



Mayo Civil Engineering Ltd, UNIT D, Rochdale Central Ind. Est. OL11 4HS

METHOD STATEMENT ADDENDUM

Principal Contractor: DOMIS CONSTRUCTION

VIADUX

**‘Rising Elements Decking and High-Level Propping’ RaMS
Addendum Nr. 1b.1 – 23rd April 2021**

ARCH OPENING WORKS TO FACILITATE TOWER CRANE

**Contract Number BC200
Addendum to: Rising Elements RaMS
Original of: 18th March 2021
Addendum Nr. 1b.1 / REV B – 23rd April 21**

Author:

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**STEWART SCOTT
OPERATIONS DIRECTOR**

DATE OF THIS ADDENDUM: 23rd April 2021

COMPLETED BY: STEWART SCOTT

TASK/TITLE OF WORKS: 1b.1

ARCH OPENING WORKS TO FACILITATE TOWER CRANE

Introduction/Scope of Works

1. This document is Addendum Nr 1b to the original 'Rising Elements' RaMS Issue made on 18th March 21. RaMS submissions are not intended to be referenced as a technical installation guide. Supporting structural permanent and temporary works designs will be issued 'for construction' dealing with the designed and calculated technical detail. This RaMS Addendum submission sets out proposed safe systems of working and safe operating procedures which result from risk assessment of the task/(s) in hand. At any point, working practices and risk management controls will adhere to those set out in the main body of the associated Method Statement where works are related or similar.

SLHA Conservation Strategy

2. **NOTE:** All works will be undertaken in accordance with the protection works as recommended within the SLHA Conservation Strategy report 26.8.2020. Section 3.3 Protection works will be wholly complied with.
3. As brickworks are exposed and penetrated, brickwork removed will be logged, palletised and stored safely until required. The DOMIS Construction Site Team will make provision for a safe storage area and advise/collaborate with Mayo Civils with regards to logging, and storage.

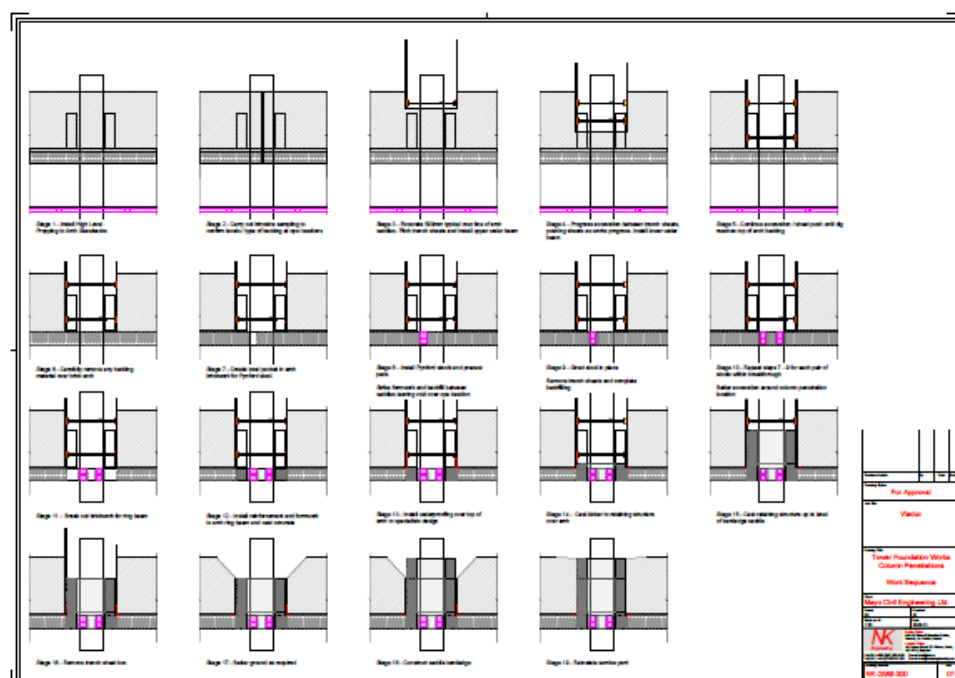
Key Reference designs referenced, initially, in the review and preparation of this safe system of work.

