropriate maintenance and calibration checks on the equipment during its on-site service, in accordance with recommended and appropriate guidance.

15.0 KP Monitoring Ltd shall remain responsible for the maintenance and calibration of all environmental monitoring equipment (excluding repair or replacement due to damage or theft).

16.0 KP Monitoring Ltd will supply monitoring services undertaken with the due reasonable skill and care necessary and expected, and shall use a sufficient number of suitably qualified personnel.

Fees

17.0 The fees indicated herein and in other documentation are inclusive of all UK expenses, but exclusive of VAT, which would be charged at the current rate.

18.0 Please note that these proposals reflect the time and work commensurate to the type and size of the project. Any site visits or call outs shall be carried out at our hourly rate, as described below, and excludes travel time to or from site within the mainland UK. Site visits shall only be undertaken with prior approval from the Client. These chargeable visits exclude those for regular calibration, service and maintenance of devices, but include monitor relocations, investigations for unusual data activity and investigations for loss of connection beyond the control of KP Monitoring Ltd.

19.0

Environmental Monitoring Package	Hourly Rate (excluding VAT)
Bronze Self-Managed	£240.00
Silver Supported Management	£120.00
Gold Total-Management	Included

20.0 Fees shall begin to accumulate for environmental monitoring once the equipment is on the site and shall cease on the removal of equipment from site or the agreed upon contract end date.

21.0 Should monitoring continue beyond the agreed minimum duration stated herein, fees shall continue to be charged at the weekly rate also detailed herein.

22.0 In the event that environmental monitoring is put on, hold 100% of the total weekly fee shall be payable for the duration of the hold period, unless otherwise agreed.

23.0 Should the Client wish to terminate the project prior to the completion of the minimum duration as stated in the deliverables above, then a fee of 30% of the remaining project fees for the full duration shall be paid by the Client.

24.0 Should the Client require the use of SMS text alert messages, these shall be inclusive according to the appointed package level up to a maximum number of 250 messages per week. Any messages exceeding this number shall be charged at £0.05 (inc. VAT) per message.

25.0 Payment should be made within a 30-day period after issue of our invoice which would be done after the completion of the environmental noise survey. Payment would be required to clear prior to the release of our technical report, unless otherwise agreed in writing.

Additional Fees

26.0 Additional fees for commuting to and from the site may be applied as per our hourly rate as stated below in the instance of an abortive site visit, including any travel to and from site, where circumstances are within the control of the Client. These would include but are not limited to: access to the site not being possible at the time of visit, the site not being in a suitable state for any acoustic measurements, or the site being deemed to be insecure at the time of visit.

27.0 Fees for additional services, excluding site visits, may be applied as per our hourly rate as stated below including any travel to and from site. These would include but are not limited to: meetings with Clients or stakeholders, alterations to reports beyond the scope of basic reporting or any consulting time required by the project beyond the scope of these proposals.

Environmental Monitoring Package	Hourly Rate (excluding VAT)
Bronze Self-Managed	£240.00
Silver Supported Management	£120.00
Gold Total-Management	£90.00

Consultancy and Research Labs Fees

28.0 Where the Client has appointed KP Monitoring Ltd to environmental monitoring works, the discount stated within the appointed package shall apply to all KP Acoustics Ltd consultancy surveys and reports, as well as KP Acoustic Research Labs Ltd training and courses. This discount shall apply only during the period in which KP Monitoring Ltd is carrying out monitoring works or has otherwise been agreed.

Insurance and Risk

29.0 It is assumed that the site is sufficiently secure to allow the installation of automated monitoring equipment without the risk of vandalism or theft. If the site conditions are considered to be insecure, in the case of any baseline surveys a manned survey may need to be undertaken, which would result in additional fees.

30.0 Upon installation, the Client shall assume complete responsibility for the Equipment while in its possession and must ensure it has appropriate storage and security arrangements in place to protect it from loss, damage, theft, and destruction. No equipment should be moved from one site to another, nor can any equipment be loaned or leased to any third party. KP Monitoring Ltd advises that the Client insure the equipment to its full value, against loss by fire, theft, and other insurable hazards. The Client will protect and hold KP Monitoring Ltd harmless from and against any losses and liabilities arising because of any cause of action brought against KP Monitoring Ltd that relates to the Client's use or misuse of the system.

31.0 Financial loss as a result of any loss, damage to, or theft of equipment whilst in the possession of the Client shall be charged to the Client at the full and current retail cost of said compromised equipment.

Olympus Web Portal and Data Reporting

32.0 KP Monitoring Ltd shall always use reasonable endeavours to make the Olympus web portal available, subject to reasonable maintenance periods. KP Monitoring Ltd does not, however, warrant that the operation of Web Portal will be uninterrupted or error-free, or that the features or functionalities of the Web Portal will be available at any time in the future.

33.0 The Client acknowledges that use of Olympus web portal relies on successful data transfer via communications networks and, due to their inherent nature, KP Monitoring Ltd is not liable for any failure or loss of data caused by interruptions, interference or failure of the mobile network, poor or intermittent network coverage or for any loss or interruptions in power.

34.0 KP Monitoring Ltd shall not be held responsible for any loss of data due to power loss, damage or any other type of interference with monitoring equipment performed on site, either intentionally or accidentally, by entities acting outside of KP Monitoring Ltd.

35.0 Written reports, as included within the appointed package shall detail the gathered data in graphical format, statistics pertaining to that data and any trigger or action level exceedances. Any information required within reporting beyond the standard given should be agreed with KP Monitoring Ltd and may potentially be charged at the hourly fees described in Section 26.0.

36.0 KP Monitoring Ltd will take all reasonable measures to ensure the security and privacy of Client data. KP Monitoring Ltd will maintain the data securely for a period of seven years following the completion of the project, unless otherwise agreed.

Force Majeure

37.0 KP Monitoring Ltd cannot control, and so is not liable for, any for delays in delivery of the equipment or services, any failure of the System to operate or any loss or damage to data caused any event beyond its reasonable control (including without limitation any failure of or interruption to communications networks, power supplies or third-party interference).

Cancellation

38.0 KP Monitoring Ltd can cancel the agreement immediately by written notice to the Client where the Client is in material breach of the agreement including, for example, non-payment of fees.

INSTRUCTION FORM

1 Galena Road
London
W6 0LT
T: +44(0)208 222 8778
F: +44(0)208 222 8575
email: info@kpacoustics.com

Please complete and return this form at least 24hrs prior to installation date

Client Name		
Invoicing Address		
Accounts Email Address		
Purchase Order Number		
Contact telephone numbers	Landline:	Mobile:
Site Contact	Name:	Mobile:
Site full postal address		

1. Full access to site should be allowed with a secure location to install environmental monitoring equipment without risk of theft or vandalism
2. Site plans / architectural drawings / planning conditions to be provided prior to the survey
3. Full payment to be made within 30 days of the date of issue of our invoice

This is a formal appointment of KP Monitoring Ltd. to undertake and fulfil the scope of work referenced KPM-22683-S.300322.Q2 Terms of contract of KP Monitoring Ltd. can be provided upon request.

Print Name: **Date:**

Signature:

APPENDIX F – PILING METHOD STATEMENT

Greenpiling

CONTRACT SAFETY PLAN FOR CFA PILING

13731 - Goulden Street

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

THE FOLLOWING INFORMATION IS CONTAINED WITHIN THIS SAFETY PLAN

CONTENTS

1	Record of Site Induction
2	Site Introduction
3	Operatives Safety Qualifications
4	Method Statement – Site Mobilisation
5	Method Statement – Erecting Piling Rig
6	Method Statement – Movement of Piling Rig
7	Method Statement – Refuelling
8	Method Statement – Vibration Monitoring (if applicable)
9	Method Statement – CFA Construction Method
10	Method Statement – CFA Piling
11	Method Statement – Construction Monitoring
12	Method Statement – Cleaning Out Equipment & Clearing Blockages
13	Method Statement – Steel Fixing Loose Reinforcement
14	Method Statement – Pile testing
15	Method Statement – Environment
16	Method Statement – Security
17	Method Statement – Leaving Site
18	Method Statement – Communication & Liaison
19	Site Photos
20	Site Location Plan
21	Typical Transport Photos
22	Typical Site Setup Photos
23	Equipment Details CFA Piling Rig
24	Lift Plan
25	Site Specific Risk Assessment
26	Manual Handling
27	COSHH Assessment
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CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

REV	DATE	STATUS/ DESCRIPTION
0	02/12/2021	Preliminary

PREPARED BY			
Name	Position	Signed	Date
Scott Farrar	Contracts Manager		

RECIEVED BY			
Name	Position	Signed	Date
Piling Foreman	Piling Foreman		

ACCEPTED BY			
Name	Position	Signed	Date

RECEIVED & UNDERSTOOD BY

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 Green Pilings HSQE Dept.

All accidents must be reported directly to the Green Piling HSQE Dept. on **08450 511800**

A Green Piling Permit to Work must be completed fully and signed off.

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 Green Piling 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.

Edge protection or fall arrest must be in place for work at height.

All plant and equipment must be inspected and maintained in good working order.

Use the correct tools and equipment for the task at hand. DO NOT IMPROVISE.

All work areas must be kept clean and tidy. All debris to be placed in the correct waste skip.

Name	Position	Signed	Date

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

SITE INTRODUCTION AND DETAILS		
SITE ADDRESS	Goulden Street, Manchester, M4 5EZ	Name: Tel:
CLIENT	Mulbury Great Oak Farm, Mag Lane, Lymm, Cheshire, WA13 0TF	Tel:
PRINCIPAL DESIGNER	TBA	Tel:
PRINCIPAL CONTRACTOR	Mulbury Great Oak Farm, Mag Lane, Lymm, Cheshire, WA13 0TF	Tel:

SCOPE OF WORKS

Green Piling have been appointed by Mulbury to undertake the design, supply, installation and testing approximately 12 number continuous flight auger piles of 450mm diameter.

100% Integrity testing of all CFA piles using sonic echo method of testing. Green Piling require two clear days notification from Mulbury when integrity testing is required.

Supply and fix de-bonding foam to all rebar cages. Foam will only be placed to a tolerance of -150/+150mm to a target level of 150mm above pile cut off level. No cutting down of piles has been allowed and an element of hand trimming will be required. Engineering level control is to be provided by others.

PLANT & EQUIPMENT REQUIRED

Soilmec SR35 Piling Rig	Mobile Elevating Working Platform
Trailer mounted concrete pump	Storage Container (normally 10ft/3m)
Concrete agitator	Concrete Cube Curing Tank
Compressor	Stihl saw
Bunded Fuel bowser	

An attendant 360° tracked excavator (minimum 13 tonnes) and dumper is to be provided by Mulbury. The piling foreman is to check the machine operators plant operators CPCS card is in date and covers the plant to be operated. He is also to ensure that the operator is included in the Green Piling inductions and all site safety toolbox talks.

As the attendant excavator will be required to work in close proximity to Green Piling personnel the foreman is under instructions to raise with Mulbury any doubts as to the drivers abilities or communication skills, notwithstanding any formal qualifications the driver may have.

Welfare facilities are to be provided by Mulbury and are to be in line with CDM Regulations (2015); it is anticipated that Green Piling will have 4-6No personnel on site per rig.
The requirements include:

- Washing facilities, including hot and cold running water, soap and drying facilities.
- Toilet facilities regularly cleaned and serviced.
- Drinking water and drinking vessels.
- Suitable clothes changing and overnight drying facilities.
- Messing area (Food preparation and heating and means for boiling water).

MATERIALS

Ready-mixed concrete	Oils, fuels & greases
Reinforcement	Prime-a-pump lubricant

SITE WORKING HOURS

Mon to Fri – 0730 to 1800hrs

SAFE MEANS OF ACCESS AND EGRESS

Mulbury is to provide safe means of access and egress to the site and all work areas, including pedestrian and vehicle segregation within the site.

PUBLIC and ADJACENT PREMISES

The site boundary is to be kept secure by Mulbury and is to prevent unauthorised access onto the site. In the event of unauthorised people entering the piling area, the Piling Foreman is to cease all piling operations and ask the people to leave. Piling is not to restart until the piling area is clear. Green Piling Foreman is to ensure that this procedure is strictly enforced.

OTHER CONTRACTORS

All other personnel on site are to be notified of piling works to start by Mulbury and told not to enter into the piling area unless specifically involved. In the event of unauthorised contractors entering the piling area, piling is to cease and the contractors asked to leave. Piling is not to restart until the piling area is clear. Green piling Foreman is to ensure that this procedure is strictly enforced. It may be prudent for Mulbury to include a specific section within the site induction regarding Piling and the associated hazards; particularly with regard to hearing protection.

If other trades are working near the piling area Mulbury is to provide fencing to segregate the piling area from other operations, the Green Piling Foreman can stop piling works if it is deemed that follow on trades are working too close and effecting the safety of himself and others. If no other trades are working on site segregation may not be required.

PILING PLATFORM

Mulbury is to design, construct and maintain, a safe and adequate piling platform for the duration of the contract. The Green Piling Platform Certificate shall be signed by an authorised person from Mulbury to confirm the installed platform is capable of providing a stable base for the rig deployed to site.

Piling operations are not to commence until Green Piling have received a signed copy of the Working Platform Certificates and Permit to Dig from Mulbury.

The piling platform is to be constructed to safely support the bearing pressures of the Green Piling rig allocated to the project in both its travelling (BRE Load case 1) and working (BRE Load case 2) modes.

SITE RAMPS

All access ramps constructed by Mulbury are to be a minimum 6m wide at a maximum gradient of 1 in 10, unless specifically agreed in writing by Green Piling. Should the gradient be steeper than 1 in 10, it may be necessary to de-rig the piling rig and lay the mast down to travel safely up or down the ramp, causing unnecessary delay to the piling works.

The Piling Foreman is to check the access ramps and ensure that they are adequate for the purpose. In the event that the ramps are deemed inadequate then the travelling operations are to be suspended and Mulbury notified.

SETTING OUT

The pile positions are to be set out during the Piling by a full time Setting Out Engineer, provided by Mulbury.

The Setting Out Engineer is not to work in areas where piling operations are ongoing. The Setting Out Engineer must also be included in the Green Piling site safety induction if they are present on site.

SERVICES

Mulbury are responsible for 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, shoring etc) in accordance with HSE guidance HSG47.

Green Piling shall be notified of all known services within the piling area and to accurately mark these if they fall within 1.0m of any pile position. All redundant services are to be physically disconnected and capped off by Mulbury at the site boundary.

Mulbury and Green Piling are to visually check all piling areas and confirm any changes or additions to the “Permit to Dig”.

PILE REINFORCING CAGES

These will be fixed on site by steel fixing subcontractors; whom come under the direct supervision of the Green Piling Foreman.

OBSTRUCTIONS

If an obstruction is encountered during the boring operation, piling will be suspended and Mulbury notified and an instruction sought from the following options:

NOTE: Generally Normal CFA Piling will not drill through obstructions.

- **Move to another pile position while the obstruction is cleared**
  We will move to another pile position and record the abortive time spent on the obstructed pile.
- **Attempt to bore through the obstruction**
  In these circumstances, we do not accept any responsibility for the pile position remaining within tolerance. We will also record the time spent on boring through the obstruction and will seek additional payment for this time and any abnormal damage to the auger flights.
  If Green piling can drill through the obstruction, then pile construction will proceed as before.
  If Green Piling are unable to drill through the obstruction within reasonable time, Mulbury will be notified and asked for further instruction. The abortive time spent on the pile is to be recorded.

Any abandoned pile position will be backfilled with suitable material. Mulbury is responsible for backfilling any areas where obstructions have been removed. It is vital the backfilled area is properly compacted and the piling platform fully reinstated, including any geo-textile interface, to the original design/ specification.

SPECIAL CLIENT REQUIREMENTS

None given/ noted.

MANDATORY & TASK SPECIFIC PPE

Hardhats to EN397, EN50365, Safety Boot to EN ISO 20345, Overalls & Hi Visibility Clothing to EN471, Hand Protection to BS EN 388, Eye protection to BS EN166F, Hearing protection to EN352. Flame Retardant to EN 340:2003 EN ISO 11612:2008 (A1 B1 C1), EN ISO 11611:2007 (A1 Class 2) EN 1149-5:2008 Waterproofs to EN343. **A mandatory wearing of eye protection policy is in place with the exception of where wearing eye protection may increase the risk of accidents i.e. wet weather working or under artificial lighting.**

INDUCTION AND DISTRIBUTION OF INFORMATION IN THIS DOCUMENT

This method statement MUST BE briefed to the foreman responsible for the works. After the site induction the site foreman shall brief all site operatives and sub-contractors on site before commencing work. Everyone must sign off on the method statement to confirm that they have been briefed and that they understand the risks, controls and their responsibilities. Were work cannot be carried out in accordance with this method statement the foreman shall stop work and discuss any concerns with the contracts manager/ engineer and await further instructions. All site operatives and sub-contractors shall then be briefed on any changes to the method of work.

EMERGENCY PROCEDURES

In the event of any emergency including accidents, dangerous occurrence etc. works will cease immediately after machinery is made safe. If necessary, and unless otherwise agreed the muster point will be the normal site entrance. The site manager and Green Piling office will be informed of the event and works will only recommence after investigation and discussions between these parties.

VISITOR INDUCTION

Any visitors to the vicinity of the piling rig will be inducted as set out herein and sign visitor record.

PROCEDURES FOR DEPARTING FROM METHOD STATEMENT

No departing from the methods in this document is allowed without written addendums produced by the contract's manager/ engineer. All operatives can stop the works if considered unsafe in anyway.

CONTROL MEASURES

Before any piling operations commence, the Green Piling Foreman is to:

- Review the site-specific risk assessment, noting any special requirements and ensure that all piling operatives have received the necessary training to carry out their work.
- Brief the piling operatives on the site health and safety requirements and ensure that sufficient PPE provisions are available and that it is worn in accordance with Green Piling and Mulbury requirements. Mandatory PPE is safety helmet, safety footwear, Hi-Viz clothing, hand protection and ear protection. Other PPE is in accordance with risk assessment.
- Walk the work area and confirm all hazards are adequately controlled prior to work commencing.
- Ensure that Mulbury has signed off the Green Piling Working Platform Certificate to verify that the platform has been installed in accordance with the platforms design.
- Check that the piling rig has been thoroughly inspected and certificated within the last 12 months and that the lifting equipment has been thoroughly inspected and certificated within the last 6 months.
- Ensure that daily and weekly inspections are carried out on all plant and equipment and a record of inspection completed. Any problems/ defects must be reported to the contract's manager/ engineer immediately. All machinery shall only be operated by trained and 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 and check certification.
- Ensure that the Permit to Dig and Green Piling Permit To Work is completed fully and is signed prior to work commencing.

