



John Perkins Construction Ltd
Unit 22 Dragon court
Crofts end road
Bristol
BS5 7XX

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Retaining wall works

For

Project: Newport Transporter bridge visitor centre
Brunel st
Newport
NP20 2JY

JPC Project Number: 2406

Commencement: 18/07/2022 **Completion:** Second half of 2024

Rev: 4, red items updated **Dated:** 1-5-24

Prepared by: Dwaine Henderson **Date:** 15 June 2022

Approved by: *R Perkins* **Date:** 15-6-22

Rupert Perkins

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1. CONSTRUCTION HEALTH & SAFETY PLAN

This Construction Phase Health and Safety Plan has been prepared specifically for this project in accordance with The Construction Design and Management Regulations 2015 (CDM 2015). It should be read in conjunction with The Pre Construction Information (Appendix - A) provided by the CDM Advisor: Mark Wilson or MSAFE Risk Management Limited Dated: April 2020.

2. DESCRIPTION OF THE PROJECT

The project is located at: Brunel St, Newport. NP20 2JY

The site is located on both banks of the River Usk. The Visitor Centre is located on the Southern Distribution Road (SDR) or A48. The eastern approach to the bridge is via Stephenson Street, Newport passing the Orb Steel Works.

The visitors centre works involve the construction of a new visitors centre. However, this CEMP is specific to the construction of the new retaining wall on the rivers edge.

This will involve the installation of a piling matt, and installation of driven sheet piles to form a new wall.

Standard working hours for the project are 08:00am to 6:00pm, Monday to Friday



3. THE PROJECT TEAM

CLIENT

Newport City Council Civic Centre, Newport, Gwent. NP20 4UR
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Contact: Mike Lewis

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CDM PRINCIPAL DESIGNER

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4. MANAGEMENT ARRANGEMENTS

The Management of John Perkins Construction will take all reasonable practical steps so as to ensure the health, welfare, and safety of all its employees, contractors, visitors and others involved on the project with particular attention to: -

- The provision and maintenance of plant and systems of work that are safe and without risk to health.
 - Proper arrangements for the use, handling, storage and transportation of materials and substances.
 - The maintenance of premises and places of work, which are safe to all persons.
- The details of the project's management structure and the assignment of responsibilities amongst the various organisations involved are as detailed within The Construction Design and Management Regulations 2015 (CDM 2015).

Our Project Organogram (Appendix - B) outlines the names of the individuals associated with the project and this will be updated during the course of the project to reflect current arrangements, and the current version of the Project Organogram will be placed on all Site Notice Boards.

John Perkins Construction Ltd are the Principal Contractor for the visitors centre works..

5. HEALTH & SAFETY PRINCIPLES & OBJECTIVES

Our Site Manager will be responsible for maintaining Health and Safety Standards on site on a day-to-day basis and the project will be monitored and audited on a monthly basis by our independent external H&S assessors, BSG.

All BSG Audits (sample Appendix - C) received will be circulated to project stakeholders, whereby issues identified are actioned for close-out and to prevent a reoccurrence.

We will advise via our monthly Contractor Project Report (Appendix - D) on the status of our safety audits together with any other correspondence or contact made by the Health and Safety Executive "HSE" or any other regulatory body.

Our Site Managers will be appropriately qualified and trained to the CITB Site Managers Safety Training Scheme "SMSTS" and all site operatives, contractors and subcontractors will be required to be qualified to the appropriate Construction Skills Certification Scheme "CSCS" level.

All accidents, incidents, occurrences will be recorded on our 'Incident report form' (Appendix E) in line with our incident and near miss procedure (Appendix F).

Any incidents recorded will be investigated and closed out, and a copy of the report forwarded to the CA. The "HSE" will be notified of any occurrence covered under "RIDDOR".

The provision of the required First Aid Kit and equipment will be located in the Site Office and in other Site Welfare Facilities as deemed appropriate and our Site Manager will be responsible for maintaining the required levels of items and for ensuring that the First Aid Kits are replenished. This will be as detailed on our site logistics plan. Our Site Managers will hold the required accredited First Aider qualification and this will be posted in all our welfare facilities to inform site personnel of the designated individuals together with contact numbers.

Our Site Welfare Arrangements will comply with schedule 2 of the CDM Regulations 2015, and will comprise of a site office with meeting room, a site canteen, and a site toilet block with shower area.