NK Engineering (Mayo)	NK-2586-201	Tower Crane Ope
NK Engineering (Mayo)	NK-2586-202	Column Ope
NK Engineering (Mayo)	NK-2586-203	Ope Steelwork Fabrication
Renaissance	02100	Viaduct Penetration Plan
Renaissance	90020	Tower Arch Opening Works Plan
Renaissance	90021	Tower Arch Opening Works Outline Construction

Continued Covid 19 Awareness, Vigilance and Risk Management Controls

4. Covid 19 management and mitigation measures are well documented in existing associated RaMS and the Mayo Team will continue to exercise awareness, vigilance and compliance with site rules and developing Government advice. Timely reminders to the Mayo Team will be given in daily task briefings regarding vigilance, awareness and compliance with Social Distancing controls. The key messages being sanitise regularly and reinforcing the requirement that where it is possible that workers can remain and work effectively 2 meters apart, they should. The following 'key' activities are considered in relation to social distancing guidelines;
 - **General labouring / Handling of Formwork** : No significant issues are perceived in maintaining a 2m working distance and maintaining Social Distancing.
 - **Plant Operations (Trial Holes)**: No significant issues are perceived in maintaining a 2m working distance and maintaining Social Distancing Controls. Operators work from the cab and groundworkers/banksman will maintain 2m Social Distancing.
 - **Steelfixing**: No significant issues are perceived in maintaining a 2m working distance and maintaining Social Distancing Controls.

- **Concreting and Pkering:** No significant issues are perceived in maintaining a 2m working distance and maintaining Social Distancing Controls
 - **General:** The Mayo Team will be encouraged and coached to work with vigilance and awareness in maintaining Social Distancing Controls. In the event that a 2m Social Distancing control cannot be achieved, One-metre plus (1+), mitigating measures to be applied. One-metre plus (1+) involves keeping one metre apart, plus other mitigations such as wearing face coverings, working side-to-side rather than face-to-face and continued regular use of hand sanitizer to reduce the potential of transmission
5. Already set out in approved RaMS, temporary propping beneath the arches to be installed in accordance with 'safe systems of work set out in 'Rising Elements – Decking and High-Level Propping' issued 18.3.21. Such will include the barrel soffit formwork below the arches install.
 6. Externally, DOMIS to install site hoarding at service yard level and update their Traffic Management Plan which will incorporate arrangements for receiving deliveries of equipment, plant and materials.



NK-2586-300 Tower Foundations – Works Sequence – Replicated for Indicative Purposes. Mayo Site Team will always work to 'For Construction' Issue and supported by a Design Check Certificate.

Services location and avoidance / permit to break ground.

7. DOMIS to issue a permit to break ground and the Mayo Supervisor to maintain an overseeing role to continue to work in accordance with permit controls.
8. Known and charted services information will be provided to the Mayo Team by the DOMIS Management Team as part of the permit to break ground process.
9. Mayo Engineer to mark out the extent of the dig/(s). **NOTE:** Excavating over the arches at the column opening locations to be carried out in a 'hit and miss methodology as per the structurally designed methodology with no more that 4 nr. columns being exposed locally at any one time.
10. Excavations will be instigated taking into consideration the potential for redundant, live and potentially unknown services and services location and avoidance strategies.
11. The utilisation of CAT and Genny detection will continue throughout the trial hole digs. Utilising the 'Radio detection' **eCAT4+** with StrikeAlert™, this is the **Depth** and Data-Logging model storing the complete daily usage of the instrument along with providing an accurate **depth** reading when used with

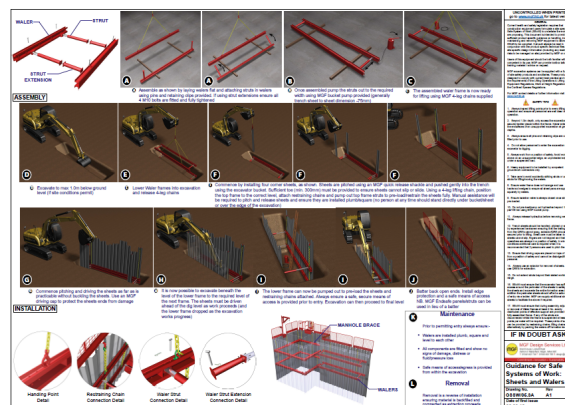
a Genny4. This will assist in the determination of electrical services depths.

12. Prior to digging close to identified services, safe digging distances should be checked. Machine drivers are aware that digging by excavator is prohibited with 0.5M of an electrical cable. In the event that prior controls fail and a cable is struck, drivers are instructed to stay in the cab. When cleared to leave the cab, they should jump clear from the cab and not climb down the machine.
13. Within such areas, non-machine work should be instigated i.e., soil picks or hand digging where soil picks may not be available or accessible.
14. Where hand digging can be avoided by introducing the use of air soil picks around services, these shall be utilised as an alternative to hand tools. This will reduce the risk to Operatives and potential damage to services. Although not limited to, a typical mode would be the MBW SP125, commonly available from our preferred hire partner, Speedy Services. This safe alternative to traditional tools, reduces the potential to damage pipes and cables during excavation work and reduces the risk of injury to backs and shoulders from manual digging. The soil pick is lightweight and can be used for extended periods without fatigue. The soil pick has a non-conductive, non-sparking barrel to enable it to be used in all environments.
15. The control of trial-hole excavations and hand digging / air picks will be utilised in any event that uncharted services may be suspected or identified.