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

ROLES AND RESPONSIBILITIES ONSITE			
Each site foreman is directly responsible for the safe operations under his control on each site. The foreman is supervised on a visiting basis by managers who are based at head office.			
Managing Director	David Green	08450 511800	07801 768741
Operations Director	Mick Mason	08450 511800	07834 800525
Contracts Manager	Colin Monk	08450 511800	07966 303884
Contracts Manager	Scott Farrar	08450 511800	07595 895376
Contracts Engineer	Abdel Bihi	08450 511800	07711 596353
SHEQ Manager	Gary Levers	08450 511800	07761 767155

PILING FOREMAN

Role is to control piling operations. Responsible for implementing all piling operations onsite safely and in accordance with GPL procedures. Responsible also for liaising with Mulbury staff.

PILING RIG DRIVER OPERATOR

Role is to operate or drive piling rigs. Responsible for safe operation of piling rigs and for ensuring that rig is in safe repair prior to use. Responsible for operating and maintaining rigs in accordance with manufacturers manual and GPL procedures. Rig driver operator is responsible for maintaining the piling rig to ensure that it can be operated safely.

PILING BANKSMAN/ RIG ATTENDANT

Role is to work outside rigs assisting and directing. Responsible for directing movement of plant and to ensure that no-one is put at risk due to rigs movement. Responsible for slinging cages and other equipment using correct accessories and procedures. Also ensures that a 2m exclusion zone is maintained around the auger and 5m around the piling rig. The banksman must also ensure the safety of the operation of the attendant excavator and must maintain an adequate exclusion zone.

PILING CONCRETE OPERATIVE

Role is to bank or direct concrete delivery vehicles to the correct position prior to discharge and operates the holding drum and concrete pump. Responsible for cleaning and maintaining holding drum and concrete pump. Will also be required to carry out any other duties assigned as required by Piling Foreman.

PERSONNEL SAFETY QUALIFICATIONS

The selection of operatives for this site will be made immediately prior to commencement. Generally, three persons per rig will be allocated roles and responsibilities as below.

Jordan Brodie – Piling Foreman/ Rig Driver Operator		
SSSTS	Site Supervisor Safety Training Scheme	30/06/2026
CSCS	Piling Operative L2 Diploma	31/07/2023
CPCS	A40 Slinger signaller	28/02/2026
CPCS	A44 Trailer Mounted Concrete pump	28/02/2026
CPCS	A48 Piling Rig - Bored above 20t	28/02/2026
CPCS	A74 Piling Rig Attendant	28/02/2026
IPAF	Mobile Boom (3b)	31/08/2026
Manual Handling		09/10/2023
Abrasive Wheels		09/10/2023
Harness Training		09/10/2023
Scott Stewart - Piling Banksman/ Rig Attendant		
CPCS	A44 Trailer Mounted Concrete pump	31/05/2024
CPCS	A40 Slinger signaller	31/05/2024
IPAF	Mobile Boom (3b)	31/10/2024
Neil Brodie – Concrete Operative		
CSCS		30/11/2021
CPCS	A44 Trailer Mounted Concrete pump	11/08/2023
CPCS	Mobile Boom (3b)	20/08/2026

METHOD STATEMENT – SITE MOBILISATION	
1	Prior to the establishment of the piling rig, equipment and materials, the position of dismounting and access for deliveries will be discussed with and confirmed to Mulbury.
2	**Prior to any operations onsite the foreman must identify himself and report to Mulbury to receive instructions regarding site inductions. At this time arrangements for off-loading can be re-confirmed and the route and area for low loader and other delivery wagons for offloading can be inspected.**
3	All vehicles will be supervised by a banksman and enter site as per the designated route agreed. The Foreman shall: • Make sure any building, services or footpath is protected before any unloading takes place. Protection is to be managed and provided by Mulbury. • Assess the area designated for unloading and 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 and only after a risk assessment has been completed with the Contracts Manager/ Engineer. • Agree a sequence of unloading with the delivery driver. All instructions regarding unloading of equipment and materials to come from nominated person.
4	Where possible equipment and materials will be pre-slung to facilitate offloading. Edge protection shall be fitted to trailer to prevent injury falls from height. Access to trailers shall be from secured ladder or podium steps.
5	The crew shall maintain good housekeeping at all times to reduce slip/ trip hazards.
6	Waste materials will be kept to a minimum and disposed of in accordance with the sites waste management plan.
7	Fuels will be stored in double-skin fuel bowsers or jerry cans at a designated point agreed by Mulbury.
8	**UNLOADING OF THE PILING RIG**
8.1	Prior to the establishment of the piling rig, the position of dismounting and access for low loader will be discussed and confirmed to Mulbury. Low loader will be directed to position of dismounting which should be firm and level and with sufficient working area.
8.2	Delivery of the piling rig shall be via the approved route as directed by the relevant authorities to the site location. Should the low loader delivering the piling rig be unable to access directly onto site to deliver the piling rig, Mulbury will be required to provide protection measures to prevent damage to existing carriageway/ pavement and services in close proximity.
8.3	Low loader shall be directed to place for unloading, once parked rig chains will be released carefully.
8.4	Wooden “steps” chocks or other protection as required will be placed near low loader where tracks will land.
8.5	Consideration must be given to the bearing pressure exerted by the rig and the chocks which should not be positioned near services. Protection should be considered on finished road surfaces.
8.6	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 fitted, the rig shall be offloaded using the radio controls. Make sure rig is configured as per the operator’s manual so that no parts are “grounded” whilst tracking off the trailer.
8.7	Rig will be driven off the low loader carefully and tracked to a safe area whilst low loader is removed.
8.8	After dismounting from low loader, the rig should be tracked to a point of safety prior to reassembling the low loader.
9	**UNLOADING EQUIPMENT & MATERIALS USING HIAB OR EXCAVATOR**
9.1	The Piling Foreman will assess the required position of stored plant and materials along with the available space and safe access for the rig and delivery wagon and will select the individual area for unloading.
9.2	The delivery wagon will be directed to and will move to the point of unloading as directed by Piling Foreman which should be firm and level with sufficient working area for unloading and with sufficient space for storage. This movement should be in accordance with the directions and requirements of any traffic plan introduced by Mulbury.
9.3	The excavator if used will be brought into position near the delivery wagon normally perpendicular to the length of the wagon bed alongside and close to the midpoint of the wagon bed.

9.4	Any chains restricting the items to be lifted should be released with caution as these may be under tension due to movements of the load during transport and may cause items to be lifted to move.
9.5	The Banksman in collaboration with the wagon driver will attach the items to be lifted to the lifting equipment.
9.6	Wherever possible items to be lifted shall be delivered in such a way that they are pre-slung and accessible from ground level. Wagons should arrive on site with edge protection installed. Should access to lifting equipment be required at height – podium steps will be used as necessary – edge restraint rails/ straps may need to be utilised to mitigate the potential for fall from height.
9.7	Lifting equipment should be attached to the items to be lifted equidistant from the centre of the items to be lifted and with sufficient spacing and safety hook attached safely around the lifting equipment.
9.8	With the Banksman and wagon driver at safe distance the load should be raised to a maximum height of 500mm from original position. The load should then be examined for any further movement of chains and for evenness of lifting. If satisfactory lifting can continue if not or if there is doubt, load should be lowered and lifting equipment moved to a more satisfactory position.
9.9	At no point should loads be lifted above persons and where necessary ropes should be used to anchor load to prevent spinning in windy conditions.
9.10	Load to be lifted should be lowered and positioned at the earliest opportunity to a height as close to the piling platform as practical whilst allowing movement of excavator/ Hiab either by slewing or tracking to place the load on the ground, where indicated.
9.11	Once in position, detach lifting equipment from load safely. No work at height is required to remove lifting equipment.
9.12	Excess material and equipment shall be removed from site after completing operation and before removal of piling rig where possible.

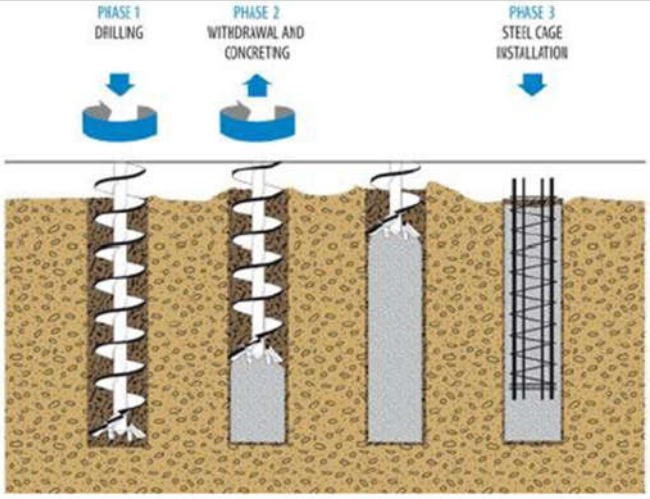
METHOD STATEMENT – ERECTING PILING RIG	
1	Prior to the erecting of the piling rig the position of erecting will be discussed with and confirmed to Mulbury. For this site, the piling area will be the location for rig erection.
2	Piling rig will be directed to position of erecting which should be firm and level and with sufficient working area. At all times the rig must be directed by the Banksman.
3	Pre-erection checks and erection will be in accordance with the manufacturer's instructions. During erection operations no unauthorized personnel should approach the rig and it is the rig operator's responsibility to cease operations should it become evident that unauthorized persons are encroaching too close.
4	After initial erection further checks of the operations of the piling rig should be carried out including functions of the brakes and lifting equipment prior to tracking to the working area.
5	**WORKING AT HEIGHT**
5.1	Prior to any works commencement, all persons directly involved within the works project shall be made aware of the work/task to be carried out – initially connecting auger string to rotary head on the piling machine. The head of the auger string will be at approximately 6m above existing ground level.
5.2	Access/egress to the site is via the site haul road onto the engineered piling platform which is considered as an acceptable platform for the MEWP to work from.
5.3	Access to the required work area shall be done so by using an appropriate MEWP operated by a qualified operator. The MEWP operator shall satisfy himself that the machinery is in a usable state, has the relevant inspection certificates and familiarise themselves with the controls prior to operating the machine.
5.4	MEWPS shall normally be hired from approved supplier and type selected by contracts manager/ engineer after site visit.
5.5	MEWPS shall be inspected in accordance with manual provided. No MANUAL OR LOLER cert no use.
5.6	Whilst works are underway, there shall be a second man at ground level that is also trained and familiar in the use of MEWP's to affect emergency recovery procedures should there be a problem encountered at any stage of the works.
5.7	Emergency Rescue Plan- alarm to be raised as directed within the induction procedures and then lowering of the MEWP by use of the controls at ground level to affect the descent of the MEWP to recover persons back to safety as detailed in MEWP manual.
5.8	Once the MEWP is positioned and ready for work, the piling operative shall access the MEWP and shall ensure that suitable adjustable harness and lanyard are in place.
5.9	The MEWP shall be positioned by the operator at a distance sufficient for the machinery to operate within its safe working limits. Once positioned, the area shall be cordoned off to prevent unauthorised persons from

	accessing the works area. Normally it shall be sufficient that the whole piling area is segregated from other workers and banksman at ground level ensures no un-authorised personnel enter piling area.
5.10	Once secured in the basket of the MEWP, the operator shall then ascend to the required height to safely carry out the connection of auger string. This is to be done using hammer and pins.
5.11	All necessary PPE associated with the use hammer and erecting rig shall be used as defined within the risk assessment detail within the safety plan.
6	**ASSEMBLING THE AUGERS**
6.1	Auger section to be placed in front of the piling rig using excavator ensuring the female couplings are facing the front of the piling rig.
6.2	Banksman to take spare line hook from the rig and place on the ground next to the female auger couplings.
6.3	Lifting equipment connected to 1no section of auger minimum of 500mm from top of section and spare line hook is then connected to the lifting equipment.
6.4	Once secure Banksman to signal to Rig Operator to start to lift section off the ground to approximately 1.2m. Banksman to check female coupling for any debris. Debris removed if required using suitable tools.
6.5	Raise the rotary table to a height sufficient to fit one auger section.
6.6	Rig gates to be opened manually/ hydraulically depending on rig type.
6.7	Banksman to stand in a safe area to the side of the piling rig and signal to the Rig Operator to lift auger section into place. Once auger section is vertical gates to be closed around the auger section. Spare line to be lowered enough to enable hook to be removed/ auger rotated.
6.8	MEWP to be moved into position next to the piling rig. IPAF operator to raise MEWP to the auger section/ motors. Ensuring the MEWP basket is a minimum of 1metre from the auger.
6.9	Banksman/ MEWP operator to signal Rig Operator to lower/ spin auger/ motor as required to enable male and female couplings to be connected and lowered into position.
6.10	Once in position MEWP operator moves the MEWP basket next to the auger section and inserts 2no pins using a club hammer to secure the auger section.
6.11	**Note: there is no requirement for the auger to be touched, should this be necessary then the stem should be held. When inserting the pins ensure they are located in the auger socket, once done ensure hands are out of the way. When re-driving the pins ensure hands are out of the way.**
6.12	Disconnect the spare line from the lifting equipment and lifting equipment from auger section. MEWP moved away from piling rig and lowered to ground.
6.14	To fit the remaining elements of the auger string and the cutting head, repeat the above steps as required.

METHOD STATEMENT – MOVEMENT OF PILING RIG	
1	Piling mat access roads and ramps will be designed and maintained by Mulbury in accordance with BRE “Working Platforms for Tracked Plant” or similar. Boundaries of piling platform will be identified as suggested therein.
2	Should the extent of the piling area not be clear Green Piling will place some boundary markers to identify piling area with signs restricting access.
3	Prior to any individual movements of the piling rig it is the responsibility of the piling foreman and the banksman to ensure that no-one is in the exclusion zone 5m from rig.
4	In all cases visual checks of vicinity on all four sides of piling rig will be made. Where there has been a significant pause or prior to movement between piles or areas it will be necessary, when safe to do so, for Banksman to perform a 360° walk about rig prior to moving to ensure area is clear.
5	The direction and route of movement will be communicated to the Banksman by the piling Foreman and any obstructions avoided if possible and if not measures discussed on how to avoid collisions.
6	Banksman to wear Hi-Viz clothing and maintain visual contact with driver when signalling.

METHOD STATEMENT - REFUELLING	
1	Green Piling will place bowser in designated re-fuelling area – but be within reasonable distance of rig and plant working location. As a minimum requirement – spill kits, plant nappies etc. are required to be present on site.
2	Normal operations involve fuel delivered initially with piling equipment in double skinned locked static bowsers. Re-fuelling of bowser will be from vehicle delivery as required.
3	The rig should be established at the bowser position and drip tray placed such that spillages are contained.
4	A fuel spill kit shall be kept with piling rig and bowser at all times and operatives should be familiar with its stored position and its use.
5	When re-fuelling operatives to wear appropriate PPE including gloves and eye protection.
6	All spillages shall be reported to Mulbury.

METHOD STATEMENT – VIBRATION MONITORING (IF APPLICABLE)	
1	Vibrock 901 seismograph or similar will be set up to measure ground conditions in suitable instructed positions
2	Acceptable limits of vibration are to be agreed prior to commencing.
3	Piling will commence remote from the measuring device working towards it. Readings will be taken at different distances to interpret whether limits may be exceeded.
4	Should alarm be activated at any point drilling will stop pending agreement of way forward.
5	It must be noted that vibration from passing traffic may activate vibration alarm after which a note will be made and equipment reset.

CFA PILE CONSTRUCTION METHOD	
PHASE 1	Continuous Flight Auger (CFA) piles are formed by screwing a continuously flighted auger into the ground to the required depth.
PHASE 2	As the auger is withdrawn from the ground, concrete is then pumped under pressure down the hollow stem of the auger to the bottom of the bore. The auger is progressively withdrawn bringing soils with it to the surface.
PHASE 3	When the auger and soils are finally removed, a reinforcement cage is placed in the fluid concrete pile.
	

METHOD STATEMENT – CFA PILING	
1	Prior to the establishment of the piling rig ensure that there are no overhead obstructions, that the working surface is suitable for the piling rig and delivery wagons to operate safely, and that there are no underground services within the piling area.
2	Before commencing piling operations, it should be ensured that: 1. A pile layout drawing relating to that particular base is available for study. 2. All relevant permits to work are in place. 3. The client has been made aware of our intention to commence piling.
3	Where applicable, prior to the installation of contract piles a limited number of trial bores are carried out across the site to endeavour to visually compare the anticipated soils strata horizons with the borehole information and hence confirm the calculated design length.
4	Where underground or overhead services are present these will be located, exposed and protected by Mulbury.
5	The Foreman shall instruct the Rig Operator the required pile sizes, number and depths as per the piling drawings. The Rig Operator shall maintain a record of all piles constructed, noting their number, diameter and depth. This record shall the be transferred by the Foreman to the Piling Record Sheet. This sheet shall be submitted to Mulbury for signature as a record of work carried out.
6	No personnel should be within the working radius of the rig without a safety helmet and ear defenders. Within 10m of the pump the average noise level exceeds 80dB. Exclusion zone to be created and maintained by Mulbury for second action level at 5m from concrete pump.
7	**DAILY COMMENCEMENT**
7.1	Prior to the commencement of piling works each day, the concrete pipeline will be adequately lubricated with primer mix. The primer will be mixed with water in a tub to a fairly thick consistency. The lubricating mix will be poured directly into the pipeline, and the concrete will follow immediately. The concrete will be pumped slowly through the lines until it flows freely. All concrete pipes will be connected with couplings secured with safety clips.