The site setup, logistics, first aid point, fire points, muster point, and welfare layout will all be as per the site setup and logistics plans in Appendix G.

6. SITE SETUP

Parking

Site parking will be in the Mill st car park. There will be no parking for operatives available on site.

Welfare

Welfare will be set up as per the pvppmp, with office, canteen, and dual use toilets facilities with shower.

Water usage and waste

Water usage on site will primarily be for the site welfare facilities. Small amounts of water may be used from time to time for wet cutting operations on site as above, although these will not be significant. We utilise ECO welfare cabins wherever possible, with twin flushes on the WCs, and timed flushes on urinals.

Welfare arrangements will consist of 5x toilets, 4 urinals, and 4 sinks.

Urinals will be waterless, and sinks and toilets combined will have an estimated usage of 609L a week.

Waste water from the wc and welfare areas will be collected in a tank, and emptied at regular intervals for disposal offsite.

Security / hoarding / Otter protection

As appendix G and N.

Site perimeters will be set up as per the Logistics plan Appendix G, and the otter fencing report appendix N.

As per the report, the solid hoardings to the roadside have no gaps present, and have been assessed to be suitable to provide an otter barrier.

The fencing will be reviewed by an Ecologist prior to works commencing by TACP, with a report produced. A check will also be carried out on commencement for any evidence of otter activity, footprints etc. Ongoing fence inspections will be recorded on site through the project, and any defects addressed. Any further evidence of otter activity will be reported to the ecologist.

To the river side, again in line with the report produced by TAPC, any gaps over 200mm wide will be covered with steel mesh to ensure otters cannot access.

The site will be made safe and secure at the end of each day, with all fencing locked, and all excavations suitably protected. Any open excavations will also be provided with means of escape for any mammals that may fall into them. A wooden board or equivalent will be left to provide escape. All trenches and open pipes should be inspected at commencement of works each morning, to ensure no mammals have become trapped overnight.

Remotely monitored security cameras will be used on site to provide 24hr security coverage. Hay bales will be utilised at the highest point of the retaining wall to ensure any water runoff does not carry debris into the river.

Site hours

Working hours will generally be 8:00am to 6:00pm Mon to Fri. Saturdays if required will be 8:00am to 1pm. Sundays and bank holidays will be non working days unless by prior arrangement.

Site lighting

Temporary lighting will be installed to the welfare area and the new building where required to permit safe working. All lighting will be switched off at the end of each day to ensure wildlife is not disturbed.

Considerate constructors

The site will be registered with the considerate constructor's scheme. JPC have various controls in place to achieve the aims of the scheme, such as noise monitoring, waste management, and community outreach. The site manager, Hayden Pickett, will be nominated as the contact for CCS. Hayden has previously achieved a national site award with CCS.

Complaints procedure

As per our complaint's procedure, any complaints will be forwarded to our PR officer, Nicola Martin. Complaints will be logged, and investigated, and any remedial measures required will be carried out.

7. ENVIRONMENTAL / POLLUTION CONTROL AND CONTINGENCY

Emergency contacts and incident management

In case of an environmental emergency on the site, the NRW will be contacted immediately, on 0300 065 3000

The main site contact is Hayden Pickett: 07771 904283

The emergency services can be contacted on 999

In case of environmental spillage, the JPC spillage procedure will be followed (JPC 063, see appendix), please also see JPC Environmental emergency plan (JPC 018, see appendix)

Possible pollution sources:

Diesel and fuel
Plant leaks
Hazardous materials (paints etc)
Water runoff
Concrete washout
Deliveries
Dust / Smoke
Noise and vibration

Controls:

Diesel and fuel

Double banded and secured storage containers will be kept in the site storage area, away from the main works areas, as laid out in the PVPMP. Fire extinguishers will be available in the area, and drip trays will be utilised for refuelling. Spill kits will be available for use if required, in line with JPC spillage procedures.

Plant leaks

Storage will be in the designated storage area, as per the PVPMP. Plant and equipment on site will be inspected daily for leaks and rectified where required, to ensure no contaminants enter the water. In the event a leak is discovered, the vehicle will be taken out of the use until repaired, and the contaminated area will be removed.

Hazardous materials (paints etc)

Small amounts of hazardous materials such as paints may be required on the project. COSHH sheets will be procured and materials will be stored and disposed of in line with the recommendations. Any potentially Hazardous materials will be stored in the site storage area as per the PVPMP, and securely locked away.