Excavation and proprietary protection

[NK Engineering - 2586-300 - Stages 1-7]

16. Utilising an excavator, (13, 21 or 22t.), as deemed suitable to the task in hand by the works supervisor, guided by a banksman, careful excavation will be undertaken, followed by the installation of sheet and waler support (as per NK Engineering NK-2586-300. The installation of sheets and waler support will follow the technical guidance of our chose supply chain partner, either MGF, Conquip or Megashore.



MGF safe system of work for sheets and walers replicated for exemplification purposes only.

17. Continue excavation /sheet push util dig reaches top of arch backing.
18. Arch brickwork to be exposed which will facilitate a clear view of the scope, condition and facilitate a member of the Engineering Team to set out the location of 4 Nr. Pynford stools and new arch ring beam.
19. Utilising a TE706 - AVR breaker (or similar), giving significantly enhanced to protection to operators from vibration exposures, the break-out of mortar and brickwork as necessary to create pockets for Pynford stools and pads will be carefully undertaken.
20. Brick and mortar debris will be loaded into a certified lifting skip and utilising the excavator as a crane, lifted in accordance with the excavator as a crane risk management assessment and lift plan. (Lift plan to be determined following identification and sourcing of skip (model / load) etc by a member of our Appointed Person Team).
21. In breaking, account will be taken of HAV exposure and suitable management controls will continue to be exercised in accordance with the associated Risk Assessment for HAVS which will include Operative rotation (always ensuring that an Operatives would not be exposed to his finger on the trigger at or close to the Exposure Limit Value in a shift).

Hilti TE706 AVR				
				
HAV	Colour	EAV	ELV	Noise dB(a)
6.6m/s ²	ORANGE	69 mins	4hrs 35 mins	87

22. In accordance with established working procedures, documented safe systems of work and the associated coring and drilling/breaking into concrete/brick risk assessment, Operatives, breaking will don a dust mask with a Mayo civils minimum particle filter of FFP3. The Operative will have been face fit tested and certificated for the use of the specific RPE. In the event any Operative is selected who does not already have an appropriate fit certificate, this will be addressed prior to breaking duties being undertaken.

Hand Arm Vibration Syndrome (HAVs) Record Sheet & Guidance						
HAVs Record Keeping Log						
<i>"There is no legal requirement for continual monitoring and recording of vibration exposure. To do so is probably not good use of your or your employees' time, unless there are very specific circumstances". Source Health and Safety Executive (HSE), Guidelines about Vibration Exposure Monitoring.</i> Where a risk of exceeding a tool's Exposure Action Value (EAV) is present, this form MUST be used to record that Mayo Civils have informed employees of the risks involved and provided control measures deemed reasonably practicable. At no time should an employee be exposed to or exceed the Exposure Limit Value (ELV). There are 'key' Mayo pieces of work equipment in day-to-day use which have been monitored for a typical day/week use and these are excluded from continued day-to-day recording. Other equipment, drills, breakers, SDS combis, angle grinders etc. WILL.						
Operative Name	Operative Signature	Tool Used	Vibration Magnitude (M/S ²)	EAV Hrs/Mins	ELV - Hrs/Mins	Actions / Measures to Reduce Exposure Usage Limits / Job Rotation / Operative Rotation
N/A	N/A	SH TS 410 Cut Off Saw	3.3	4Hrs - 35mins	18 Hrs - 22 mins	N/A - Operative standard use will never exceed action value in a shift.
N/A	N/A	2" - 57mm HF Poker	4	3Hrs - 8 mins	12Hrs - 30 mins	N/A - The use of HF poker has replaced traditional poker use and reduced exposure to as low as reasonably practicable.
N/A	N/A	Makita 230 Circular Saws	3	5 Hrs - 33 mins	22 Hrs - 13 mins	N/A - Operative standard use will never exceed action value in a shift.
Date	Supervisor	Supervisor Signature				
Supervisor to complete the EAV & ELV times. Operatives to be made aware and sign to demonstrate they will adhere to controls.			It is essential to reduce operator exposure to the effects of vibration. Once EAV is reached, REMEMBER: just because a workers exposure is below the Exposure Limit (ELV), it doesn't mean you have complied with the law, or done enough to protect the workers health. Exposure MUST always be reduced to 'as low as reasonably practicable'.			

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Service Yard – Tower Crane Arch Penetrations – Proposed Safe Systems of Work.