7.2	The Foreman/ Rig Operator checks drawing and pile schedule and starts data input into pile monitoring computer.
8	**SET UP AND BORING**
8.1	The rig should be established at the required piling position with the auger gates closed by the RIG Operator, guided by the Banksman who needs to check from the front and side of the rig. Reference pins are marked in two directions at right angles.
8.2	Throughout the piling process, the rig shall be operated within its limits defined within the operator's manual. Over-riding of safety devices is not permitted (for example when using the parallelogram.
8.3	Mast verticality shall be checked in both directions using a suitable spirit level. The mast foot shall be then lowered to the ground and any further minor adjustments made as necessary. The setting out pin shall then be removed, the auger bung inserted to prevent ingress of soil and/ or water ant the auger lowered to the ground. The rig instrumentation shall then be reset in accordance with operating instructions. When inserting the bung, carry out final checks to make sure no spoil is above head height on the auger. Before inserting the bung the crew should attempt to clear it by shaking off (sharp rotation of the auger in both directions).
8.4	When the rig is correctly set up the auger shall be rotated into the ground until the required depth is reached. The auger gates should be kept closed at all times, only being opened if the rotary head is required to travel below the height of the gates. The position of the auger shall be checked against the refence pins and any deviation caused by underground obstructions shall be reported to Mulbury. At all times when the piling rig is active a 2m exclusion zone shall be maintained around the auger by the Banksman.
8.5	During boring, the gates are kept in the closed position until: 1. Construction of a deep pile necessitates the need to open the gates to allow the rig to achieve the required depth. 2. The attendant excavator is required to remove spoil for the pile head.
8.6	Banksman is to be on duty in front of the rig at all times that it is working to ensure that all is in order and other personnel are kept clear.
8.7	The rate of auger penetration shall be monitored to ensure that there is no lateral ingress of soil and excessive flighting of material. If this is suspected boring must cease immediately and instructions sought. On reaching required depth the Rig Operator shall signal to the Pump Operator to commence pumping. The Foreman shall ensure that concrete meets the specified requirements shown on the Project Quality Plan/ instruction Sheet.
8.8	If obstructions are encountered, piling will be suspended and the procedure for obstructions followed.
8.9	If during boring groundwater is struck which is under pressure sufficient to cause the groundwater to raise up the bore and emanate at ground level, boring shall immediately cease and Mulbury shall be informed.
9	**CONCRETING**
9.1	The concrete is delivered to site in ready mixed trucks from approved supplier. The slump is checked for each load delivered to ensure the slump is not outside the limits of 130mm to 230mm. If the site layout and economics allow concrete is then placed in a storage drum and constantly rotated.
9.2	At the target depth, the auger is rotated to allow spoil to raise and the auger is lifted a maximum of 150mm to allow concrete to exit (depending on ground conditions and auger type). The auger shall not be raised until either the specified precharged volume of concrete has been pumped through the auger or a positive pressure registers on the instrumentation
9.3	The concrete pump is operated to supply concrete through the delivery hoses and down the auger central stem to form the pile as the auger is extracted. The speed of extraction shall be controlled with reference to the oversupply of concrete as registered on the piling rig instrumentation. Should exceptionally high concrete pressure be generated, causing a risk of blockage or auger jamming, the Rig Operator shall bring this to the attention of the Foreman who in turn shall inform the contract manager/ engineer when reduced oversupply may be used.
9.4	During withdrawal of the augers the Rig Operator operates the mechanical auger cleaner, and the Banksman shall direct the attendant excavator to clear all spoil arising. Control the rate of extraction to allow the auger cleaner sufficient time to clear as much a s possible. At no time should loose material remain on the auger flight. Where access is possible, use excavator (working within its reach) to clear spoil from a stationary auger. The piling team are to ensure that the working area is kept clear of unauthorised personnel.
9.5	Piling Rig Attendant monitors front of rig during extraction to make sure hoses, auger cleaner etc, do not snag which could result in damage. When the base of the auger is at ground level the rig operator shall signal the Pump Operator to cease pumping.
9.6	If blockage or disruption to concrete supply occurs during concreting the pile will be re-bored and re-concreted immediately.

9.7	The piling rig will be reversed off the pile position. The head shall be cleared of spoil by the excavator and located by the Banksman who shall scoop out any contaminated concrete.
9.8	The piling rig then moves to the next pile position in the agreed economical sequence. This shall be a sufficient distance, generally taken as 3 pile diameters, although this is reviewed dependent on actual conditions encountered, away from adjacent, recently formed piles, so as not to induce concrete flow form, and/ or damage to any of those piles.
9.9	When moving the piling rig, concrete hose may be lifted by the attendant excavator to avoid dragging/ snagging on the ground or other objects. During this activity the excavator must be controlled by a Banksman who will ensure that an adequate exclusion zone is maintained around the excavator and piling rig. If the Banksman has to manually assist with moving the hose, he must instruct the excavator operator to stop while he handles the hose where there is any danger to themselves if the hose moves. Under no circumstances should the Banksman or any other person attempt to move the hose if it is twisted and under pressure or under tension. In this case the excavator should be used to release any twist or tension.
10	**REINFORCEMENT INSERTION**
10.1	The attendant excavator will clear the spoil and concrete slurry from the pile position to a stockpile or dumper for disposal.
10.2	The pile head will be located by the piling crew and a small amount of concrete dug out to define the pile position and remove any spoil still left in the head of the pile.
10.3	The Foreman shall check that the pre-fabricated reinforcement cage complies with the specification and design. The reinforcement cage is then either manually lifted into position, lowered by the excavator (if less than or equal to 11m in length) or the piling rig into the wet concrete at the required level. Care shall be taken to ensure that no contamination is pushed into the concrete by the reinforcement. The reinforcement shall generally be pushed in manually but the assistance of the excavator maybe utilised for the final metre or so provided that no deformation of the reinforcement occurs. The top of the reinforcement cage will be set to piling platform level. The piling team will check the reinforcement cage on completion to ensure it is central in the pile. All reinforcement cages will be fitted with spacers (minimum 3/4 no every 5m) to ensure correct concrete cover. **There must be no working beneath raised excavator buckets.**
10.4	On completion of the pile the Foreman shall visibly inspect the work for possible defects including the level of the concrete and reinforcement. Where practical the reinforcement shall be shaken to assist consolidation of the concrete at cut off level and to ensure the top of the reinforcement is central to the pile bore. If any reinforcement cage does not achieve the required depth or cover it shall be immediately removed from the wet concrete and a replacement reinforcement cage installed with the pile re-bored if necessary.
10.5	**If piles are subject to higher tension loads and require central tension reinforcement the following must be followed**
10.6	Central bars up to 14m in length may be inserted as a single length, anything over this will need to be spliced. Where possible central tension bars should be pre-built before installation and lifted and lowered with the piling rig to the required level.
10.7	If unable to pre-build central tension bar the first section of bar is to be lifted and lowered into place with the piling rig. Coupler must be attached to this bar prior to lifting in.
10.8	Bar to be 'trapped' over the centre of the pile and second section of bar to be lifted and coupled to the first section. Bar is then lowered to the required level.
11	**SEQUENCING**
11.1	Works are to be sequenced so that traffic does not cross the concrete hose. A crossover point can be prepared (if required) by either burying the hose or by the use of half sleepers on each side of the hose at the dedicated crossing point, thus minimising damage to concrete delivery hose.
11.2	CFA piles are by necessity concreted up to piling platform level. Due to the possibility of frost damage and /or laitance at the pile head the piling platform should be prepared to a level that allows a minimum of 450mm of the pile to be trimmed off the pile to ensure concrete at the specified cut-off level. Trimming of piles to cut-off level should be left a minimum 7days from casting; this may be reduced subject to cube results. It should be noted that cutting down of the piles is the responsibility of Mulbury.

METHOD STATEMENT – CONSTRUCTION MONITORING	
1	The depth of bore, rate of drilling and auger extraction during concreting are measured by an electro-mechanical depth meter and digitally displayed in the cab of the piling rig.
2	During the formation of the pile shaft the concrete pressure is monitored by an electronic pressure metre mounted on the U bend attached to the rotary swivel above the drilling head displayed on ana analogue in the cab.

3	Concrete flow through the 100mm diameter delivery pipe is measured by an electronic flow meter/ pulse counter. The flow of concrete is monitored in the cab of the piling rig by an analogue flow-rate indicator which gives a digital display of the cumulative volume of concrete delivered to the pile.
4	The monitored information above is stored on an on-bored data logger for subsequent analysis and record. Further details such as pile numbers and contract information can be recorded on a key pad by the driver. (there is no print facility with the on-board equipment).
5	In the event of a partial or permanent damage to the primary monitoring system a manual monitoring system will be employed. This procedure will be adopted to ensure that the correct depth is bored and that sufficient concrete is supplied to each pile.

METHOD STATEMENT – CLEANING OUT EQUIPMENT & CLEARING BLOCKAGES	
1	With wet concrete mechanical equipment, it is important that equipment cleaning is controlled and supervised correctly – Following aspects of equipment cleaning are considered
2	**CONCRETE DELIVERY VEHICLES**
2.1	The concrete delivery will wash chute and any other concrete using onboard water into designated washout area onsite.
3	**CONCRETE GOUND HOSE**
3.1	The concrete pump and delivery lines may be dismantled and cleared at any of the following occasions: - • At the end of each day's work. • In the event of bursts or serious blockages during the pumping procedure. • In the event of a serious breakdown to plant. • Due to offsite concrete supplies failing to arrive at the place of work.
3.2	Prior to the disconnecting/ dismantling of concrete hose extreme care must be taken to ensure that concrete pressure/ air pressure has been released from the lines. This should be completed by either back pumping with concrete pump or releasing air pressure at the compressor.
3.3	In all cases the following safety precautions shall be followed. • In the event of discontinuation in the pumping of concrete, pumping may re-commence provided the concrete has not stated its initial set. • If the concrete has commenced its initial set, the pile shall be re-bored and concreted to its full depth.
3.4	All operatives involved in these operations must wear appropriate PPE including safety boots, rubber gloves, hard hat and safety glasses or visors.
3.5	The Pump Operator shall be responsible for planning and supervising these operations assisted by other member of piling crew.
3.6	Once the hopper and pistons of the concrete pump have been cleared of all concrete that has accumulated during shift and when the agitator has been thoroughly cleaned and rinsed the ground line needs to be cleaned out.
3.7	The pressure will already have been released from the line when it is disconnected from concrete pump.
3.8	A saturated sponge ball is placed in the open end of the concrete line and the blow out cannon attached to the compressor is then connected.
3.9	The compressor is started and gradually the valve on the cannon is released pushing the sponge ball through the line removing surplus concrete.
3.10	The tip of the auger or far end of the hose is encapsulated in a blowout chamber and restrained as required to prevent grout and ball "firing" across site. When cleaning out hose which is not restrained at the far end the free end will tend to "whip". This must be restrained which is best achieved by placing excavator bucket on the end coupler and controlling air pressure carefully.
3.11	The air pressure is carefully controlled such that surplus concrete and sponge ball exits safely.
3.12	The air compressor is turned off: the safety valve on the cannon is opened to release any pressure and is then removed.
3.13	Several buckets of water are poured into open end of line.
3.14	Operations 3.8 to 3.13 are then repeated until washing out hose is complete.
4	**CONCRETE AGITATOR**
4.1	All operatives involved in these operations must wear appropriate PPE including safety boots, rubber gloves, hard hat and safety glasses or visors.
4.2	The Pump Operator shall be responsible for planning and supervising these operations assisted by other member of piling crew.
4.3	All concrete on all parts of agitator shall be cleaned using jet washer at end of each shift.
5	**CONCRETE PUMP**

5.1	All operatives involved in these operations must wear appropriate PPE including safety boots, rubber gloves, hard hat and safety glasses or visors.
5.2	The Pump Operator shall be responsible for planning and supervising these operations assisted by other member of piling crew.
5.3	Pump shall be reversed pumped to release pressure prior to disconnecting any hoses.
5.4	Engine to be switched off prior to cleaning
5.5	All part to be cleaned using pressure-jet wash.
5.6	Ensure that pressure relief valve and adapters are washed and are in good condition.
6	**PILING RIG**
6.1	All operatives involved in these operations must wear appropriate PPE including safety boots, rubber gloves, hard hat and safety glasses or visors
6.2	The Pump Operator shall be responsible for planning and supervising these operations assisted by other member of piling crew.
6.3	The piling rig should be positioned in a suitable location facing away from the site boundary' walkways, site entrance, cabins, site huts and other plant. Where possible a suitable designated blow-out area should be agreed on site.
6.4	If ancillary concrete hoses have not been cleaned with ground line the steps 3.8 to 3.13 in concrete ground hose section shall be repeated. With the exception that compressor shall be situated and cleaning carried out from hose coupling closest to back of piling rig.
6.5	Piling rig itself will be cleaned using pressure jet wash and access to difficult upper areas shall be achieved using MEWP as required.
7	**UNBLOCKING HOSE**
7.1	Concrete blockage occurs mainly for the following reasons.

Reason for Blockage	Risk Reduction
Segregation of leading edge of concrete as it is pushed through pipe alone with primer.	Use appropriate primer. Reduce pipeline and delivery hose to be considered.
Incorrect concrete mix design or consistency.	Only concrete that is of "pump mix design" and with appropriate quality used.
Stiffening of concrete in the hose from standing to long resulting from: • Water bleeding from concrete. • Incorrect dosage of plasticizer causing flash set.	Where possible if standing waiting for concrete circulate or move concrete in hose regularly. Time manage deliveries.
Flexible hose kinked restricting flow.	Keep hose un-kinked.
Foreign objects in concrete.	Monitor quality of concrete and reject when appropriate.
Inefficient hydraulic pump pressure	Monitor pump pressure and reduce pumped length.

7.2	Where possible the Pump Operator will stop the pump action or reverse the pump direction immediately in reaction to a blockage. All personnel should retreat a safe distance from line and pump restarted to potentially free blockage.
7.3	If the above procedure does not free blockage Foreman will ensure that line is depressurized and assess where likely blockage is and investigate prior to removing blockage.
7.4	When likely position is identified concrete at this position must be removed.
7.5	All operatives involved in these operations must wear appropriate PPE including safety boots, rubber gloves, hard hat and safety glasses or visors
7.6	The Foreman shall be responsible for planning and supervising these operations assisted by other member of piling crew.
7.7	Ensure that air/ concrete pressure has been released prior to approaching the location of the suspected blockage.
7.8	Clips on joints of concrete hose adjacent to suspected blockage shall be removed with caution ensuring that "whip" controllers are in place.
7.9	Hose section shall be raised or lifted using attendant excavator to use gravity to remove blocked concrete.
7.10	With flexible hoses it may be necessary to squash hose with excavator bucket to loosen concrete prior to using gravity to release blockage.
7.11	As a last resort water using pressure-washer will be fired down individual hoses to loosen blockages.
7.12	At no time will compressed air and sponge ball be used where there is known blockages.

METHOD STATEMENT – STEEL FIXING LOOSE REINFORCEMENT	
1	**The following applies to any Green Piling personnel and sub-contractors undertaking steel fixing on behalf of Green Piling.**
2	All reinforcement to be supplied by a CARES approved supplier, on the approved suppliers list.
3	Steel reinforcement will be delivered to site as loose bars, pre-slung in 1t bundles for unloading using the attendant excavator.
4	Mulbury shall set aside a suitable area for the assembly of reinforcement cage, together with an adjacent area for storage of reinforcement bars, helical and completed cages.
5	The Steel Fixer shall be given details of the reinforcement cages required.
6	The loose reinforcement bars and helical will be assembled into cages using purpose made steel fixing trestles onto which hand selected loose reinforcement bars for the required cages are loaded to give stability as required.
7	Once bars have been placed upon the trestles, pre-pitched helical shall be spun/ threaded on to the bars as required and tied by hand using steel fixer nips and annealed tying wire.
8	Once the reinforcement cage has been fixed, de-bonding foam shall be applied as required and secured using cable ties.
9	As each cage is completed it is removed from the steel fixer stands, removal will be either by controlled rolling, manual handling by two persons or by attendant excavator for heavier cages.
10	After fabrication, the reinforcement cages are to be stored on timbers or clean hardcore to avoid contamination by soil and stored no more than two cages high.
11	Attendant excavator to be utilised to move cages from steel storage area to piling rig. Bundles of cages must be transported around horizontally on twin leg accessories. Do not transport vertically as this can lead to the excavator becoming unstable on uneven ground.

METHOD STATEMENT – PILE TESTING	
1	**SAMPLING & TESTING CONCRETE**
1.1.	**Checking the Load**
1.1.1	The Foreman will be informed of the concrete mix in the Site Instructions handed over at site start-up.
1.1.2	This information will be briefed to the Pump Operator.
1.1.3	When a mixer truck arrives on site, the Pump Operator will check the delivery ticket prior to discharge to ensure the mix is as specified.
1.1.4	Random truck may have the slump checked; slump is visually assessed for each and every delivery.
1.2	**Sampling**
1.2.1	Concrete from the beginning and end of the load should not be used; only the middle half is to be sampled. Take scoops at regular intervals into a clean bucket.
1.2.3	One set of four test cubes are taken daily, or for every 50m³ of concrete placed. The cubes are tested independently, 1 cube is tested at 7days, 2 cubes at 28days and 1 cube kept spare (to be tested at 56days if 28day results are low). Curing will be in tanks initially on site with transfer to the laboratory as soon as practical. Results will be submitted to Mulbury.
1.3	**Cube Making**
1.3.1	Check the cube moulds for damage or out of square. Ensure they are oiled to prevent adhesion.
1.3.2	Fill the 100mm mould in two equal layers, tamping each 25 times, starting in a corner and working your way into the centre. **Note:** A 150mm mould needs 35 tamps for each of its three layers; these are not used by Green Piling.
1.3.3	Remove surplus concrete with float and smooth off.
1.3.4	Seal the top of the mould with a wet cloth and/ or plastic to prevent drying out.
1.3.5	Ensure the cubes are protected from frost damage overnight in the winter as this will have implications to the strength. Frost damaged cubes should be discarded.
1.4	**Storage of Cubes**
1.4.1	Strip the mould carefully, tapping gently to break the bond. Take care with blended concrete as it may still be weak the following day.
1.4.2	Mark the cube with Contract no, Pile no and date cast, recording this also on the dispatch note. **Generally:** 1 cube is tested at 7days, 2 cubes at 28days and 1 cube kept spare (to be tested at 56days if 28day results are low).
1.4.3	Place the cubes in the tank where they must be kept wet and warm, between 18°C & 22°C as standards dictate.

1.4.4	Mulbury will need to supply 24hr electric power at all times, especially during cold moth, for our concrete cubes to cure correctly. **NOTE: Green Piling will not guarantee cube results if there is no 24hr power supply and curing conditions are unsuitable.**
1.4.5	Cubes shall be dispatched for testing regularly and not allowed to accumulate on site.
2	**INTEGRITY TESTING**
2.1	It is normal practice to carry out a test on the integrity of the piles after they have been trimmed to cut-off level. To enable this test to be carried out, Mulbury needs to note: • The pile needs to be trimmed down to cut-off level. • A safe access needs to be provided for the test technician to gain access to the head of each pile. • The pile cap/ ground beam excavations must be clear of any standing water. • The pile cap or ground beam reinforcement must **NOT** BE IN PLACE. • Although a thin layer of blinding can be in place around the pile, it must neither cover the pile nor be greater than 75mm thick
2.2	When booking the integrity testing to the point when piles will be prepared for testing, we must ask that you give Green Piling three working days' notice (in writing via email) for booking the integrity testing engineer.
2.3	Relevant Method Statements and Risk Assessments shall be issued prior to the first visit; it is the responsibility of Mulbury to ensure that technician is inducted prior to allowing works to commence.
2.4	In order to obtain the very best data possible when testing a pile, it is essential that the pile head is prepared properly prior to testing. Without good data any interpretation carried out will be meaningless. It is essential that the measurement transducers are mounted in the correct position and on sound concrete. The essentials of pile head preparation for integrity testing are given as following: a) Piles should if possible be tested at the cut-off level and trimmed to sound concrete. Any weak, broken concrete that sounds hollow should be removed and the pile top left roughly horizontal over the complete cross section. b) Reinforcing bars should be bent slightly way if practicable and the helical removed to allow a good swing of the test hammer. Reinforcement bar to be cut to final design. c) Two areas should be prepared for the transducers, one for the hammer in the centre of the pile and the other for the geophone close to the pile perimeter. The areas should be approximately 10mm in diameter and prepared as flat and level as possible.
2.5	Suitable access to test piles for the test technician and equipment shall be maintained.
2.6	Information on the pile to be tested is passed to the independent testing engineers in order to calibrate the analysing equipment.
2.7	The test is performed by delivering several blows to the pile head using the testing hand held hammer.
2.8	Preliminary report on each pile tested will be available within 48hours. Final report will be forwarded to the Mulbury within 7 days.
3	**LOAD TESTING – IF APPLICABLE**
3.1	Load testing will be carried out as requested by the Engineer.
3.2	Tension piles will be used to provide the reaction system and will be fully reinforced with Dywidag bars.
3.3	A minimum of 10 days for test pile and a minimum of 7days for tension piles must elapse between installation and commencement of testing.

METHOD STATEMENT – ENVIRONMENT	
1	Skips, water and licensed carriers will be provided by Mulbury.
2	Piling operations should take place only within specified working hours.
3	General waste shall be deposited into designated skips.
4	Hazardous waste, such as oil contaminated materials, used spill kits etc. shall be returned to the Green Piling yard and disposed of by a licensed carrier.
5	All vehicles shall not run unnecessarily. Engines shall be turned off when not in use.
6	Fuel/ oil spills shall be prevented. Drip trays and emergency spill kits shall be used to catch and clean the spills/ leaks.
7	Concrete trucks will be washed out into a plastic lined concrete washout area which will be replaced as required or emptied when 75% full by Mulbury. The location of these concrete washout areas will be advised during pre-start visit.
8	Wheel washing of vehicles will be carried out by Mulbury.

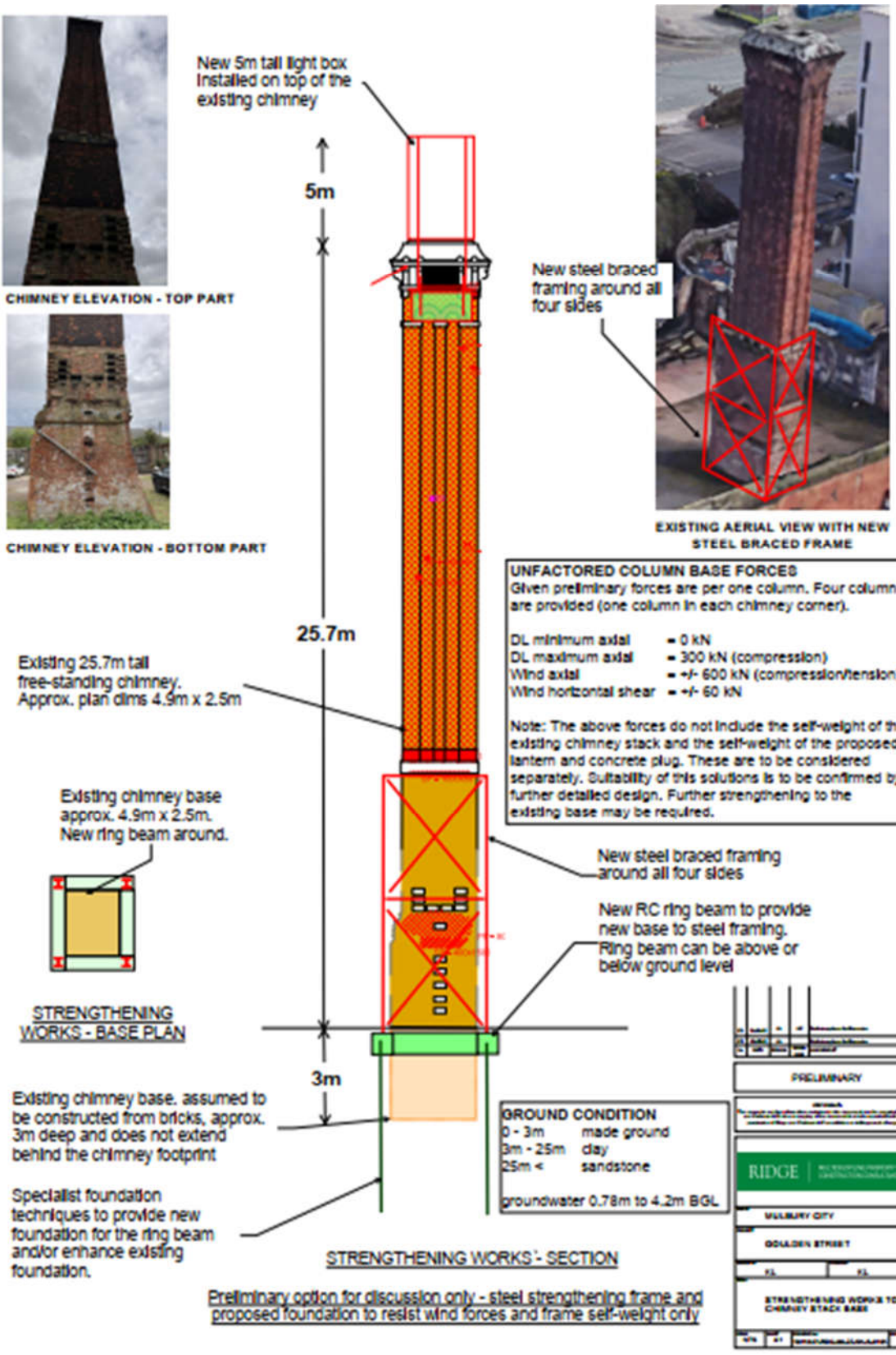
METHOD STATEMENT – SECURITY	
1	Foreman will make sure that adequate measures are taken to prevent the theft or unauthorised use of equipment/ materials. This will include locking away all tolls in the van or toolbox, removing keys from plant and equipment where fitted, when not in use and left unattended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

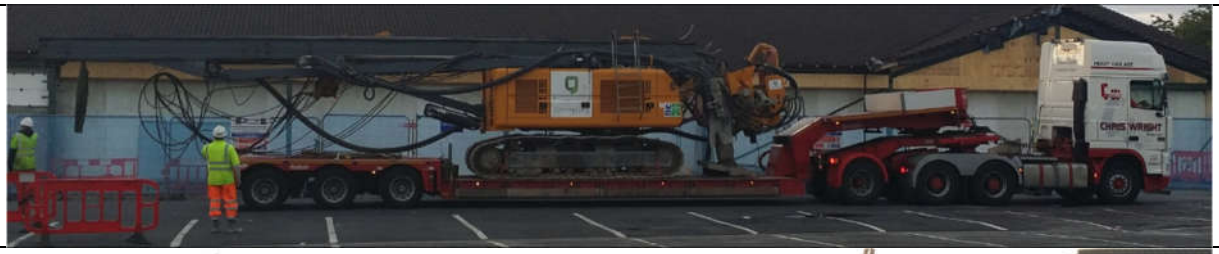
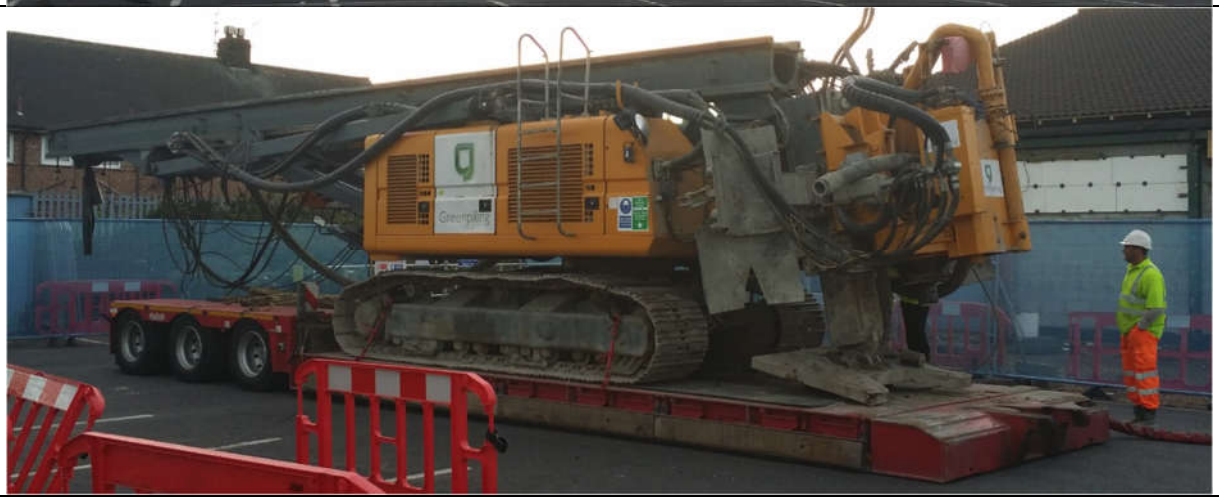
METHOD STATEMENT – LEAVING SITE	
1	The work area shall be left in a clean and tidy manner.
2	The Foreman will make sure that the rig is configured for transport in accordance with the manufacturer's instructions, making sure all securing bolts and pins are correctly fitted and the rig is safe to transport.
3	All excessive spoil must be cleaned off the rig, augers and associated plant.

METHOD STATEMENT – COMMUNICATION & LIAISON	
1	Green Piling site operations will be under full-time supervision of a competent and experienced Foreman who has completed supervisor training (NVQ3/ SSSTS).
2	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.
3	The Foreman will report directly to the Contracts Engineer/ Manager on a regular routine basis or on specific instances when necessary.
4	Site safety tours are carried out at regular intervals by our Safety Manager and Contact Management personnel.

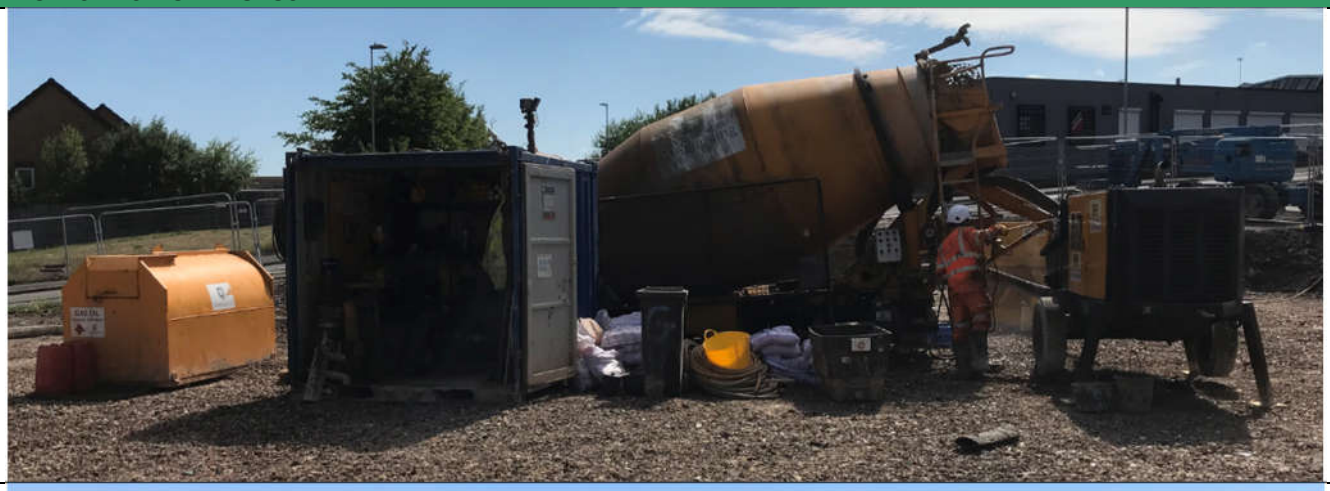
SITE PHOTOS – IF APPLICABLE
SUBJECT TO SITE VISIT

SITE LOCATION PLAN



TYPICAL TRANSPORT PHOTOS	
1	**Low Loader**
1.1	
1.2	
2	**Artic Hiab**
	
3	**40ft flat with side pins**
	

TYPICAL SITE SETUP PHOTOS





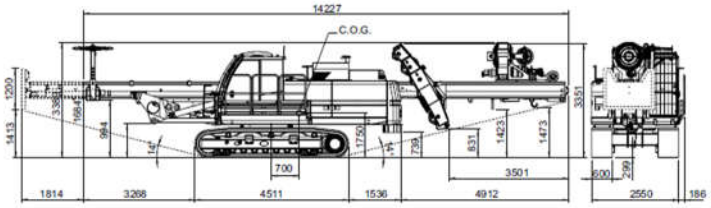


EQUIPMENT DETAILS CFA PILING RIG

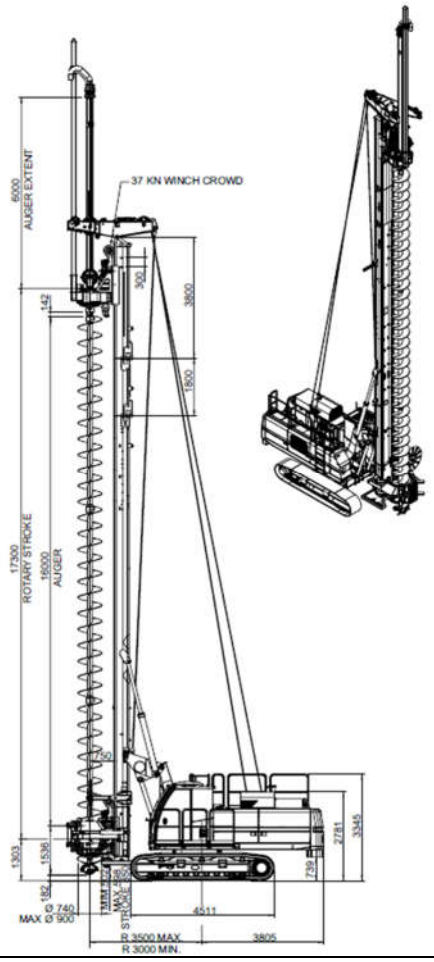
Green Piling use state of the art modern Soilmec and Casagrande drilling rigs all of which have been designed in accordance with EN 996 with appropriate EC declaration certificates. Whilst there are minor differences in dimensions and weights between individual rigs the drawing below gives general dimensions and weights.

Drilling Performance	
Max pile diameter	900mm
Max pile depth	23m
Max extraction force Nominal/ Effective	380kN
Pull-down winch Force (optional)	100kN
Rotary Table	
Nominal torque	100kNm
Weight and Dimensions	
Transport width	2550mm
Transport height	3351mm
Operating weight	49.9ton
Transport weight	36.3ton
Undercarriage	
Overall length	4511mm
Track shoe width	600mm
Overall width (extracted)	3700mm
Overall width (retracted)	2550mm

Transport Conditions



Working Conditions



1	**LOLER – (Piling Rig + Lorry Mounted Crane + Excavator)**
1.1	The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) The Regulations define lifting equipment as “work equipment used at work for lifting and lowering loads and includes attachments used for anchoring, fixing or supporting the load”. Such a definition covers a wide range of equipment which certainly includes piling equipment.
1.2	The British Standard Institute Code of Practice BS 7121 advises employers to ensure that every lifting operation is properly planned by a competent person, appropriately supervised and carried out in a safe manner.
1.3	To achieve this an Appointed Person should be nominated to prepare a Lifting Plan. For non-complex lifting operations his/ her presence at the lift site is unlikely to be necessary and it will be carried out by a competent person e.g. Slinger/ Signaller, Piling Foreman or Operator with respect to lorry mounted cranes and rigs.
1.4	Generic lifting plans for routine/ repeat activities are a practical way of ensuring uniform safe working methods these are prepared by trained contracts manager/ engineer who have visited sites and are aware of hazards.
2	**LOLER + PUWER + WAHR (MEWPS)**
2.1	In relation to use of MEWP for rig erection and repairs inspection selection of plant shall be trained contracts manager/ engineer.
2.2	Daily inspection and operation of MEWP is controlled onsite by Piling Foreman.
3	**RATED CAPACITY INDICATORS**
3.1	Due to the nature of piling operations Rated Capacity Indicators (RCI or ASLI) are not currently practicable for use with piling rigs.
3.2	Therefore, piling rigs must be clearly marked or supplied with information about how the configuration of the machine affects its safe operation.
3.3	This information can be in the form of duty charts, manuals, plates or certificates, which must be readily available to the operator and easy to understand.

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

LIFT PLAN			
Prior to commencing on site the Appointed person will have visited site and carried out a risk assessment and discussed with Mulbury lifting procedures and required piling platforms, storage areas and access. Proximity hazards such as power lines, structures, excavations or other lifting operations will be considered and are recorded here.			
Appointed Person	Scott Farrar	Lifting Supervisor	Piling Foreman

1	**BRIEF DESCRIPTION OF THE WORK**
1.1	Loading and unloading Plant and Equipment delivered to and loaded away from site. Lifts by lorry Hiab and excavator.
1.2	Lifting of equipment and materials during piling operations by excavator.
1.3	Lifting equipment and materials using the Piling Rig auxiliary winch.
1.4	Tandem lifts are not permitted under this Lifting Plan. If a tandem lift is required, it must be the subject of a separate Lifting Plan, authorised by an Appointed Person.
2	**LIFTING ACCESSORIES TO BE USED**
2.1	All lifting equipment and accessories will be inspected and tested in accordance with LOLER requirements. This includes an independent inspection every 6 months.
3	**CONSIDERATIONS**
3.1	Equipment and materials shall be loaded pre-slung from supplier with long enough equipment such that standing on lorry is not needed.
3.2	In general, most lifts will be generic, with exception of any special or complex lift situations which require additional assessment and consideration.

SCHEDULE OF 'ROUTINE' LIFTS

Description of Load	**Approx. Weight**	**Load Chrematistics**	**Method of Lifting**	**Centre of Gravity**	**Lifting Points/ Or Method of Slinging**
Reinforcement Cages	H8-0.40kg/m H16-1.58kg/m H20-2.47kg/m H25-3.85kg/m H32-6.31kg/m H40-9.86kg/m Add 10% for helical	Cylindrical	Horizontal lift: two chain lift Vertical lift: two chain lift	Central	2 leg chains/ nylon slings Vertical lift, secure at tied intersection of helical and main bar. Heavy cages require a welded lifting band.
Reinforcement (Straight bars and helical)	As above	Bundled steel bars or helical	Horizontal lift: two chain lift	Central	2 leg chains/ nylon slings Chain to pass through helical, bundling wires not to be used.
Drilling Auger	3.5t max depending on diameter	Up to 6m long spiral	Horizontal lift: two chain lift. Vertical lift: Single choke to connect auger to rig	Central	Horizontal lift: 2 leg chains Vertical lift: Single chain
Concrete Pump	2.7t	Engine/ hopper	Lifting point on top	Central	Chain/ wire sling
Agitator [Hi-ab lift only]	8-10t	Cylinder on frame	4no lifting points	Central	4 leg chain
Diesel bowser	1.2t	Cylindrical tank	Lift points on top	Central	2leg chains/ nylon slings
Compressor	3.5t	Towable Engine	Lift points on top	Central	Single chain
Tool Box Container	4.5t	3m x 3m steel box container	Lifting points	Central	4 leg chains
Concrete Hose	10kg/m Max 20m	Up to 20m long spiral	No lifting points: Choke	Uniform	2 leg chains/ nylon slings

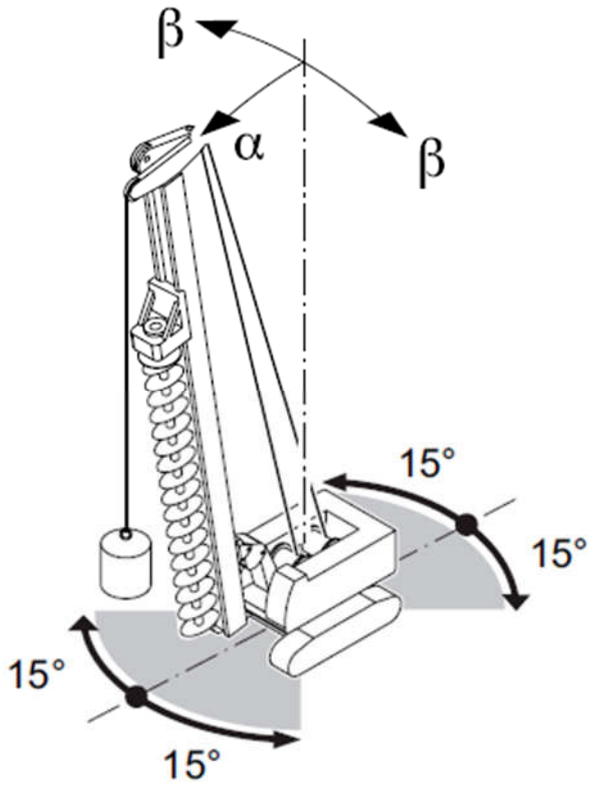
EQUIPMENT TO BE USED FOR THE LIFT - EXCAVATOR	
1	Make, Model, Attachments, Test Certificates, etc.
1.1	Excavator supplied by Mulbury who is responsible for checking all documentation before releasing it to work to Green Piling.

EQUIPMENT TO BE USED FOR THE LIFT – HI-AB	
1	Make, Model, Attachments, Test Certificates, etc.
1.1	Hi-abs supplied by Haulage Contractor (normally R R Memory Haulage) who is responsible for checking all equipment and documentation before releasing it to work to Green Piling.
2	Current lifting equipment register/ certification for all lifting equipment to be used will be available on site for inspection.
3	Lorry loader Hi-ab is fitted with sophisticated load measuring devices which restrict its lifting capacity to within its lifting duties chart. Check valves are integral which prevent failure to danger.

EQUIPMENT TO BE USED FOR THE LIFT – SOILMEC SR35 PILING RIG AUXILIARY HOIST	
1	The ancillary winch on the Piling Rig is designed to assist in “normal piling operations”, including assembling and de-rigging the auger string and lifting rebar cages into the bore.
2	Date of Last Examination.
2.1	Inspected every 6 months; Certification is retained by the Rig Operator.
3	Max safe working load.
3.1	

Working radius (mm)	Front Weight (kg)*	Max. weight that can be lifted (kg)	
		α = 4° β = 0°	α = 0° β = 3°
3000	2400	2500	4500
	3400	2000	4000
	4400	1500	3500
	5400	1000	3000
3000 ÷ 3500	2400	1500	3000
	3400	1000	2500
	4400	500	2000
	5400	NOT PERMITTED	1500

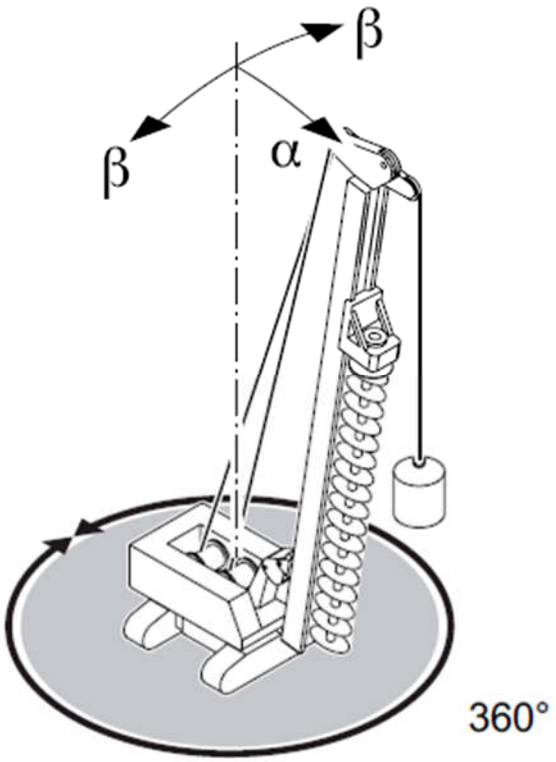
3.2



3.3

Working radius (mm)	Front Weight (kg)*	Max. weight that can be lifted (kg)	
		α = 4° β = 0°	α = 0° β = 3°
3000	2400	1500	3000
	3400	1000	2500
	4400	500	2000
	5400	NOT PERMITTED	1500
3000 ÷ 3500	2400	500	2000
	3400	NOT PERMITTED	1500
	4400	NOT PERMITTED	1000
	5400	NOT PERMITTED	500

3.4



OPERATOR COMPETENCE	
1	**Excavator Driver**
1.1	The competence of the driver supplied by Mulbury will be checked by Mulbury prior to releasing the operative to attend Green Piling.
2	**Hi-ab Operator**
2.1	The Haulage Contractor is responsible to ensure the driver supplied is competent to operate the hi-ab on the machine.
3	**Rig Driver**
3.1	The Rig Driver will be a holder of a CPCS or CSCS (Piling Operations) card.
4	**Slinger/ Signaller**
4.1	All the site crew involved in slinging and signalling operation will be holders of a CPCS slinger/ Signaller card or NVQ in piling operations.

USE OF FABRIC SLINGS

1 Fabric slings come in two types; Flat Web Sling and Round Slings. A Flat Sling is made of woven polyester and can be Simplex, Duplex or Quadplex depending on the number of layers. A Round Sling has an abrasion restraint outer cover.

2 The lifting capacity of a sling is given by a colour code and the number of black stripes woven or printed onto the sling. The number of stripes gives the SWL in tonnes, up to a maximum of 8 stripes.

2.1

Purple	1t	Red	5t
White	1.5t (single use only)	Brown	6t
Green	2t	Blue	8t
Yellow	3t	Orange	10t
Grey	4t		

3 The load you can lift with the sling depends on the method of slinging. The above SWL refers to a vertical lift with one fixed to the hook and the other fixed to a lifting eye. In other situations, the SWL is increased or decreased as below.

3.1

Vertical Lift	Choke Lift	U Basket	Basket meeting at 45°	Basket meeting at 90°
100%	80%	200%	140%	100%

4 **USE OF SLINGS**

4.1 Do not use a damaged sling for lifting.

4.2 The sling must not be used on loads with sharp edges unless the edge is protected.

4.3 Do not knot slings or use a sling with a knot.

4.4 Do not use a sling to “snatch” a load.

4.5 Worn slings not suitable for lifting can be looped onto the concrete hoses and used to drag hoses using the digger bucket to avoid damage to the hose braiding by any sharp edges on the bucket. Under no conditions are these slings to be used to lift the hose.

4.6 One-way slings must not be reused for lifting purposes although they can be used as drag slings as above.

5 **INSPECTION AND TESTING**

5.1 Polyester slings are not load tested (unlike chains) when issued but have to be manufactured to a Quality Assurance scheme. A representative sample from each batch is tested to destruction to ensure that batch is safe to use.

5.2 Because fabric slings can be easily damaged, it is important they are regularly inspected and if damaged, discarded, preferably by cutting off the lifting loops.

5.3 In carrying out the inspection, take note;

- Carry out the inspection in good light
- Inspect the length of the sling, both sides, including the inside of the eye.
- In a flat sling, the following are grounds to discard the sling; cutting of the longitudinal strands, oil or diesel impregnation, damage to the stitching.
- In a round sling, the outer covering does not take any load, but damage may suggest damage to the inner core which does the work.

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

Likelihood	Severity
1 Harm Extremely Unlikely to Occur	5 Death or Debilitating Injury
2 Harm Unlikely to Occur	4 Major Injury or Like Threatening Illness
3 Harm Seldom Occurs	3 Injury or Illness Requiring Time Off Work
4 Harm Occasionally Occurs	2 Injury or Illness Requiring Medical Treatment
5 Harm Certain to Or Frequently Occurs	1 Slight Injury

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

Green Piling Ltd risk rating system is designed to give a realistic assessment of the level of risk to be used in assessments which along with the controls and precautions gives information to be measured during reviews. Safety meetings and investigations and audits give opportunities for risk levels targeted to be reduced and for levels of likelihood and severity to be re-assessed and actions planned as result.
Generally high-risk ratings equal to or greater than 12 (red) are not acceptable and actions should be taken to reduce risk to low risk 6 or less (green)
Where possible preference should be given to reducing likelihood rather than severity e.g. reduce chances of impact with body rather than using body armour to protect body.

ACTIVITY – SITE MOBILISATION

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Vehicular & Pedestrian Access Interface between pedestrians & vehicles, danger of bodily injury	✓	✓		2	5	10	Plan the main vehicle, plant/ pedestrian access routes.	1	5	5	Mulbury	Piling Foreman
								Aim for barriered segregation and avoid reversing, where possible.				Mulbury	Piling Foreman
								Banksman to direct vehicles when necessary, particularly reversing vehicles.				Mulbury	Piling Foreman
								Ensure high visibility garments and task specific PPE is worn.				Mulbury	Piling Foreman
2	Interaction With 3rd Parties Sub-contractor suppliers &/ or other site staff working within exclusion zone impact or trapping risks.	✓	✓	✓	3	5	15	Ensure that visitor GPL visitor induction is carried out for all potential visitors to piling area and is implemented in full.	1	4	4	Piling Foreman	Piling Foreman
								Ensure that Banksman maintains exclusion zone and that all movements stop if exclusion zone is breached.				Piling Foreman	Piling Foreman
								Report any breaches of exclusion zone to Mulbury and Green Piling Contracts Manager.				Piling Foreman	Piling Foreman
3	Vehicle Movements Other road/ site traffic.	✓	✓	✓	3	5	15	Access routes to be agreed with Mulbury before work commences.	1	5	5	Contracts Manager	Piling Foreman
								Site speed restrictions will be adhered to.				Piling Foreman	Piling Foreman
								Manoeuvre all delivery vehicles using a trained banksman.				Piling Foreman	Piling Foreman
								Keep all delivery vehicles on designated haul roads and loading areas.				Piling Foreman	Piling Foreman
4	Delivery & Unloading Piling Rig Collision with surrounding structures. Collision with other plant & equipment. Damage to road surfaces/ pavements.	✓	✓	✓	2	5	10	Ensure site is suitable for rig delivery and that the ground is firm and level.	1	5	5	Contracts Manager	Piling Foreman
								Identify access hazards – weight, width and height restrictions noted.				Contracts Manager	Piling Foreman
								Check security of load and agree sequence of unloading.				Piling Foreman	Piling Foreman
								Follow site rules – speed limits etc.				Piling Foreman	Piling Foreman
								Rig Operator and Banksman must be trained/ competent				Contracts Manager	Piling Foreman
								Protection of roadways and footpaths when rig is being loaded/ unloaded on the highway.				Mulbury	Piling Foreman
								No one will be allowed to stand at the side of the vehicle being loaded/ unloaded including the Banksman.				Piling Foreman	Piling Foreman
5	Delivery & Unloading of Wagons Collision with surrounding structure. Failure of lift equipment. Fall from height from delivery trailer.	✓	✓	✓	2	5	10	Ensure that a lift plan is in place.	1	3	3	Contracts Manager	Piling Foreman
								Piling equipment & reinforcement to be delivered in vehicles with side rails and pre-slung with slings easily accessible from ground level.				Contracts Manager	Piling Foreman
								Check security of load and agree sequence of unloading.				Piling Foreman	Piling Foreman
								Release lorry load restraints carefully.				Piling Foreman	Piling Foreman
								Where possible, items to be slung/ un-slung from ground level. Where vehicles flatbed is to be accessed, use appropriate access point. After slinging load, operative to dismount the vehicle's bed or stand at the headboard. Edge protection must be used.				Piling Foreman	Piling Foreman
								All lifts to be completed under direction of a trained and competent slinger/ signaller.				Piling Foreman	Piling Foreman

								Suitable mechanical means to be used to off load.				Piling Foreman	Piling Foreman
								Ensure that the laydown area is suitable for the delivery wagons				Piling Foreman	Piling Foreman
								No one will be allowed to stand at the side of the vehicle being loaded/ unloaded including the Banksman.				Piling Foreman	Piling Foreman
6	<u>Lorry Mounted Crane Operations</u> Crane becoming unstable. Collision with surrounding structure. Failure of lifting equipment. Damage or injury to passing vehicles & pedestrians.	✓	✓	✓	2	5	10	All crane movements & lifts to be completed under direction of a trained and competent slinger/ signaller.	1	5	10	Contracts Manager	Piling Foreman
								The crane, lifting accessories and safety devices checked by the user daily. All lifting equipment is subject to a thorough examinations/ testing in accordance with LOLER 1998.				Crane Operator	Piling Foreman
								Fully extend outriggers will be used at all times & locked in position. Outriggers must not be positioned where ground could collapse.				Crane Operator	Piling Foreman
								Outrigger mats must be used at all times.				Crane Operator	Piling Foreman
								Operator to stand in a position of safety.				Crane Operator	Piling Foreman
								No loads should be left suspended.				Crane Operator	Piling Foreman
								Avoid unloading in high winds, heavy rain, snow or icy conditions				Crane Operator	Piling Foreman
								Lifting points shall be checked for signs of damage prior to being lifted.				Piling Foreman	Piling Foreman
								Only propriety lifting points to be used; only recognised slinging techniques will be used; Tag lines to be used when necessary.				Piling Foreman	Piling Foreman
								Under no circumstances will the crane or lifting accessories be overloaded.				Piling Foreman	Piling Foreman
								No one will be allowed to stand at the side of the vehicle being loaded/ unloaded including the Banksman.				Piling Foreman	Piling Foreman
								As the load is lifted and slewed, do not stand in the line with direction of travel as this is a crush zone.				Piling Foreman	Piling Foreman

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4 Harm Occasionally Occurs	2 Injury or Illness Requiring Medical Treatment
5 Harm Certain to Or Frequently Occurs	1 Slight Injury

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

Green Piling Ltd risk rating system is designed to give a realistic assessment of the level of risk to be used in assessments which along with the controls and precautions gives information to be measured during reviews. Safety meetings and investigations and audits give opportunities for risk levels targeted to be reduced and for levels of likelihood and severity to be re-assessed and actions planned as result.
Generally high-risk ratings equal to or greater than 12 (red) are not acceptable and actions should be taken to reduce risk to low risk 6 or less (green)
Where possible preference should be given to reducing likelihood rather than severity e.g. reduce chances of impact with body rather than using body armour to protect body.

ACTIVITY – ERECTING PILING RIG

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	<u>Erection of Rig</u> Failure or overturning of the rig during erection. Fall from Height. Failure of lifting equipment.	✓	✓		3	4	12	Erection and dismantling must only be undertaken by trained and competent operatives.	1	4	4	Contracts Manager	Piling Foreman
								Platform certificate to be completed to confirm that platform is adequate before works commences.				Mulbury	Piling Foreman
								All work performed from height must be completed using a MEWP. All persons required to work from height will be trained, competent person.				Contracts Manager	Piling Foreman
								Ensure site/ piling area is suitable for rig delivery and that the ground is firm and level.				Mulbury	Piling Foreman
								Rig erection to be carried out in line with the machine operations manual.				Piling Foreman	Piling Foreman
								All non-piling personnel should be kept away from the rig during this operation. Exclusion zone to be in place.				Mulbury	Piling Foreman
								Rig controls will only be activated following clear audible instruction from Banksman.				Rig Operator	Piling Foreman
								Safety devices will not be by-passed, nor be relied upon by the operator.				Rig operator	Piling Foreman
								Ensure current certification is available for all lifting equipment and accessories.					Piling Foreman
								The auger must be held in the gates and remain attached to the auxiliary line whilst the operative in the MEWP is raised into position, where they will knock in the pins.				Piling Foreman	Piling Foreman
								All operatives in the MEWP basket shall wear a safety harness secured to a stable point in the basket. Never overreach from the basket, the MEWP must be positioned as close as possible to the item being worked on.				Piling Foreman	Piling Foreman
								Operative in the MEWP basket who is making the connection shall not hold the flights until the flight being lowered is touching the remainder of the string.				Piling Foreman	Piling Foreman
								All equipment and accessories must be stored in the basket in a way to prevent them falling.				Piling Foreman	Piling Foreman

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

Likelihood	Severity
1 Harm Extremely Unlikely to Occur	5 Death or Debilitating Injury
2 Harm Unlikely to Occur	4 Major Injury or Like Threatening Illness
3 Harm Seldom Occurs	3 Injury or Illness Requiring Time Off Work
4 Harm Occasionally Occurs	2 Injury or Illness Requiring Medical Treatment
5 Harm Certain to Or Frequently Occurs	1 Slight Injury

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

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ACTIVITY – MOVEMENT OF PILING RIG

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Rig Movement About Site Collision with surrounding structures, plant & equipment. Contact with person.	✓	✓	✓	4	5	20	Platform certificate to be completed to confirm that platform is adequate before works commences.	1	4	4	Piling Foreman	Piling Foreman
								Route of rig movements to be visually assessed before commencing and discussed with Mulbury as required.				Piling Foreman	Piling Foreman
								Movement of piling rig to be controlled by trained & competent Banksman. All rigs must be fitted with rear view mirrors and reversing cameras.				Piling Foreman	Piling Foreman
								Communication between Rig Operator and Banksman to be agreed hand signals.				Piling Foreman	Piling Foreman

ACTIVITY – REFUELLING

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Re-Fuelling Bodily contact with fuel oil. Pollution of controlled waters.	✓	✓		4	4	16	Always store diesel bowser way from any wate course and surface water drainage systems.	1	3	3	Piling Foreman	Piling Foreman
								Ensure diesel bowsers are locked when not in use.				Piling Foreman	Piling Foreman
								Only store fuel in appropriate fuel cans.				Piling Foreman	Piling Foreman
								Ensure plant adequate drip trays and spill kits are located close by.				Piling Foreman	Piling Foreman
								Ensure plant nappies are used when ever filling up items of plant.				Piling Foreman	Piling Foreman
								All engines must be switched off when refuelling.				Piling Foreman	Piling Foreman
								Any spillage is to be reported immediately to the Foreman. A spill kit is to be used as and when required.				Piling Foreman	Piling Foreman
								Appropriate fire extinguishers must be located close by to any item of plant being refuelled.				Piling Foreman	Piling Foreman
								Always ensure the correct PPE is being worn as identified within the COSHH assessment.				Piling Foreman	Piling Foreman

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

Likelihood	Severity
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Severity \ Likelihood	1	2	3	4	5
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ACTIVITY – CFA PILING

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Overhead Services Machines coming into contact with services whilst passing under, working close by or working underneath services leading to possible electrocution.	✓	✓		2	4	8	All relevant information regarding the presence of overhead services must be provided to Green Piling prior to mobilisation.	1	4	4	Mulbury	Contracts Manager
								Visually check service location.				Piling Foreman	Piling Foreman
								Request clearance, physical barriers and signs from Mulbury.				Mulbury	Piling Foreman
								Remove augers and lower the mast when travelling where necessary.				Piling Foreman	Piling Foreman
								Ensure precautions, barriers etc. are maintained.				Mulbury	Piling Foreman
								Do not proceed unless precautions are in place.				Piling Foreman	Piling Foreman
2	Underground Services Machines coming into contact with services including electricity, gas, water, sewers and chemical pipelines.	✓	✓		2	4	8	All relevant information regarding the presence of underground services must be provided to Green Piling prior to mobilisation.	1	4	4	Mulbury	Contracts Manager
								Permit to pile to be completed with all relevant utility drawings from Mulbury.				Piling Foreman	Piling Foreman
								Ensure that services have been traced & located and clearly marked before work begins.				Mulbury	Piling Foreman
								Piling rig & excavators must not be operated within 500mm of a service.				Piling Foreman	Piling Foreman
								Advise all operatives involved in piling operations of service locations.				Mulbury	Piling Foreman
								Monitor drilling conditions and cause re-tracing of services, if necessary.				Piling Foreman	Piling Foreman
								Underground services will always be assumed to be live.				Mulbury	Piling Foreman
3	Inadequate Piling Platform Rig becoming unstable.	✓	✓		2	4	8	Suitable access route and piling platform to be constructed capable of supporting the intended load.	1	4	4	Mulbury	Piling Foreman
								Platform certificate to be completed to confirm that platform is adequate before works commences.				Mulbury	Piling Foreman
								Platform to be re-inspected and signed off when ever the platform has been disturbed, or at maximum 7-day intervals.				Mulbury	Piling Foreman
								Platform to be maintained throughout the piling works period.				Mulbury	Piling Foreman
								Keep plant and equipment clear of all excavations and boreholes.				Piling Foreman	Piling Foreman
								Plant and equipment to be kept in safe areas.				Piling Foreman	Piling Foreman
4	Sloping Ground Rig becoming unstable, overturning.	✓	✓	✓	2	4	8	Assess gradient against machine manufacturing data.	1	3	3	Contracts Manager	Piling Foreman
								Ensure the gradient is suitable for traveling and is constructed correctly.				Piling Foreman	Piling Foreman
								Travel with mast raked back and remove augers.				Piling Foreman	Piling Foreman
								Only raise piling rig mast on level ground.				Piling Foreman	Piling Foreman
5	Contaminated Ground Operatives health affected by exposure to substances.	✓	✓	✓	2	5	10	Request soil information.	1	5	5	Contracts Manager	Contracts Manager
								Provide a method statement and training.				Mulbury	Piling Foreman
								Provide suitable hygiene facilities.				Mulbury	Piling Foreman
								Prepare COSHH assessment & ensure PPE as required is provided				Contracts Manager	Piling Foreman

~~6~~	~~Railway Working~~ ~~Contact with trains with personal injury and damage.~~	~~✓~~	~~✓~~	~~✓~~	~~3~~	~~4~~	~~12~~	~~Piling rig to be positioned in such as not to interfere with rail traffic. Orientation of rig to the track.~~	~~1~~	~~4~~	~~4~~	~~Piling Foreman~~	~~Piling Foreman~~
								~~Formulate emergency procedures, including training for all operatives.~~				~~Contracts Manager~~	~~Piling Foreman~~
								~~Ensure orange high visibility garments are worn.~~				~~Piling Foreman~~	~~Piling Foreman~~
~~7~~	~~Work Over Water~~ ~~Possible drowning.~~	~~✓~~	~~✓~~	~~✓~~	~~2~~	~~4~~	~~8~~	~~Suitable barriers to be erected to prevent access to the water.~~	~~1~~	~~4~~	~~4~~	~~Mulbury~~	~~Piling Foreman~~
								~~Supply and cause the wearing of automatically inflating life jackets EN 396 150 standard.~~				~~Mulbury~~	~~Piling Foreman~~
								~~Put rescue procedures in place, this should include a manned safety boat in fast flowing/ tidal water.~~				~~Mulbury~~	~~Piling Foreman~~
~~8~~	~~Working Near Watercourses~~ ~~Pollution of controlled waters.~~	~~✓~~	~~✓~~	~~✓~~	~~2~~	~~3~~	~~3~~	~~Where possible fence the work area or the watercourse.~~	~~1~~	~~3~~	~~3~~	~~Mulbury~~	~~Piling Foreman~~
								~~Keep fuel and other liquids at a safe distance in a bunded area (at least 15m).~~				~~Piling Foreman~~	~~Piling Foreman~~
9	Piling adjacent to Structures and Site Boundary Collapse of building or part of the building onto persons. Persons being struck by bore spoil material. Persons & vehicles unintentionally coming into contact.	✓	✓	✓	2	5	10	Structural assessment to be made with regard to the stability of the structure.	1	5	5	Mulbury	Contracts Manager
								Necessary information to be provided and any shoring system to be in place and checked before work commences.				Mulbury	Contracts Manager
								Provide exclusion zones/ protection measures necessary.				Mulbury	Piling Foreman
								Provide, erect and maintain polythene sheeting/ debris netting to perimeter walls/ fencing to prevent spoil/ concrete / slurry splashing members of the public/ adjacent structures.				Mulbury	Piling Foreman
10	Mechanical Failure of Plant Operatives being injured by defective plant or when carrying out unauthorised repairs	✓	✓		3	4	12	Daily visual inspections to take place this must include the condition and operation of guards.	1	4	4	Piling Foreman	Piling Foreman
								Recorded defects must be made known to the Plant Department.				Piling Foreman	Piling Foreman
								In the event of plant breakdown or failure make the area safe.				Piling Foreman	Piling Foreman
								Inform the Foreman/ Plant Manager.				Piling Foreman	Piling Foreman
								Don not carry out unauthorised repairs.				Piling Foreman	Piling Foreman
11	Operation of Piling Rig Misuse or inappropriate behaviour causing accidents.	✓	✓		4	4	16	Rig operator to be competent to drive piling rig.	1	4	4	Contracts Manager	Piling Foreman
								Rig Operator to be in good health, not to be under influence of drugs or alcohol, or to be distracted by outside influences e.g. phones, radios, conversations.				Contracts Manager	Piling Foreman
12	Placing Auger Bung Entrapment or entanglement in the moving or rotating auger. Persons being struck by bore spoil material.	✓			3	5	15	Rig Operator will ensure the rig is idle, brakes are applied and no movement of auger.	1	5	5	Piling Foreman	Piling Foreman
								The Rig Operator will not perform any function until instructed by the Banksman.				Piling Foreman	Piling Foreman
								Ensure no material is still on the auger at height. Attempt to clear any spoil passing the cleaner by stop-start rotation in both directions (attempt to shake off)				Piling Foreman	Piling Foreman
13	Boring of Piles Entrapment or entanglement in the moving or rotating auger. Persons being struck by bore spoil material.	✓			4	3	12	DO not over-ride safety devices when extending parallelogram.	2	2	4	Piling Foreman	Piling Foreman
								Banksman to be present and maintain exclusion zone 2m around auger when working. No access unless augers stopped.				Piling Foreman	Piling Foreman
								Piling rig gates to remain closed when possible.				Piling Foreman	Piling Foreman
								Should the rig gates need to be opened to allow the piling rig to achieve its full depth; this is acceptable if the auger rotation stops when anyone has to enter the 'danger zone'; the Banksman must police the area in front of the rig.				Piling Foreman	Piling Foreman
								Auger cleaner to be used when practical.				Piling Foreman	Piling Foreman
								Auger not to be cleaned manually.				Piling Foreman	Piling Foreman
14	Auger Blockage Contact with concrete/ cement. Burst hose across site. Persons being struck by bore spoil.	✓	✓		4	4	16	Pre-charge the concrete line to 15bar, if the auger cap has not pushed out stop pumping and back pump.	1	4	4	Piling Foreman	Piling Foreman
								Back screw the augers out of the bore until the tip can be accessed.				Piling Foreman	Piling Foreman
								Remove all loose material to prevent falling debris before accessing auger tip to remove the blockage.				Piling Foreman	Piling Foreman
								Re-drill pile 500mm beyond its schedule design depth.				Piling Foreman	Piling Foreman
								Care taken at all time during pre-charging of the augers.				Piling Foreman	Piling Foreman

15	Concrete Pumping Contact with concrete/ cement. Moving parts of drum & pump. Excessive noise exposure for the operator. Trapping by concrete lorries.	✓	✓		2	4	8	Waterproof gloves, a long-sleeved top and trousers must be worn at all times whilst working with any cement-based product.	1	2	2	Piling Foreman	Piling Foreman
								Ensure suitable water tight and chemical resistant wellington boots are worn at all times.				Piling Foreman	Piling Foreman
								Eye protection must be worn when working with cement-based products. If cement, concrete or grout gets into the eyes, it must be dealt with immediately by flushing with clean water.				Piling Foreman	Piling Foreman
								Begin each day wearing clean clothing and finish each day with a shower.				Piling Foreman	Piling Foreman
								Daily inspection to be completed by operator and recorded of daily inspection log. The moving part of the pump must be adequately guarded to prevent contact with moving parts. Hopper grill to be secured when operating. Engine must be stopped before lifting grill.				Piling Foreman	Piling Foreman
								Ear protection must be worn at all times whilst operating pump.				Piling Foreman	Piling Foreman
								Couplings to be fitted to all joints with joints secured by R clips. Hoses and couplings, including whip checks, to be inspected daily.				Piling Foreman	Piling Foreman
								All concrete hoses connected to the mast and not stored at ground level must be fitted with whip checks.				Piling Foreman	Piling Foreman
								Rig 'drop hoses' to be fitted with sleeved hoses for additional protection.				Piling Foreman	Piling Foreman
								Use pipe protectors or burry concrete hoses where ever possible to prevent damage caused by vehicles constantly running over the hoses.				Piling Foreman	Piling Foreman
								Ensure daily that a clean/ tidy work area/ platform is maintained.				Piling Foreman	Piling Foreman
								Banksman to control all reversing vehicles associated with works.				Piling Foreman	Piling Foreman
16	Spoil Falling from Auger Persons being struck by bore spoil material.	✓	✓	✓	3	4	12	During Extraction the auger must be cleared by a mechanical cleaner fitted to the piling rig.	1	2	2	Piling Foreman	Piling Foreman
								Auger not to be cleared manually. Where access is possible, use excavator (working within its reach) to clear spoil from a stationary auger.				Piling Foreman	Piling Foreman
								Green Piling operative to ensure the gates/ auger cleaner remain clear from excessive build-up of spoil.				Piling Foreman	Piling Foreman
17	Removal of Spoil from Pile Position by Excavator Collision with operatives, plant or structures.	✓	✓		2	5	10	Excavator Operator must ensure 360° vision is available at all times.	1	3	3	Excavator Operator	Piling Foreman
								When setting up on site, ensure consideration is given to storage of materials minimising the risk of crossing pedestrian routes.				Mulbury	Piling Foreman
								A trained and competent Banksman must co-ordinate all excavator movements.				Piling Foreman	Piling Foreman
								No-one should be located within 1m of the excavator.				Piling Foreman	Piling Foreman
18	Use of Piling Rig/ Excavator to Insert Reinforcing Cage Striking of operative during lift from horizontal to vertical. Cage falling from excavator. Underside of excavator bucket striking personnel when pushing cage in.	✓	✓		3	4	12	Area of lift to be kept clear. If it is required to hold the tail end of the reinforcement during lifting, mechanical means should be used. If this is not possible the area should be cleared off obstructions, the distance to lift is to be as short as possible and a constant line of sight is to be kept between operator and operative holding the tail end.	1	3	3	Piling Foreman	Piling Foreman
								All driver operators must be trained and competent.				Piling Foreman	Piling Foreman
								The excavator, lifting accessories and safety devices checked by the user daily. All lifting equipment is subject to a thorough examinations/ testing in accordance with LOLER 1998.				Piling Foreman	Piling Foreman
								Lifting equipment must be attached to the dedicated lifting eye of the excavator.				Piling Foreman	Piling Foreman
								All non-essential personnel must be kept away from the work area. The lifting operation must be controlled by the Banksman.				Piling Foreman	Piling Foreman
								Do not work beneath a raised bucket.				Piling Foreman	Piling Foreman
19	Freshly Concreted Bores Contact with concrete/ cement. Injury from exposed steel.	✓	✓		3	3	9	Marker paint to be used to identify the position.	1	3	3	Piling Foreman	Piling Foreman
								All exposed steel rebar will be clearly marked.				Piling Foreman	Piling Foreman
								No reinforcement to project above piling platform level.				Piling Foreman	Piling Foreman
20	Final Use of Pile			✓	2	4	8	Qualified person to undertake pile design.	1	4	4	Contracts Manager	Contracts Manager
								Specifications and client requirements to be adhered to.				Contracts Manager	Contracts Manager

	Collapse of structure due to inadequate pile design. Inappropriate use of materials.							Ensure pile type and materials therein are sourced with the greatest care for the environment.				Contracts Manager	Contracts Manager
21	PPE Inadequate or unsuitable equipment.	✓			2	3	6	Supply head, foot, ear protection, overalls and any other protective equipment identified in this risk assessment associated with the work.	1	3	3	Contracts Manager	Piling Foreman
								Replace as necessary.				Contracts Manager	Piling Foreman
								All equipment must be properly stored after use.				Piling Foreman	Piling Foreman
								Safety helmets must be worn on site at all times. They must not be worn if cracked or damaged.				Piling Foreman	Piling Foreman
22	Lighting Persons being struck by vehicles. Persons & vehicles unintentionally coming into contact. Trips, slips and falls.	✓	✓	✓	3	2	6	Site hazard assessment to confirm that lighting is adequate or to ensure artificial light is available when necessary.	1	2	2	Mulbury	Contracts Manager
								Plant to be fitted with task lighting.				Plant Manager	Piling Foreman
								Mulbury to provide background safety lighting in periods of darkness in areas used by Green Piling, including walkways and access routes.				Mulbury	Contracts Manager
23	Substances Hazardous to Health	✓			3	4	12	Do not expose operatives to the substance unless you have a COSHH Risk Assessment for it.	1	3	3	Piling Foreman	Piling Foreman
								Comply with the precautions in the assessment.				Piling Foreman	Piling Foreman
								If in doubt contact the supplier.				Piling Foreman	Piling Foreman
24	Abrasive Cutting Tools Fragmentation of the disc. Eye, face, hands and arm injuries. Contact with rotating wheel or disk Clothing/hair entanglement with moving parts, Fire risk from sparks Noise, Eye injuries & puncture wounds from wheel bursts, Hit by flying particles/ debris, Exposure to Hand Arm Vibration (HAVs)	✓	✓		2	4	8	Ensure the equipment is in good working order, if electrical ensure current PAT tests are in date.	1	3	3	Piling Foreman	Piling Foreman
								Trained and competent person only to change cutting disc.				Piling Foreman	Piling Foreman
								Goggles to BS EN 166 B must be worn. Suitable gloves and ear protection to be worn.				Piling Foreman	Piling Foreman
								Equipment must not be used near combustible materials. If any fuel spillage on clothing, equipment must not be used.				Piling Foreman	Piling Foreman
								Equipment and disks/wheels will be inspected prior to use for damage. Ensure the face of the wheel is dressed evenly.				Piling Foreman	Piling Foreman
								Users will not use undue pressure. The operator will make sure that guards are fitted. Guards will not be removed except for maintenance purposes only.				Piling Foreman	Piling Foreman
								Ensure that all persons are kept away from areas where sparks or dust is directed. Remove all flammable substances from the immediate area.				Piling Foreman	Piling Foreman
								Minimise exposure to vibration by reducing the amount of time you use the tool in one go, by doing other jobs.. Keep hands warm & dry & avoiding gripping or forcing tools.				Piling Foreman	Piling Foreman
								Disc cutters will only be used when standing on a firm, level base. Make sure the material you are cutting will not move during the operation.				Piling Foreman	Piling Foreman
								Body positioning to prevent being struck by kick-back.				Piling Foreman	Piling Foreman
25	Manual Handling Sprain or strain injuries.	✓			3	4	12	Avoid manual handling if possible. Significant load = risk of injury.	1	3	3	Piling Foreman	Piling Foreman
								Note Green Piling manual handling assessment.				Piling Foreman	Piling Foreman
								Use mechanical aids if practicable.				Piling Foreman	Piling Foreman
								Reduce the weight of the load to be handled when practicable. Loads are to be lifted by multiple operatives to spread the load.				Piling Foreman	Piling Foreman
								Operatives to be trained to carry out the task.				Contracts Manager	Piling Foreman
26	Trips, Slips and Falls	✓	✓	✓	3	3	9	Area provided by Mulbury to be clean and tidy with adequate working space.	1	3	3	Mulbury	Piling Foreman
								Good housekeeping practices must be encouraged by operatives at all times.				Piling Foreman	Piling Foreman
								Rubbish, lifting equipment, reinforcement off cuts, etc must not be allowed to build up. Materials to be staked and stored properly.				Piling Foreman	Piling Foreman
								All walkways to be kept clear and tidy, with particular attention to designated pedestrian routes.				Mulbury	Piling Foreman
27	Dust	✓	✓	✓	3	3	9	Ensure that adequate dust controls are in place.	1	3	3	Mulbury	Piling Foreman
								Consider spraying/ damping down the site surface to reduce dust.				Mulbury	Piling Foreman
								In dusty conditions suitable eye protection and dust masks must be available and worn.				Mulbury	Piling Foreman

28	Excessive Noise (Safety) Effect of piling operations on long term hearing.	✓	✓	✓	3	3	9	Ear protection to be worn by workers within 5m of pump and rig. Signs to be displayed on rig warning that ear protection is mandatory. Other workers onsite to be provided with ear protection if less than 5m.	1	3	3	Piling Foreman Plant Manager Mulbury	Piling Foreman Piling Foreman Piling Foreman
29	Excessive Noise (Environmental) Noise pollution causing nuisance to neighbours.			✓	4	2	8	Assess likely impact on local environment. If necessary, warn neighbours of extent of works. Reasonable hours of work to be observed.	2	2	8	Mulbury Mulbury Piling Foreman	Piling Foreman Piling Foreman Piling Foreman
30	Vibration (Environmental) Vibration causing nuisance.			✓	4	1	4	Assess likely impact on local environment. If necessary, warn neighbours of extent of works.	3	1	3	Mulbury Mulbury	Contracts Manager Contracts Manager
31	Vibration (Safety) Effect of piling operations on buildings & services.	✓	✓	✓	4	1	4	Visually assess local buildings for signs of risk of vibration damage. If necessary, carry out dilapidations report. Investigate services and risk of vibration damage and protect or move.	3	1	3	Mulbury Mulbury Mulbury	Contracts Manager Contracts Manager Contracts Manager
32	Welfare Facilities Inadequate, unclean welfare facilities leading to unhealthy conditions.	✓			4	3	12	Welfare and toilet facilities to be adequate for the numbers employed. Welfare and toilet facilities to be maintained in a clean, tidy condition. Provide hot, cold or warm running water. Basin large enough to allow the forearms to be washed. Soap, towels to be made available. Fires and electrical installations to have been inspected and certificated at 3 monthly intervals.	2	2	4	Mulbury Mulbury Mulbury Mulbury Mulbury Mulbury	Piling Foreman Piling Foreman Piling Foreman Piling Foreman Piling Foreman Piling Foreman
33	First Aid Lack of treatment leading to infection and health complications.	✓			1	4	8	A person trained in first aid to be present if there are more than 5 persons. Suitable first aid equipment to be provided. Green Piling internal accident report form to be completed after treatment. Make an emergency telephone number available.	1	3	3	Mulbury Mulbury Contracts Manager Mulbury	Piling Foreman Piling Foreman Piling Foreman Piling Foreman
34	Fire Precautions Injury and damage cause by fire.	✓	✓	✓	2	4	8	Provide an adequate number of dry powder fire extinguishers. Required to have been serviced during the past 12 months. Site them in suitable positions. Train operatives in their use.	1	3	3	Mulbury Mulbury Mulbury Mulbury	Piling Foreman Piling Foreman Piling Foreman Piling Foreman
35	Security Unauthorised use of plant. 3rd party damage. Theft of plant, equipment and materials.	✓	✓	✓	2	4	8	Reduce risk of theft of plant and equipment by: • Remove on wheel or fitting wheel clamps, changing plant equipment to a fixed object, removing batteries. • Fitting control arm covers. • Locking away small tools in secure location. Remove keys from plant and equipment when not in use and left unattended. Materials will be safely stacked and stored. Diesel bowsers to be locked. Where Green Piling are responsible for the site, adequate security fencing and sufficient number of construction/ mandatory warning signs will be deployed.	1	2	2	Piling Foreman Piling Foreman Piling Foreman Piling Foreman	Piling Foreman Piling Foreman Piling Foreman Piling Foreman

CONTRACT SAFETY PLAN FOR CFA PILING

Contract Name	Goulden Street	**Contract Number**	13731
Date	02/12/2021	**Revision**	0

Likelihood	Severity
1 Harm Extremely Unlikely to Occur	5 Death or Debilitating Injury
2 Harm Unlikely to Occur	4 Major Injury or Like Threatening Illness
3 Harm Seldom Occurs	3 Injury or Illness Requiring Time Off Work
4 Harm Occasionally Occurs	2 Injury or Illness Requiring Medical Treatment
5 Harm Certain to Or Frequently Occurs	1 Slight Injury

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

Green Piling Ltd risk rating system is designed to give a realistic assessment of the level of risk to be used in assessments which along with the controls and precautions gives information to be measured during reviews. Safety meetings and investigations and audits give opportunities for risk levels targeted to be reduced and for levels of likelihood and severity to be re-assessed and actions planned as result.
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ACTIVITY – CLEANING OUT EQUIPMENT & CLEARING BLOCKAGES

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Moving Concrete Hose Persons being struck by vehicles. Sprain or strain injuries. Contact with concrete/ cement.	✓			3	3	9	Use mechanical aids wherever possible to lift hoses.	1	2	2	Piling Foreman	Piling Foreman
								Share the load by team lifting when necessary.				Piling Foreman	Piling Foreman
								Adopt the correct posture when lifting.				Piling Foreman	Piling Foreman
								Use the correct hand tools when placing clips and pins.				Piling Foreman	Piling Foreman
								Operatives wear suitable gloves when handling equipment.				Piling Foreman	Piling Foreman
2	Bursting Concrete Hose Contact with concrete/ cement. Persons being struck by moving hose/ concrete. Damage to concrete hoses.	✓	✓	✓	2	3	6	Hoses to be inspected by Pump Operative daily at start of shift.	1	3	3	Piling Foreman	Piling Foreman
								Couplings to be fitted to all joints with joints secured by R clips. Hoses and couplings, including whip checks, to be inspected daily.				Piling Foreman	Piling Foreman
								All concrete hoses connected to the mast and not stored at ground level must be fitted with whip checks.				Piling Foreman	Piling Foreman
								Use pipe protectors or dig out concrete hoses where ever possible to prevent damage caused by vehicles constantly running over the hoses.				Piling Foreman	Piling Foreman
3	Clearing Concrete Lines and Auger Contact with concrete/ cement. Persons being struck by moving hose/ concrete.	✓			2	3	6	All blowing out operations are to be under direct control of a trained Foreman.	1	3	3	Piling Foreman	Piling Foreman
								One operative to remain at piling rig during procedure, Pump Operative to control compressor.				Piling Foreman	Piling Foreman
								Rig lines to be blown out away from the perimeter fencing at all times and blow out chamber used were practical.				Piling Foreman	Piling Foreman
								Operatives to monitor concrete lines as the concrete moves through the lines, when the ball passes the back of the piling rig air flow should be turned off and surplus air released through the exit valve.				Piling Foreman	Piling Foreman
								All persons not involved in this operation to be kept at a safe distance.				Piling Foreman	Piling Foreman
								Whip-checks to be used at all air hose joints including at both compressor and the blow out gun.				Piling Foreman	Piling Foreman
								Operator to check adaptors are clear of debris before fitting hose.				Piling Foreman	Piling Foreman
4	Dealing with Blockages Contact with concrete/ cement. Persons being struck by moving hose/ concrete. Damage to concrete hoses.	✓			3	3	9	Where the sponge ball will exit other than down the auger, a ball catcher or blowout chamber may be fitted to the free end of the hose run.	1	3	3	Piling Foreman	Piling Foreman
								Prevent the hose from 'whipping' by fixing a strop to the hose and secure it to the excavator.				Piling Foreman	Piling Foreman
								Holding the hose down with an excavator bucket is not effective and should not be used as the only means of restraint, although it can be used in addition to the strop.				Piling Foreman	Piling Foreman
								Before releasing a joint, pressure should be released where possible by back-pumping.				Piling Foreman	Piling Foreman
5	Prevent Blockages	✓			2	3	6	Use of smaller size aggregates for first load of each day.	1	3	3	Piling Foreman	Piling Foreman
								The length of hose between the pump and rig to be as short as possible.				Piling Foreman	Piling Foreman

6	Use of Air Compressor Contact with high pressure air.	✓			3	3	9	Compressor to be placed on firm, level ground. Hand brake is to be engaged and if necessary, wheel chocked.	3	3	9	Piling Foreman	Piling Foreman
								Operator to ensure valves are closed and hoses are connected before start up.				Piling Foreman	Piling Foreman
								Whip checks to be fitted to all connections in the airline.				Piling Foreman	Piling Foreman
								Air compressor to be switched off and stored air released before joints are disconnected.				Piling Foreman	Piling Foreman
								Air must only be turned off at valve.				Piling Foreman	Piling Foreman
								Ensure non-essential personnel are kept away from work area where ever possible.				Piling Foreman	Piling Foreman
7	High Noise levels from Air Compressor Excessive noise exposure for the operator.	✓	✓	✓	3	4	12	Ensure the compressor is used in accordance with the manufacturer's instructions.	1	2	2	Piling Foreman	Piling Foreman
								All operators and persons in the immediate work area must wear suitable ear protection.				Piling Foreman	Piling Foreman
								Close all valves.				Piling Foreman	Piling Foreman
								Ensure the compressor has been regularly maintained.				Piling Foreman	Piling Foreman
8	Pressure Washer Contact with high pressure water. Excessive noise exposure for the operator.	✓	✓	✓	3	3	9	Ensure the equipment is in good working order. Do not use faulty pressure washer.	1	2	2	Piling Foreman	Piling Foreman
								Use only hose and accessories rated for pressure higher than pressure washers p.s.i.				Piling Foreman	Piling Foreman
								If the engine does not start after two pulls, squeeze trigger of gun to relieve pump pressure.				Piling Foreman	Piling Foreman
								Waterproof gloves, eye protection and safety wellington/ boots to be worn at all times.				Piling Foreman	Piling Foreman
								Do not stand in front of the cleaning jet. Spray will always be directed away from self and others.				Piling Foreman	Piling Foreman
								During operation, only touch the control surfaces. Grip gun/ wand to be held firmly with two hands. Operator must not hold onto the hose or fittings.				Piling Foreman	Piling Foreman
								Good housekeeping is required at all times. Keep hose tidy and away from walkways.				Piling Foreman	Piling Foreman

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Severity \ Likelihood	1	2	3	4	5
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ACTIVITY – STEEL FIXING LOOSE REINFORCEMENT

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Steel Fixing Unsecured cages. Cuts from projecting wire. Slips, trips.	✓	✓		3	5	15	Manual handling is to be kept to a minimum by the use of the attendant excavator. Heavy loads are to be split into loads that the operative is comfortable with lifting.	1	2	2	Piling Foreman	Piling Foreman
								Work area and access routes shall be cleared of obstructions and trip hazards. Collect excess tying wire.				Piling Foreman	Piling Foreman
								Stack reinforcement in approved laydown area. Reinforcement to be stored as such to avoid having to step over items.				Piling Foreman	Piling Foreman
								Eye protection steel toe capped boots to boots to be worn at all times. Gloves should offer adequate protection but maintain dexterity.				Piling Foreman	Piling Foreman
								Trestle tables to be suitably strong and placed on firm level ground.				Piling Foreman	Piling Foreman
								Tails on ties to be bent inward. Long tails must be cut.				Piling Foreman	Piling Foreman
								Ensure cages have enough ties, braces etc to allow safe slinging.				Piling Foreman	Piling Foreman

ACTIVITY – PILE TESTING

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Cube Making Contact with concrete/ cement.	✓			2	4	8	Waterproof gloves, a long-sleeved top and trousers must be worn at all times whilst working with any cement-based product.	1	4	4	Piling Foreman	Piling Foreman
								Eye protection must be worn when working with cement-based products. If cement, concrete or grout gets into the eyes, it must be dealt with immediately by flushing with clean water.				Piling Foreman	Piling Foreman
2	Integrity Testing Contact with plant and equipment. Slips, trips and falls.	✓	✓		4	5	20	Ensure GPL visitor induction is carried out for all potential visitors to piling area and is implemented in full.	1	3	3	Piling Foreman	Piling Foreman
								Plan the main vehicle, plant/ pedestrian routes.				Piling Foreman	Piling Foreman
3	Load Testing Collapse of weights. Persons being struck by swinging loads.	✓	✓		2	4	8	A method statement to be produced and made available to the team.	1	3	3	Testing Company	Piling Foreman
								Test rig to be properly constructed to ensure stability.				Testing Company	Piling Foreman
								Lifting/slinging operation to be carried out by an authorised, trained operative.				Testing Company	Piling Foreman
								Tests to be carried out by a competent person to a written procedure.				Testing Company	Piling Foreman

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ACTIVITY – COVID-19

ITEM	WORK ACTIVITY & HAZARD	PERSON AT RISK			INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Green Piling Personnel	Other Contractors	Members of the public	Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Underlying Heath conditions or Family members – through transmission of COVID-19	✓	✓	✓	3	5	15	Anyone living with a person who is at increased risk or an extremely vulnerable person who is shielding from Coronavirus (COVID-19) is permitted to attend Green Piling construction sites and offices but should stringently follow government guidance on social distancing and minimise contact outside the home.	1	5	5	Contracts Manager	Contracts Manager
2	Travel to Site – through transmission of COVID-19	✓	✓	✓	3	4	12	▪ Wherever possible operatives should travel to site alone using their own transport.	1	4	4	Contracts Manager	Contracts Manager
								▪ If workers have no option but to share transport: ○ Journeys should be shared with the same individuals and with the minimum number of people at any one time. ○ Good ventilation (i.e. keeping the windows open) and facing away from each other may help to reduce the risk of transmission. ○ The vehicle should be cleaned regularly using gloves and standard cleaning products, with particular emphasis on handles and other areas where passengers may touch surfaces				Contracts Manager	Contracts Manager
								Parking arrangements for additional vehicles and bicycles.				Mulbury	Contracts Manager
								Providing hand cleaning facilities at entrances and exits. This should be soap and water wherever possible or hand sanitiser if soap and water are not available.				Mulbury	Contracts Manager
								Anyone who takes ill to be picked up by somebody from the same household if they are unable to get home safely on their own, where practicable.				Contracts Manager	Contracts Manager
3	Social Distancing in the Workplace – through transmission of COVID-19	✓	✓	✓	4	5	20	All operatives to stay more than 2m (6ft) apart at all times.	1	5	5	Piling Foreman	Contracts Manager
								Work activities to be rearranged to enable them to be done by one person or to maintain 2m (6ft) social distancing.				Contracts Manager	Contracts Manager
4	Showing Symptoms of Covid-19 – through transmission of COVID-19	✓	✓	✓	3	4	12	Where an operative develops a high temperature or a new persistent cough while at work, they should: ○ Ensure their manager or supervisor is informed ○ Return home immediately ○ Avoid touching anything ○ Cough or sneeze into a tissue and put it in a bin, or if they do not have tissues, cough and sneeze into the crock of their elbow.	1	4	4	Piling Foreman	Contracts Manager
								Anyone who takes ill to be picked up by somebody from the same household, where practicable, if they are unable to get home safely on their own and, as a last resort, emergency services.				Contracts Manager	Contracts Manager

								Follow the guidance on self-isolation and not return to work until their period of self-isolation has been completed				Contracts Manager	Contracts Manager
								Ensure a thorough clean of any identifiable affected areas/ items is undertaken				Contracts Manager	Contracts Manager
5	Transfer from paper documents – through transmission of COVID-19	✓	✓	✓	2	4	8	All operatives who deal with paper copies, office procedures, delivery tickets should now all be electronic where possible.	1	4	4	Piling Foreman	Contracts Manager
								Delivery drivers to be made to print operatives name and pass.				Piling Foreman	Contracts Manager
6	Site Access – through transmission of COVID-19	✓	✓	✓	3	4	12	Stop all non-essential visitors.	1	4	4	Contracts Manager	Contracts Manager
								Introduce staggered start and finish times to reduce congestion and contact at all times.				Piling Foreman	Contracts Manager
								Plan site access and egress points to enable social distancing.				Mulbury	Contracts Manager
								Allow plenty of space between people waiting to enter site.				Mulbury	Contracts Manager
								Use signage: o Such as floor markings, to ensure 2 metre distance is maintained between people when queuing o Reminding workers not to attend if they have symptoms of Coronavirus (Coivid-19) and to follow guidelines.				Mulbury	Contracts Manager
								Remove or disable entry systems that require skin contact (e.g. fingerprint scanners) unless they are cleaned between each individual use.				Mulbury	Contracts Manager
								All operatives to wash their hands for 20 seconds using soap and water when entering and leaving the site.				Piling Foreman	Contracts Manager
								Reduce the number of people in attendance at site inductions and consider holding them outdoors wherever possible.				Mulbury	Contracts Manager
7	Deliveries – through transmission of COVID-19	✓	✓	✓	2	4	8	Where loading and offloading arrangements on site will allow it, drivers should remain in their vehicles. Where drivers are required to exit their vehicle, they should wash or sanitise their hands before handling any materials.	1	4	4	Piling Foreman	Piling Foreman
								Delivery drivers to be made to print operatives name on any paperwork or electronic delivery recording device and then email copy to Green Piling.				Piling Foreman	Piling Foreman
8	Contaminated Hands – through transmission of COVID-19	✓	✓	✓	4	4	16	Allow regular breaks to wash hands	1	4	4	Contracts Manager	Piling Foreman
								Provide additional hand washing facilities				Mulbury	
								Ensure adequate supplies of soap and fresh water are readily available and kept topped up at all times.				Mulbury	Piling Foreman
								Provide hand sanitiser (minimum 60% alcohol based) where hand washing facilities are unavailable.				Mulbury	Piling Foreman
								Regularly clean the hand washing facilities.				Mulbury	Piling Foreman
								Provide suitable and sufficient rubbish bins for hand towels with regular removal and disposal.				Mulbury	Piling Foreman
9	Toilet Facilities – through transmission of COVID-19	✓	✓	✓	4	4	16	▪ Restrict the number of people using the toilet facilities at any one time and use signage advising on maximum users at any one time, 2m (6ft) social distancing.	2	4	8	Mulbury	Piling Foreman
								▪ Wash or sanitise hands before and after using the facilities.				Piling Foreman	Piling Foreman
								▪ Enhance the cleaning regimes for toilet facilities, particularly door handles, locks and toilet flush.				Mulbury	Piling Foreman
								Portable toilets should be avoided wherever possible, but when in use these should be cleaned and emptied more frequently.				Mulbury	Piling Foreman
								Suitable and sufficient rubbish bins for hand towels with regular removal and disposal.				Mulbury	Piling Foreman
10	Canteens and Rest Areas – through transmission of COVID-19	✓	✓	✓	4	4	16	Capacity of each canteen or rest area should be clearly identified at the entry to each facility, and where necessary attendants provided to supervise compliance with social distancing measures.	2	4	8	Mulbury	Piling Foreman
								Staggered break times to reduce congestion and contact at all times.				Mulbury	Piling Foreman
								Hand cleaning facilities or hand sanitiser should be available at the entrance to any room where people eat and should be used by operatives when entering and leaving the area.				Mulbury	Piling Foreman

								A distance of 2m should be maintained between operatives.				Piling Foreman	Piling Foreman
								Where possible, operatives should bring their own food. They should also be required to stay on site once they have entered it and avoid using local shops.				Piling Foreman	Piling Foreman
								All rubbish to be put straight in the bin and not left for someone else to clear up.				Piling Foreman	Piling Foreman
								Enhanced cleaning of all facilities throughout the day and at the end of each day.				Mulbury	Piling Foreman
11	Changing Facilities, Showers and Drying Rooms – through transmission of COVID-19	✓	✓	✓	4	4	16	Capacity of each facility should be clearly identified at the entry to maintain a distance of 2m.	2	4	8	Mulbury	Piling Foreman
								Staggered start and finish times to reduce congestion and contact at all times.				Mulbury	Piling Foreman
								Enhanced cleaning of all facilities throughout the day and at the end of each day.				Mulbury	Piling Foreman
								Provide suitable and sufficient rubbish bins in these areas with regular removal and disposal.				Mulbury	Piling Foreman
12	Safe use of MEWPS – through transmission of COVID-19	✓	✓	✓	4	4	16	Only 1 person be allowed in man basket at any time.	1	4	4	Piling Foreman	Piling Foreman
								Gloves to be worn at all times.				Piling Foreman	Piling Foreman
								All plant and equipment should be assigned to one person, this person can only use the plant or equipment until it has been cleaned.				Piling Foreman	Piling Foreman
13	Operators Swapping Between Plant and Equipment – through transmission of COVID-19	✓	✓	✓	4	4	16	Gloves to be worn at all times.	1	4	4	Piling Foreman	Piling Foreman
								All plant and equipment should be assigned to one person, this person can only use the plant or equipment until it has been cleaned.				Piling Foreman	Piling Foreman
14	Site meetings – through transmission of COVID-19	✓	✓	✓	4	4	16	Only absolutely necessary meetings to be held with only absolutely necessary participants in attendance.	1	4	4	Mulbury	Contracts Manager
								2m (6ft) social distancing maintained throughout.				Mulbury	Contracts Manager
								Rooms should be well ventilated with windows open				Mulbury	Contracts Manager
								Consider holding meetings in open areas where possible.				Mulbury	Contracts Manager
15	First Aid – through transmission of COVID-19	✓	✓	✓	4	5	20	In the event of an accident occurring where the IP requires first aid: ○ The time for which the 2m (6ft) social distance isn't maintained is to be kept to a minimum. ○ Skin to skin contact is to be avoided. ○ First aider and IP to wear eye protection, masks and gloves. ○ Re-usable PPE is to be thorough cleaned after use. ○ Single use PPE is to be disposed of so that it cannot be reused.	1	4	4	Mulbury	Contracts Manager
								Emergency services to be called in the event of an emergency.				Mulbury	Contracts Manager
								In non-emergency, anyone who takes ill to be picked up by somebody from the same household or taxi if they are unable to get home/ to hospital safely on their own.				Mulbury	Contracts Manager
16	Piling Rig Operator – through transmission of COVID-19	✓	✓	✓	4	4	16	All plant and equipment should be assigned to one person, this person can only use the plant or equipment until it has been cleaned. Clean cab and access handles upon entry and regularly.	1	4	4	Piling Foreman	Piling Foreman
								Clean any compartments handles, controls etc prior and after use inside the cab.				Piling Foreman	Piling Foreman
								Wear gloves				Piling Foreman	Piling Foreman
								Lock cab when not leaving unattended.				Piling Foreman	Piling Foreman
								Operator effectively isolated within the confines of his cab				Piling Foreman	Piling Foreman
								Maintain social distancing measures 2m when carrying out daily maintenance				Piling Foreman	Piling Foreman
17	Piling Banksman – through transmission of COVID-19	✓	✓	✓	4	4	16	All plant and equipment should be assigned to one person, this person can only use the plant or equipment until it has been cleaned.	1	4	4	Piling Foreman	Piling Foreman
								Tasks are carried out by the piling banksman without any other person involved, maintaining 2m social distancing.				Piling Foreman	Piling Foreman
18	Piling Concrete Operative – through transmission of COVID-19	✓	✓	✓	4	4	16	All plant and equipment should be assigned to one person, this person can only use the plant or equipment until it has been cleaned.	1	4	4	Piling Foreman	Piling Foreman

								Clean any compartments handles, controls etc prior and after use of plant and equipment				Piling Foreman	Piling Foreman
								Concrete operations are carried out by the concrete operative without any other person involved.				Piling Foreman	Piling Foreman
								Concrete delivery driver sat in their cab or other safe positions, maintaining 2m social distancing throughout				Piling Foreman	Piling Foreman

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5 Harm Certain to Or Frequently Occurs	1 Slight Injury

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

Green Piling Ltd risk rating system is designed to give a realistic assessment of the level of risk to be used in assessments which along with the controls and precautions gives information to be measured during reviews.
Safety meetings and investigations and audits give opportunities for risk levels targeted to be reduced and for levels of likelihood and severity to be re-assessed and actions planned as result.
Generally high-risk ratings equal to or greater than 12 (red) are not acceptable and actions should be taken to reduce risk to low risk 6 or less (green)
Where possible preference should be given to reducing likelihood rather than severity e.g. reduce chances of impact with body rather than using body armour to protect body.

ACTIVITY – ENVIRONMENTAL ASSESSMENT

ITEM	WORK ACTIVITY & HAZARD	INITIAL LEVEL OF RISK			PRECAUTIONS/ CONTROLS TO REDUCE RISK	REIDUAL LEVEL OF RISK			Who provides The Precautions Controls	GP Person Who Check Precautions Have Been provided
		Likelihood	Severity	Risk Rating		Likelihood	Severity	Risk Rating		
1	Mobilisation & Deliveries Delays caused by blocking roads. Potential for noise and disruption to local community particularly during early deliveries to avoid peak traffic. Contamination of highways and surface drains if vehicles or plant being transported are not cleaned prior to leaving site. Fuel consumption and exhaust emissions.	3	3	9	Considerate driving and parking – large vehicles parked up clear of site and only brought in when vehicle can be accommodated on site.	2	3	6	Piling Foreman	Piling Foreman
					Neighbour notifications and planning around busy times.				Mulbury	Piling Foreman
					Wheel washes and cleaning down plant prior to transport if required.				Mulbury	Piling Foreman
					Use low emission fuels, ADBLUE. Switching vehicles off when not in use.				Contracts Manager	Piling Foreman
2	Piling Operations Generation of large volumes of spoil. Likely for some of the spoil to be contaminated. Particularly on brownfield/ reclaimed land which may need to be treated as hazardous waste.	3	3	9	Choice of work method to minimise spoil generation.	2	3	6	Contracts Manager	Piling Foreman
					Correct disposal route; some spoil can be re-used provided any contaminant is separated.				Mulbury	Piling Foreman
					Ensure type of ground to be encountered on site has been ascertained. If contaminated set up safe regime to deal with.				Mulbury	Contracts Manager
3	Concrete Pumping Large volumes of raw materials to produce concrete. Concrete pumping may cause pollution of drains and watercourses, particularly when w\shing down wagons and pumps. Concrete blockages occur and concrete is ejected across site. Washing Out Ready-Mixed Concrete and Clearing Out Pump and Concrete Delivery Hoses at End of Shift. Use of water within concrete plant – wetting down mix & cleaning down drum and pump.	3	3	9	Reduction at design stage; accurate ordering; mix design and site set up to minimise blockages. Careful placing of concrete to avoid unnecessary spills.	2	3	6	Contracts Manager	Piling Foreman
					Positioning equipment away from watercourses; provision of wash out skips or other bunding away from watercourses and surface water drains.				Piling Foreman	Piling Foreman
					Install a protective bund to prevent wate/ slurry from entering watercourse.				Mulbury	Piling Foreman
					Maintenance of plant and equipment; protection of hoses from damage and containment of hose burst.				Piling Foreman	Piling Foreman
					Good water connections and hoses in good condition, switch off water supply when not being used.				Piling Foreman	Piling Foreman
					Sending excess concrete back to batching plant. Placing in designated area to allow the concrete to cure without polluting the ground or watercourses.				Piling Foreman	Piling Foreman
4	Mobile Plant Operations Exhaust emissions; black smoke if plant is poorly maintained. Rigs use large volume of fuel during operation. Noise and vibration nuisance when working in urban areas.	4	2	8	Plant to be kept in good working order; service of plant.	2	2	4	Contracts Manager	Piling Foreman
					Reducing noise levels from all plant where possible; switching off plant when not in use; avoid long idle times; all plant to be fitted with efficient silencers if practical.				Contracts Manager	Piling Foreman
					Assess likely impact on local environment.				Mulbury	Contracts Manager
					If necessary, warn neighbours of extent of works.				Mulbury	Contracts Manager
					Restricted hours of operation to be observed.				Piling Foreman	Contracts Manager
5	Storage and Use of Fuels and Oils Pollution of water courses, drains and sewers through accidental spills, hose bursts and poor storage.	3	3	9	All lubricants to be stored within storage cabin when not in use, overnight and at weekends.	1	3	3	Piling Foreman	Piling Foreman
					Bunded Diesel bowser to be lockable. To be locked outside site hours and when not in use.				Piling Foreman	Piling Foreman
					Spill kits are available on site.				Piling Foreman	Piling Foreman

6	Poor Storage and Handling Waste Waste being mixed or sent to incorrect landfill. Leaching into ground and entering drains and watercourses. Damage to plants/ animals, unsightly windblown rubbish.	2	2	4	Segregation of waste and recycling.	1	1	1	Mulbury	Piling Foreman
					Site waste management plans, use of licensed disposal routes.				Mulbury	Piling Foreman
					Provision of suitable waste containers.				Mulbury	Piling Foreman
					Housekeeping.				Piling Foreman	Piling Foreman
7	Handling of Materials, Over Ordering and Stock Control Excess waste to landfill. Materials becoming damaged and unusable.	2	2	4	Order correct amounts of materials; avoid accepting incorrect deliveries; avoid double handling.	1	2	2	Contracts Manager	Piling Foreman
					Re-use/ recycle materials, segregation of waste.				Piling Foreman	Piling Foreman

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MANUAL HANDLING – GENERAL MANUAL HANDLING ACTIVITIES DURING PILING WORKS

Task involves the offloading and moving equipment and materials around site. Includes concrete hoses, sections of auger, reinforcement cages, bags of auger bungs, tools etc.

Duration of task – 4 to 8 hours

Load Considerations				Notes	**Control Measures**
Uneven distribution of weight	✓	Bulky / unwieldy	✓	Lacerations and crush injuries to hands, fingers, legs and feet whilst handling loads. Long cages can flex whilst being carried which can result in imbalance. 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 and reinforcing cages. Operatives to consider the task at hand and plan ahead regard to reducing carrying distances through positioning/ storage of materials adjacent to work area. Handling of light – medium weight loads will be subject to on-site assessment by Foreman and Operatives. Completion of manual handling training – use good lifting techniques and awareness of own limitations. Plan the lift to ensure the route is clear of all hazards. Ensure ground is scraped and kept firm and level. Make sure load can be handled effectively – check stability and centre of gravity before lifting, moving. Wear protective gloves at all times. Take into consideration the weather conditions (ice etc). Ensure task lighting is available and operational. Check for shadow areas for trip hazards. 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 head height of if the body twists. Significant stooping and twisting when carrying loads. Moderate/ high forces are exerted to move loads. 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.	
Twisting	✓	Repetitive handling			
Stooping	✓	Carrying distances (10m+)	✓		
Reaching above head height		Lifting from floor level	✓		
Frequent/ prolonged physical effort		Large vertical movements			
Work organisation / pace		Force exerted	✓		
Poor coordination, communication and control?		Insufficient rest			
Individual Factors				Notes	
Unusual strength / height required		Risks 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 principal contractor.	
Variations in levels? (steps/slopes)	✓	Poor lighting?	✓		
Extreme heat / cold?		Postural constraints			
Uneven ground?	✓	Dust and fumes			

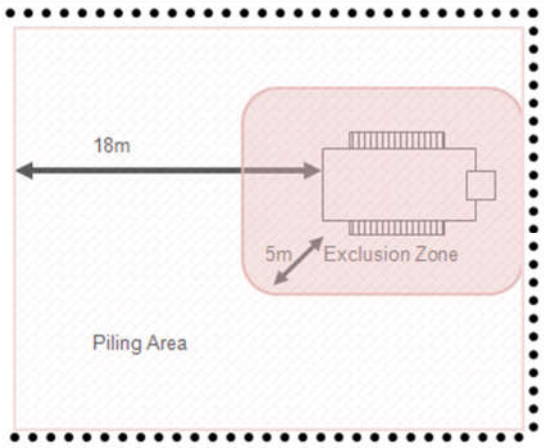
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COSHH ASSESSMENT

Minimal risks are associated with these substances during normal use/ operations. The controls that have identified are adequate for the type of work and the quantity/ nature of the substances encountered. Products are generally used outdoors or in areas where good ventilation is not a problem, therefore it is unlikely that exposure limits will be exceeded during normal use, or in the event of an accidental release. **Where products are being used in a manner different from the way described, a separate risk assessment will be needed.** (Individual product specific assessments are undertaken and recorded for all Green Piling operations and are available on request.)

COSHH Ref	Substances	Hazard Classifications	Where Found	Risks to Health & Environment	Precautions
18/41	Cement/ Readymix Concrete		Forming of piles.	• Irritant and corrosive properties, especially when wet, towards the skin and eyes. • Prolonged and repeated exposure to wet cement may also lead to dermatitis developing. Prolonged and repeated exposure to cement dust may lead to bronchitis. • Swallowing of small amounts during normal handling is not likely to cause harmful effects; swallowing large amounts may cause nausea, diarrhoea and vomiting.	• FOLLOW MANUFACTURERS INSTRUCTIONS. • ALWAYS READ THE LABEL. • Contact with skin any eye to be avoided by wearing impervious protective clothing, including overalls with long sleeves and long trousers. • Safety glasses must be worn to protect from splashes. • If mixing cement by hand, wear respiratory protection with min standard of FFP3. • Airborne dust should be prevented by only opening bags/ bottles when needed and by not shaking bags/ bottles to completely empty them. • Use powder mixes in well ventilated areas. Wear respiratory protection when mixing large quantities or working areas of poor ventilation.
21	Prima Pump		Priming of concrete lines.	• Slight irritant properties towards the eyes and may lead to redness and stinging. • Swallowing if large may result in localised burning.	
6	Gas Oil and Exhaust Fumes		In all plant.	• Inhaling vapours and exhaust fumes can cause irritation of eyes and respiratory tract; headaches and convulsions. Effects are generally short term and should disappear when clear of source of exposure. • Prolonged or repeated contact with skin can cause de-fatting and in some cases dermatitis. • Prolonged exposure to exhaust fumes, could lead to coughing and breathlessness. • Ingestion will lead to irritation of the mucous membranes, throat and stomach, nausea and vomiting. Liver and kidney damage is possible. • Pollution of ground, drains and watercourse.	• Turn off engines when not required. • Do not breath vapours – all re-fuelling to be carried out in well-ventilated areas, preferably outdoors and way from sources of ignition. Funnels should be used. • Store in well ventilated areas away from heat sources. • Store in bunded bowsers or jerry cans. Drums must be stored upright in a bunded area. Spill kits close to hand. Don not allow to enter water supplies or soil. • Do not eat or smoke in areas where there is likely to be exposure. • Employ good hygiene practices. • Site powerpacks in well ventilated areas. Use mechanical ventilation and/ or tail-pipe filters when working in poorly ventilated areas.
17	Spray Paint		Marking pile location and reinforcement.	• Can cause asphyxiation, and irritation to respiratory system, skin and eyes when used in areas with poor ventilation. • Repeated & prolonged exposure to the propellant can result in de-fatting of the skin. • Paint poses more of a fire risk than health risk. Highly toxic acidic fumes evolve if exposed to fie.	• Pressurised containers – Don not use in close proximity to sources of ignition. To be carried out in well ventilated areas by authorised persons only. • Wear gloves to prevent paint coming into contact with skin. • Do not inhale aerosol mist.
2	Grease	**Not classed as hazardous**	Moving parts of machinery.	• Continuous and prolonged exposure to grease may cause irritation of the skin	• **FOLLOW MANUFACTURERS INSTRUCTIONS** • **ALWAYS READ THE LABEL** • **ALWAYS STORE IN ORIGINAL CONTAINERS** • Keep away from heat sources, open flames and other sources of ignition. • Spill kits and drip trays should be accessible and used. • Prevent oil especially waste oil from contacting the skin. PVC gloves must be worn when handling oil. • Employ good hygiene practices – regularly washing the skin with warm soapy water, and drying skin afterwards. • To be stored in bunded area. Funnel to be used when decanting. • DO NOT pour waste chemicals down drains.
4	Hydraulic Oil	**Not classed as hazardous**	In all plant.	• Minor risks associated with normal use. Inhalation of mists may cause irritation. • Risk of injection injuries when pressurised hydraulic system leaks or bursts.	
3	Engine Oil	**Not classed as hazardous**	In all plant.	• Negligible hazard at ambient temperatures; Hot oil may produce irritant fumes. Negligible hazard if ingested. • Prolonged or repeated exposure of the skin may lead to mild irritation. • Slightly irritating to the eyes but does not injure eye tissue. • Chronic exposure to used oil may lead to the production of skin tumours.	
30	Mould Oil		Testing equipment and plant.	• Contact with eyes may cause irritation and smarting. May cause discomfort if swallowed. • Not considered to be an environmental hazard however contamination of watercourses or spoil should be avoided.	
35	Two Stroke Oil	**Not classed as hazardous**	Adding to fuel for two stroke engines	• Prolonged or repeated exposure of the skin may lead to mild irritation. • May support combustion in a serious fire. • Not considered to be an environmental hazard however contamination of watercourses or spoil should be avoided.	
42	AdBlue	**Not classed as hazardous**	Additive for diesel engine.	• Not classed as a health hazard however contact with the eyes may cause irritation and smarting. May cause discomfort if swallowed. • Prolonged or repeated exposure of the skin may lead to mild irritation.	

PILING AREA VISITOR INDUCTION & RULES	
1	Green Piling Foreman is directly responsible for the safe operations under his control within the piling area on site including any visitors to the piling area. Unless it is necessary to do so it is important that no one should enter the piling area. It is accepted that some persons other than the piling crew may want or have cause to enter the piling area such as Site Managers, Setting Out Engineers, Testing Technicians or Green Piling Supervisors, Fitters or Advisors. This advice and control is necessary to ensure their safety in this area.
2	**VISITORS TO SITE**
2.1	Report every day to Mulbury to either undergo site induction or to sign in and receive updates.
2.2	Observe all rules and instructions received.
2.3	Minimum PPE required on site safety helmet, boots, hi-vis vest/ jacket and ear defenders.
2.4	Ask for Green Piling Foreman and you will be directed via safe route to piling area. Mulbury may indicate piling area or it should be assumed that piling area is 18m from any part of piling rig or any physical barriers closer.
2.5	Working 6m from piling rig is the MADATORY hearing protection zone.
3	**APPROACHING PILING AREA**
3.1	EVERY TIME ENTERING PILING AREA THE FOLLOWING MUST BE OBSERVED WITHOUT EXCEPTION.
3.1.1	In no instances should other work be undertaken within the piling area whilst rig is moving or without controls. Either rig will stop or you must ask Piling Foreman and/ or Mulbury to erect a segregation barrier.
3.1.2	From outside of the piling area, attract the Rig Operator or Banksman's attention and wait until operations and all rig movements have stopped and you are directed to approach closer.
3.1.3	Discuss with the Foreman your requirements.
3.1.4	It is expected that rig movement will not re-commence until you have safely left the piling area.
3.1.5	Piling Foreman may give you permission for you to observe or take measurements only and will indicate where you are to stand which should in all cases be in direct line of site of Rig Operator in front and at least 5m from rig cab. Stop operations by raising your hand should you observations deem it necessary.
3.1.6	It is important that the Piling Foreman knows that you are leaving piling area. Let them know.
3.2	**Ask yourself if you need to be in piling area? If yes does the rig need to be operational?**
4	**EXLUSION ZONE**
4.1	All works will stop if persons other than piling crew enter exclusion zone closer than either a physical barrier or 5m from any part of rig.
4.2	Persons not following the above procedures and entering the exclusion zone will be reported to Mulbury for disciplinary action.
4.3	
4.4	Rig Operator will have copies of these induction rules and it is expected that Mulbury will issue rules where appropriate. Piling Foreman will keep record of induction.

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RECORD OF VISITOR INDUCTION

By signature below we accept and understand requirements of piling area induction and rules and agree to observe requirements.

Print Name	Date	Company	Entering Piling Area To -	Rig to Stop	If no how will rig movement be controlled	Signature
Anne Example	12/06/2020	Pile Testing Ltd	Prepare Piles	~~Y~~ / N	Erect barriers to segregate piles plot 17.	A Example
Anne Example	15/06/2020	Pile testing Ltd	Test Piles	Y / ~~N~~	Rig will stop during testing within 6m.	A Example
				Y / N		
				Y / N		
				Y / N		
				Y / N		
				Y / N		
				Y / N		
				Y / N		
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