Water runoff

For general runoff caused by rainwater, the works are not expected to cause anything additional to the existing situation, and water will largely soak away. Water falling onto the road areas will be taken away by the existing road drainage system. Haybales have been installed on the river line at the lowest point, to ensure any debris is captured and does not enter the water course, as marked on the PVPMP.

Concrete washout

Concrete washout operations are strictly into skips, for containment and disposal offsite.

Deliveries / wheel washing

Wheel washing facilities will not be required. Delivery vehicle areas and construction areas will be separated, with delivery vehicles restricted to the clean tarmac areas on site. Please see PVMP for buffer zone for delivery vehicles and storage. Vehicle mounted road brushes will be used as required to ensure that these areas remain clean.

Dust / Smoke

Dust spread will be eliminated by the use of wetting down for any cutting operations, although wetting down will be minimal and not cause any excess runoff. Where required, tarmac areas within the site will be washed down via a vehicle mounted road brush, to eliminate any dust that may have settled. There will be no smoke developed on site.

Noise and vibration

Noise and vibration will be monitored using the JPC internal monitoring forms.

For noise, db readings will be taken and logged, and action taken if action limits are approached or breached.

For vibration, during piling works vibration monitoring will be carried out, and assessed in line with the projects engineers' recommendations. There will also be monitoring in place for personnel vibration caused by hand tools etc.

UPDATED 15-1-24: Vibration monitoring carried out for the first section of the wall, closest to the bridge, proved that the vibration caused by the sheet pile works did not breach any of the pre-defined limited. As such, the second section of sheet piling, which is further from the bridge, is not deemed to need to be monitored. The vibration report from the initial sheet piling is contained in appendix R.

Buffer zones

See the PVPMP for buffer zones on site, for separation of fuel storage areas, delivery area, and main works area.

Waste management.

Waste areas will be set up as per the PVPMP. JPC use waste handlers with offsite separation capabilities, and usually achieve a recycling rate of circa 98%. We will also use waste segregation into different skips where possible.

Odour management

We do not anticipate any excessive odours to be emitted by the site works.

8. SPECIFIC METHODOLOGIES FOR THE RETAINING WALL WORKS

Please see appendix G for markups relating to the works.

During the works, a new retaining wall will be installed to replace the existing wall, which is failing in several areas. The new wall will be installed in two sections, as indicated. The first section will be installed during July / August 2022, with the second section being installed in July / August 2024. The works will be programmed to avoid the restricted river works season, which ends at the end of June each year. The works to the wall will last between 2 and 6 weeks.

The works will be carried out as below:

- The new sheet piled wall will be designed by Sheet Piling Uk, with assistance where required from Cambria. Calculations and drawings will be made available.
- As part of the site setup, a heras fence line will be erected to ensure no personnel can access the waters edge.
- Although personnel will not access the waters edge, RAMs will be prepared to cover water rescue and provision of lifejackets and rescue boat.
- Access to the area will be via the existing road into site, directly on to the new piling matt.
- A piling matt will be installed to carry the piling rig. Temporary works calculations will be undertaken to ensure the piling matt is correctly specified to carry the rig. The rig will sit a minimum 3 meters back from the existing wall edge, in order to ensure pressure is not placed on the existing wall.
- Once the matt and rig are in place, the piling works will commence. Sheet piles will be installed one at a time, 200mm in front of the existing wall, starting from the west end of the wall. Piles will be installed using low vibration methods, with monitoring of vibration available PLEASE SEE ABOVE NOTE ON MONITORING RESULTS TO THE FIRST SECTION OF WALL. The existing wall and handrail will remain in place whilst works proceed.
- The rig will move gradually across the first area to complete the piles, before being removed from site.
- Once the piles are completed, works will then commence to backfill as appropriate to complete the installation. The existing wall will be left in situ behind the new, so as not to cause further disruption during the removal.
- To the second half of the wall, sections of the piles will be in close proximity to the high spring tide line. Works will not be carried out during the high tide events.
- As before, the piling rig will access the piling matt from the road, being positioned at least 3 meters from the waters edge, and install the piles one at a time until completed.

9. COORDINATION & COMMUNICATION

John Perkins Construction Ltd under our Integrated Management System accreditations, ISO

9001:2008 Quality Assurance, 14001: 2004 Environmental , conduct various reviews, meetings, forums and workshops in connection with the maintenance of these standards wherein Health and Safety is seen as a priority agenda topic.

Individual projects together with the overall performance of the Company's projects are reviewed at Board Meetings, actions are identified where required, with these actions being cascaded to the relevant individuals.

Project Review Meetings are held monthly at site level with the complete JPC site team, and Commercial Director, wherein the specific issues of the project are reviewed and in particular the coordination and performance of Health and Safety matters on site. Actions are taken to address any shortcomings, and these are reviewed at subsequent meetings.

Project Team

Design Team Meetings are held throughout the project to ensure that design compliance is maintained and to ensure that issues that could affect the Health, Safety and Wellbeing of those affected by the project are removed or reduced to a manageable status. Required actions are issued and reviewed at subsequent meetings.

Client meetings are conducted at monthly intervals throughout the project, at this meeting we will issue to the meeting stakeholders our Contractor Project Report (Appendix D).

Arrangements for dealing with the issues highlighted are discussed and required actions are issued and reviewed at subsequent meetings.

An RFI schedule, along with an IRS, are maintained by the John Perkins Construction dropbox by the construction manager. These documents will be accessible by the whole project team and will be regularly updated to reflect the design and project progression. These documents will be reviewed at design team meetings.

Contractors and Subcontractors

On site Toolbox Talks and Supply Chain Progress Meetings are held by our Site Personnel with our contractors and subcontractors to discuss and agree Health and Safety and Site Design and progress requirements.

Arrangements for dealing with any issues highlighted are discussed and required actions are issued and reviewed at subsequent meetings.

Site coordination meeting will take place as required between the site management staff and subcontractor staff. Progress and health and safety will all be discussed.

Plant Vehicle Pedestrian Management Plan “PVPMP”

A site specific “PVPMP” (Appendix - G) will be prepared by our Project and Site Manager, who will have sufficient knowledge and experience to identify and manage the risks associated with effective plant and people interface.

During the life of the project it will be necessary to review the “PVPMP” to reflect the requirements of the project as conditions change.

During periods of rain / inclement weather or where the vehicle has had to go ‘off road’ prior to leaving site the vehicles wheels will be inspected for mud and debris.

If required a wheel cleaning area / facility will be present during these times with a policy that no vehicle will be allowed to leave site which would contaminate the public highway.

The appointed Site Manager will periodically check the condition of public roads and paths for any mud or debris and during these inspections should the need for a road sweeper become apparent.

Temporary Works Arrangements

John Perkins Construction have in place effective arrangements for the controlling of risks arising from the use of temporary works and these have been captured in the Temporary Works Procedure (Appendix - H) and contain the following elements: -

- Appointment of a Temporary Works Coordinator
- Preparation of an adequate design brief
- Production of a temporary works design
- Independent checking of the temporary works design

Due to the way the new wall is being constructed, it is not envisaged that any temporary works will be required.

10. WORK ACTIVITY ASSESSMENTS & CONTROL

Risk Assessments

Where necessary, we will prepare a Risk Assessment to detail the risks associated with specific activities and these assessments will outline the required controls necessary to undertake the work safely.

Subcontractor risk assessments will be completed for all packages of works, reviewed, and approved by the site team. The RA will then be communicated to the operatives at site induction.

COSHH Assessments

When applicable COSHH Assessments will be prepared by us in line with the use of products and substances involved in the construction process and these assessments will be outlined to all site operatives, contractors and subcontractors via Toolbox Talks.

Method Statements

Risk Assessments and COSHH Assessments will be utilised to prepare Method Statements and together they will form the basis of our site specific “RAMS”.

Subcontractor risk assessments will be completed for all packages of works, reviewed, and approved by the site team. The MS will then be communicated to the operatives at site induction.

Activity Assessments

Specialist contractors and subcontracts will undertake the majority of work on this project and as such their Risk Assessments, COSHH Assessment and Method Statements will be evaluated by our competent Site Management Team prior to the commencement of their work package and specific work activity.

Individual folders will be maintained throughout the duration of the project to control these “RAMS” and they will be made available to the CDM Principal Designer for comment.

At this stage sufficient information is not significantly advanced to establish full extent of these controls.

Permits To Work

Permits to Work will be implemented to control specific key activities.

- Use of step ladders
- Hot works
- Breaking ground
- Working near to the waters edge

11. HAZARDS & RESTRICTIONS IDENTIFIED

CDM Advisor: Mark Wilson of MSAFE Risk Management Limited has produced a Project Risk Register which identifies a number of initial Key Hazards.

Namely: -

- 6.1 Site preparation, Piling and Ground work
- 6.2 Work at height
 - Scaffold
 - Internal works at height
 - Installation and work around staircase apertures and lift shafts
 - Roofs
- 6.3 Manual Handling
- 6.4 Temporary Works
- 6.5 Health – Noise, dust & vibration
- 6.6 Lifting Operations
- 6.7 Exposure to Silica

Hazards are colour coded based on risk level: Red = High Amber = Medium Green = Low		
Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
Water	1. Falling in 2. Drowning	Works adjacent to the water will need to be planned to ensure that operatives are not at risk of drowning. This will need to include planning the works to eliminate work adjacent to unprotected edges and where this is unavoidable ensuring that a suitable rescue strategy is in place. Due to the tidal ranges in the location and the exposed nature to the elements, the Principal Contractor must consider the following: - Wearing of life jackets must be adhered to at all times when working on banks, breakwater or adjacent to tidal water; - No lone working permitted in the vicinity of tidal waters; Provision of rescue boat and trained operator for work adjacent to tidal water and limited range that a rescue / life line can offer; - In addition to the above, JPC must provide competent supervisor on site who has understanding of tide tables and who is capable of making assessments of the weather conditions and whether it is safe to work in prevailing conditions.

Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
Asbestos	1. Contamination through ingestion. 2. Exposure to asbestos fibres.	If Asbestos is detected. Cease all works to affected area and cordon off area to prevent

	3. Respiratory carcinogen risk leading to cancer.	unauthorized access. Provide samples for testing the suspected asbestos material found on site with a competent asbestos consultant. Secured area to eliminate unauthorized entry ensuring that only authorized competent persons are allowed to enter with appropriate asbestos training. Provide a washing facility for all operatives' boots to be cleaned prior to leaving site. Provide adequate Personal Protective Equipment whilst carrying out the works (masks, disposable gloves etc) If the samples prove positive for asbestos, then a HSE licensed asbestos contractor will be appointed to remove the asbestos. RAMS will be forwarded the principle designer for review.
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Cranes Lifting Equipment Mobile Elevated Working Platforms	1. Overturning 2. Contact with persons 3. Contact with structure 4. Dropping load 5. Contact with overhead power lines	Any crane lifts will be contract lifts, with the subcontractor providing an AP. The Appointed Person will establish the safe systems of work and control measures for all lifts. Lift plans are anticipated for Mobile Cranes (Various operations), Telehandler and Excavator at this time. No lifting will be permitted without a signed off lifting plan.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Plant and Topography	1. Tipping Plant	The full use of fully ticketed "CPCS" and experienced plant operatives, accompanied by banksmen. Barriers and or stop blocks will need to be installed to the foundation excavation edge to prevent plant and other traffic accidentally slipping over the edge, overturning or causing a collapse. Crowd Barriers will also be used to direct Plant to the required traffic routes.
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Erection of Structures	1. Premature collapse 2. Falls of persons/materials 3. Instability of crane/load	This is a significant risk at the site given the nature of steel frame erection. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. We will be subcontracting the frame design, manufacture and erection to a specialist installer who will propose a safe system of work ahead of commencing on site.
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Fork Lift Trucks	1. Striking person/object 2. Lifting and lowering of loads	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Telehandler lifting Plan and Traffic Management Plan. Any changes to the plan need to be recorded and clearly communicated to all relevant personnel. Only qualified and experienced operatives will be permitted to operate ALL plant and tools.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Fire	1. Heat 2. Destruction of property 3. Injury to persons	A full fire risk assessment is to be compiled before works start on site. As highlighted during the site induction, fire assembly points and firefighting stations will be highlighted along with what to do should you discover a fire.
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Working at Heights	1. Falls of persons from: Floor edges Openings in floors Open joisting Stairwells 2. Falls of materials / equipment 3. Falls of persons and articles through fragile construction materials	Any work at height risks will be assessed by our specialist contractors / subcontractors before the operation starts. Our Site Manager will assess these before the work commences to ensure stability. Safety netting will be implemented from the steel frame as fall protection during the installation of the roof covering and cladding. Propriety leading edge protection will be provided and moved along as the roof installation progresses. Access to the roof will be via Haki stairs. All shafts in the buildings will be filled with birdcage scaffolding and will also have a barrier fitted across them. Suitable independent scaffolding will be erected in accordance with TG20, or approved design and robust management will be adhered to regarding access to the scaffolding prior to the steel frame being erected i.e all access ladders removed until steel frame is erected.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Traffic Management	1. Struck by vehicle 2. Accidents to road traffic including pedestrians 1. Diesel Fumes 2. Petrol Fumes	A Plant, Vehicle, Pedestrian Movement Plan "PVPMP" will be implemented and displayed on site. A copy will also be issued to all sub contractors. Clearly defined traffic routes to be
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		set. Public to be segregated from site traffic wherever possible. NO unauthorized access to the site. Site compound to be segregated from the public with no unauthorized access. JPC's PVPMP will identify the location of the site accommodation, welfare facilities, storage area, lay down and unloading areas. This plan will also be used to identify the vehicular traffic routes onto, around and off the site, as well as the defined pedestrian routes to ensure personnel and site traffic are separated and do not come into contact with each other. A competent banksman will be provided and the individual will be made known to all site personnel. The PVPMP will be posted in all Site Welfare Facilities and it will be discussed during each Site Induction. A copy of the PVPMP will be sent to the Principal Designer for consideration.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
Excavations	1. Collapse 2. Persons and plant falling in 3. Trespassers (Public) falling in exposed trenches. 4. Ground Gases	Undertake work operation in accordance with prepared RAMS. WRW will monitor compliance throughout the operation. Works are to be planned and RAMS to be reviewed and approved before works commence. All excavations are to be either benched, battered back or implantation of a trench box with fall prevention systems in place is stated within the RAMS. We will ensure that all excavations are visible and secured at the end of each shift to prevent unauthorized persons entering the works area. It is to be ensured all excavations are visible and secured at the end of each shift. To prevent unauthorized persons entering the works area. All excavation must be assessed and have adequate shoring provided regardless of depth if deemed necessary to ensure the safety of those engaged in the work. Any excavations left unattended must be backfilled, securely fenced off or covered to prevent accidental falls. Regular inspections of the excavation should be undertaken by JPC in accordance with the regulations WRW will take every precaution to

		ensure that all members of the public and the adjacent owners are not inconvenienced or endangered by the works being carried out. All plant must be operated within the confines of the site and materials must be utilised at all times with the knowledge that members of the public are within the vicinity of the works in progress.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Access & Egress from Site. Security of site etc. Centre Visitors / Customers Visitor Traffic Visitor Parking Area Access from adjacent buildings Deliveries	1. Struck by falling materials/tools 2. Contact with vehicles/plant 3. Contact with hazardous substances/materials 4. Injuries to unauthorised persons	Segregation of all non-site specific people at all times and very close adherence to the PVPMP plan. Pedestrian routes will be incorporated on the site to keep vehicles and pedestrians apart. A secure hoarding will be installed at the start of the pre-construction phase. JPC will ensure that the site is proofed against unauthorized entry especially out of working hours. All materials, tools and plant must be securely stored or immobilized when not in use. Any ladders and scaffolding will, as far as is practicable, be made inaccessible out of work hours. All plant must be locked and rendered inoperable when left out of hours. It is unlikely that there will be children in the area but every effort should be made to ensure that if there were they would find it very difficult to gain entry to the compound and its contents.
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Site Clearance	1. Struck by vehicles 2. Underground services	Segregation of site traffic and public. Full CAT scanning of all areas prior to any works being undertaken. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Brickwork / Blockwork	1. Dust 2. Musculoskeletal injuries 3. Manual Handling 4. Working at heights	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Electrical Installation	1. Electric shock / burns 2. Falls of persons 3. Working at heights. 4. Flammable atmospheres	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Only competent persons will
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		undertake works on the electrical installation. A Safe System of work will be agreed for any work on electrical systems before the operations begin.
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Electricity - General	1. Electrocution 2. Fire/explosion	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Only competent persons will undertake works on the electrical installation. A Safe System of work will be agreed for any work on electrical systems before the operations begin.
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Diamond cutting operations See Also Machinery	1. Noise & vibration 2. Machinery 3. Eye injury	We have planned diamond cutting operations. This will be undertaken by a specialist, competent contractor. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Control measures will be implemented.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Dust	1. Inhalation	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Any operations that may generate dust will be carefully monitored and all plant will be fitted with dust suppression and extracted where appropriate. Regular toolbox talks will be given by our Site Manager on Environmental Health controls.
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Lifting & transporting loads Manual Handling (See also Lifts and Hoists and Cranes, mobile elevated work platforms)	1. Lifting and transporting heavy loads 2. Musculoskeletal injuries 3. Trapping of hands/feet	Undertake work operation in accordance with prepared RAMS and HSE guidelines. JPC will monitor compliance throughout the operation. Only qualified and experienced operatives will be permitted to operate ALL plant and tools. Banksman will be used if required. A logistics plan will be implemented and updated throughout the project.
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Lifts and Hoists Installing & Removing	1. Manual Handling 2. Fall of persons or materials 3. Inadequate plant isolation	Undertake work operation in accordance with prepared RAMS and HSE guidelines. JPC will monitor compliance throughout the operation. Only qualified and experienced
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		operatives will be permitted to operate ALL plant and tools. Lift installation will be by a specialist lift installer, who will propose a safe system of works ahead of the installation.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Noise Vibration	- Hearing damage - Vibration white finger - Nuisance to residents / customers / public in area	Undertake work operation in accordance with prepared RAMS, HAVS assessments and RA assessments. JPC will monitor compliance throughout the operation. Any noisy operations such as cutting will be undertaken at a convenient time to minimize the risks. A specific RA will be produced for all operations to monitor exposure.
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Power Tools	- Electricity - Cuts / Abrasions - Entanglement - Noise & Vibration	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Where this falls within a subcontract package, our Site Manager will request, appraise and agree all required RAM's involved with the operation. He will continue to review the RAMS through their time on site to ensure their relevance.
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Services Electricity, Gas, Water Telephone, Cable, Television	- Fire/explosion - Burns - Electrocution - Accidental disruption of services.	Service disconnections will only be carried out by competent and registered contractors / subcontractors. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Full, detailed survey and logging of all existing services to be carried out to all areas prior to any works commencing. Permit to work will be implemented together with Lock Out permissions.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Transport	- Struck by vehicle - Falls from vehicle - Striking an object etc.	PVPMP Traffic management plan will be implemented and displayed within site welfare arrangements. A copy will also be issued to all delivery and haulage contractors and subcontractors.
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Public Safety	1. Out of hours' control 2. Vehicles entering and leaving site. 3. Falls of materials from scaffolding	The site will be made safe and secure at the end of every working day, with all excavations and openings closed up, security fencing checked and secured daily, all dangerous structures made safe and all materials and tools securely locked up daily. Skips will be sited within the designated works areas, within the security fencing areas. A trained traffic marshal will escort all vehicles out of the site to ensure that there is no risk to the public. Deliveries will be pre booked with our Site Manager. No works to drainage or otherwise will be undertaken outside of a secure, designed hoarding.
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Street Works	1. Public Interface 2. Pedestrian Plant Interface	Street works will be conducted by approved licensed contractors. Street Works are to be planned and RAMS to be reviewed and approved before works commence. Clear and defined segregation to be defined and denoted on PVPMP traffic management plan to form part of the RAMS for the works. Area to be left secure at the end of each shift to prevent unauthorized entry into the working area.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
Vermin	1. Contamination of Weil's Disease	There is no known large scale evidence of a vermin issue around this site JPC are to ensure compliance with the RAMS and any visible evidence of vermin present will be reported to the Site Manager immediately. JPC welfare provision will be kept clean and clear of rubbish at all times and no food is to be stored overnight at the facility.
Storage of chemicals	1. Chemical reactions and hazardous gases from leakage	No chemicals or hazardous gases are expected to be used on this project. Undertake work operation in accordance with prepared RAMS and COSSH assessments. JPC will monitor compliance throughout the operation.
Storage of flammable liquids Petrol / diesel and liquefied petroleum gases	1. Fire and explosion	A provision will be made to store a small bunded diesel bowser on site and a spill kit will be maintained near the bowser and within site storage containers. No more than 3 x 5 lts of petrol for

		small plant will be held on site at any given time and will be stored in a lockable container.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Plumbing Guttering / downpipes / water systems / Water Closet / wash hand basins	1. Working at heights 2. Musculoskeletal injuries 3. Contact with hazardous substances/materials including lead work 4. Hot work	This will be a contracted / subcontract package. Before works start our Site Manager will request, appraise and agree all required RAMS involved with the operation. He will continue to review the RAMS through their time on site to ensure their relevance.
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Lone Working	1. Isolation	No lone working will be permitted. Any operation will require a minimum of (2) two operatives on site at any one time.
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Maintenance Work - General	1. Services 2. Machinery 3. Contact with hazardous substances/materials 4. Access	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Gas, Installation of	1. Explosion/fire 2. Musculoskeletal injuries	Undertake work operation in accordance with prepared RAMS. Only competent persons will undertake works on the gas installations.
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Hazardous substances Toxic, harmful, irritant or corrosive substances, for example wet concrete, additives, mortars, grouts, adhesives, solvents, water proofing compounds, preservatives, sealants & jointing compounds etc.	1. Contact with hazardous substances/materials 2. Escape of substances.	Follow COSHH assessments We do not anticipate using any Hazardous substances on this project. Should a requirement arise, the operation needs to be risk assessed and accompanied by a method statement and COSHH Assessment.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Heating and Ventilation Plant, Installation of	1. Falls of persons/materials 2. Overturning of platforms 3. Musculoskeletal injuries	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Only competent persons will undertake works on the heating and ventilation Installation.
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Highly Flammable Substances	1. Fire/explosion 2. Toxic vapours	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Hot work Including welding, burning, soldering, brazing, grinding	1. Fire, explosion 2. Fumes 3. Burns to skin & eyes (Arc eye)	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance
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		throughout the operation. We believe that we have designed out the majority of hot works and if they are required then a hot works permit to work will be implemented.
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Working with Lead based materials	1. Inhalation 2. Ingestion	Not expected but if this occurs tor compliance throughout the operation. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Highly Flammable Substances	1. Fire/explosion 2. Toxic vapours	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Pre-Construction Information Reference	Principal Hazard(s)	Mitigating Measures
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Installing / removing mechanical, electrical, control and instrumentation plant (General)	1. Musculoskeletal injuries 2. Fall of persons or materials 3. Inadequate plant isolation	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation. Only competent persons will undertake works on the mechanical and electrical Installation.
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Cartridge Operated Tools	1. Penetration of fixing into body 2. Noise	Where Cartridge Operated Tools are required. Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Cleaning Activities	1. Falls of persons/materials 2. Use of power tools 3. Use of harmful materials 4. Musculoskeletal injuries	Undertake work operation in accordance with prepared RAMS. JPC will monitor compliance throughout the operation.
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Concrete	1. Contact with skin 2. Stressing failure 3. Pumping	Where we have been unable to design out cast in-situ concrete. (such as foundations) Follow COSHH assessments. Undertake work operation in accordance with prepared RAM. JPC will monitor compliance throughout the operation.
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Waste	1. Environmental damage 2. Fire 3. Windblown material	Strict site control will be maintained with no burning on site. All skips will be kept within the site security fencing and netted if required. Skip Waste will be segregated for possible recycling.
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12. THE HEALTH AND SAFETY FILE

Requirements for the content of the Health and Safety File will be determined by Principal Designer. Information required, including that from Subcontractors, will be forwarded to the Principal Designer on completion of the works. The information will be collected as and when it becomes available. It will be the Senior Design and Construction Managers responsibility to collate this information ready for review by the Principal Designer.

13.QUALITY MANAGEMENT

Inspection & Testing

Small electrical items on site will have record of PAT testing where required.

Larger items of plant will have evidence of periodic inspection available on site.

Scaffolding and the like will have weekly inspection by a qualified scaffolder, and recorded in site folder 2, section 3.

Quality Inspection Records

QA sheets will be completed as required for the works, to ensure areas are specification compliant, and good workmanship practices are maintained. These will be logged in Site folder 2, section 5. QA sign offs will be required for key aspects of work, such as Drainage, Re-enforced slabs, Steel frames, and dry lining.

Internal Quality Audits

Weekly site inspection records will be recorded in site folder 2, section 2 by the site manager.

Ad hoc inspections will be undertaken infrequently by visiting Construction manager or Directors, and will be recorded in the same section.