- Works will continue to follow similar operating procedures sequences and risk management controls as those set out for Bifurcating columns in Addendum 1a Points 1 – 16.
- Once brickwork is exposed, Engineer will set out the location of steel needles to form 'Lobster Pot'.
- Using a core drill, core holes will be drilled through brickwork in needle locations.
- The 'Lobster Pot' frame will be prefabricated in a designated service yard location and then lifted by excavator and lowered into position from above through the pre-drilled core holes. (Lift plan to be determined following identification and sourcing of skip (model / load) etc by a member of our Appointed Person Team).
- From the working deck below the arches, the lower steel ring will be installed, with steelwork sections lifted onto the working deck by Telehandler / excavator and positioned using pallet trucks and/or bogeys (as was the upper-level propping sequence in the associated main method statement).
- Formworkers in attendance will install shutters around the vertical needles and grout to ensure they are bearing onto existing brickworks.

29. At service yard level above, suitable blinding will be cast above and fencing will be fixed to form a secure enclosure around the opening of the tower crane.
30. Excavation propping will be removed
31. Below, temporary propping and decking (Titan) will be struck in accordance with the associated Method Statement.

Point of work changes of a minor nature which may be encountered as a result of experiences at the workplace

32. This method statement addendum is a live working document and may be subject to amendment/dynamic assessment as works continue to progress. Should any works be identified which are not covered by this addendum or the associated main Method Statement, the Mayo Civils Project Team will liaise with the Mayo Civils Health and Safety Advisor and a timely revision will be produced and submitted. Where changes are deemed 'minor' in nature and the Mayo Health and Safety Advisor is not available, provision is made in **[Appendix 1]** Method Statement/minor sequence of work changes and **[Appendix 2]** 'point of work / last minute' Risk Assessments to be undertaken

Mayo Supervisors are to ensure that relevant Operatives are briefed, have read and continue to have access to Method Statements, Addendums, COSHH and Risk Assessments as detailed. In doing so, Operatives are always given the opportunity to clarify any points, queries or concerns with the Mayo Supervisor.

KEY RISK/COSHH ASSESSMENTS TO RE-BRIEF THE WORKS TEAM, REMINDING OF HEIGHTENED VIGILANCE AND AWARENESS

RA Code	Risk Assessment Document Title	Brief YES	COSHH Code	COSHH Title	Brief YES
PLANT.001	EXCAVATOR OPERATOR/ EXCAVATOR LIFTING		C004	CONCRETE – READY MIX	
PLANT.007	EXCAVATORS AND EXCAVATIONS		C005	PETROL	
LAB.003	GENERAL LABOURING & CONCRETE LABOURING		C009	PRODUCTS CONTAINING RCS	
LAB.004	WORKING WITH WET CONCRETE		C014	NON SHRINK GROUT	
STE.001	REBAR CUTTER / BENDER				
STE.003	STEELFIXING AND HANDLING OF REBAR.MESH				
FORM.006	FORMWORK / FALSEWORK ASSEMBLY & STRIKING				
FORM.007	FORMWORK / FALSEWORK SUPPLY, ERECTION AND COLLAPSE				
FORM.009	JOINERY / FORMWORKING OPERATIONS				
FORM.017	DRILLING/BREAKING INTO CONCRETE & BRICK				
FORM.018	MANUAL HANDLING OF FORMWORKING MATERIALS AND STEEL				
GROUND.002	EARTHWORK SUPPORT PROPRIETARY SYSTEMS				
GROUND.010	BURIED SERVICES (INCORPORATING TRIAL HOLE EXCAVATIONS)				
GROUND.025	HAVS				
GROUND.032	HAND- DISC CUTTING & SAW OPERATIONS				
COV.001	CORONAVIRUS MANAGEMENT				



Addendum to Sequence of Works (Minor)

Method Statement Title	
Date of Addendum	
Completed By	

Sequence to be Undertaken

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Additional Plant, Equipment, Tools and Materials to be Used

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Contracts Managers to ensure that relevant Operatives are briefed have read and continue to have access to Method Statements, Addendums, CoSHH and Risk Assessments as detailed. In doing so, Operatives are always allowed to clarify any points queries or concerns with the Mayo Supervisor.

APPENDIX 2	Project		Date		MAYO CIVILS
	Task		Work Supervisor		

Mark Each Hazard / Activity as Appropriate					
					
Work at Height		Hand Tools		Hot Works	
					
Confined Space		Third Party Interface		Hydraulic Systems	
					
Lifting Operations		Housekeeping		Edge Protection	
					
Moving Plant		Buried Services		Temporary Works	
					
Manual Handling		Flammable Substances		Excavations	
					
Electrical Systems		Hazardous Substances		Labouring	

How Might These Hazards Cause Harm?	Hazard Control Measures
Methodology (key steps to take)	

Risk Assessor's Printed Name		Sign	
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Attendees, please sign to confirm that the findings of this risk assessment were clearly stated.		
1:	2:	3:
4:	5:	6:
7:	8:	9: