19th July 2023

Elizabeth Street

Construction Environmental Management Plan

Construction Environmental Management Plan for the Works:

The Project:

The project comprises Construction of 8No. industrial unts of various floor areas including access roads, car parking and heavy goods vehicle turning circles.

Initial enabling works will also include the demolition of an existing building with some Asbestos containing materials, the isolation and lowering of existing services about the main entrance and existing building, ground stabilisation to all new building footprint and the installation of retaining walls along areas of the site boundary.

The Site Location:

The site is located off Elizabeth Street, Cheetham Hill. Manchester. M8 8JJ.
The site area is shown below.

The Client is:

Kier Property Development Ltd
81 Fountain Street
Manchester
M2 2EE
Telephone: 161 4513677Email:

The Principle Designer
RPP Management Ltd
Blenwood Court
451 Cleckheaton Road
Low Moor
Bradford
DD12 0NY
Telephone: 01274 693622

The Principle Contractor & Site Contact:
Triton Construction Ltd
Andy Gaskell – Contract Manager
Telephone: 07984 157 090
Email: a.gaskell@tritonconstruction.co.uk

Preconstruction Activities:

We have listed below some key preconstruction activities/risks to be considered. The list is not exhaustive and would be developed in line with the Project Risk Register.

- Meeting the Client and his Project Manager to review the works, site compound area, cabin location, temporary roads, access routes, scaffold and hoarding lines, mobile crane locations, permits, licences, and skips.
- Risk of environmental harm to the surrounding properties/drains/highways.
- Possible UXO risk; UXO Stage 1, 2 and 3 risk assessment and report to be undertaken.
- Installation of a new combined drain connection off site – Water Industry Act Section 106.
- Review the control of vibration, noise, and air quality/dust control.
- Working around live services.
- Producing a Traffic Management Plan – approvals, permits, licenses loading out, deliveries, skip location, avoiding congestion, access routes, emergency vehicle access, pedestrian, and vehicle segregation, refuse collection and the like and Highways Act Section 278
- Produce a Fire Assessment and associated Fire Plans.
- Complete the Project Construction Health, Safety and Environmental Plan.
- Check with the surrounding building owners/occupiers and Highways Inspector if there are any planned building works or road closers.
- Consideration of the use of Local labour and suppliers.
- Put in place a Planning Matrix, Building Control Matrix.
- Issue the Information Release Schedule, Design Schedule, Subcontract and Material Procurement Schedules.
- Appoint the Temporary Works designer and produce the TW schedule and designs.
- Carryout Drainage surveys.
- Check the existing Topo level and manhole levels.
- Undertake Dimensional surveys and M+E surveys.
- Submit Building Control Approval documents and review and answer Building Control queries.
- Carryout early SBEM's, and the like.

- Location of compound and car parking for staff, operatives and visitors.
- Ensuring the public are not put at risk and maintaining safe access around the outside of the site boundary.

Design Review

A design assessment & value engineering review is one of the most important functions in the early stages of any project.

At Triton we take this upfront role very seriously, by allocating a dedicated Design Manager to oversee the design process. In conjunction with the design team, we review and propose alternative construction methods, choice of materials, building systems, sequencing, layouts and practical buildability to ensure that as many issues or problems are resolved upfront, to facilitate a smooth-running build process.

We also understand that not every detail will be resolved at day one and that is the reason we continue with the design input & work closely with the client and design team throughout the build. This ensures that all avenues are investigated and assessed for suitability, from new systems of work, new products, alternative materials and build methods, to achieve maximum value for our clients.

As most of our workload originates from either recommendation or negotiation, it is paramount that we offer an exceptional level of service and delivery.

We will work closely with the Client and Design team to achieve a safe, high quality and cost-effective scheme.

Our design manager Steve Atherton would control and monitor the whole process from design through construction and to completion to ensure the team achieves the end goal.

An Information Required Schedule will be issued at the commencement of the works and then individual 'Request for Information' sheets will be issued for specific design information.

Construction Programme:

Our summary construction programme for the works is appended to this document.
The anticipated start date is May 2023
The anticipated completion date is June 2024
The date of first occupation is TBC

Our construction programme fully details the procurement, build sequence of all units and the new access to the site, along with the critical path, testing/commissioning and snagging of the works.

The works will not be phased.

The proposed Hours of working

Triton working hours;
Monday to Friday, daytime, 7.30am to 6.00pm
Saturday – 8-30am – 2pm.
Sunday/Bank Holiday – No work.
Weekends only if required and only by agreement with the EA/Local Authority.
Out Of Hours work only by agreement with the EA/Local Authority.

Works that are audible at or beyond the site boundary should not occur outside of the Monday to Friday 8.00am to 6.00pm working hours without EA/Local Authority approval.

Community Project and Employment of Local Labour

We will engage with the local community center and provide help and assistance in any reasonable community project - TBC

We will ensure that the employment of local labour and apprentices is provided if possible on this contract.

Risks and Mitigation Measures:

Prior to the commencement of the contract we would produce a Project Risk Register to show the risks we, the Client, the Principal Designer, the design team and key subcontractors can foresee and show the mitigation measures that we would be put in place to eliminate or reduce the risk.

Operational Control Measures:

Triton Project Manager will maintain contact with local residents/businesses in the immediate area so that any concerns on environmental impacts may be addressed at an early stage.
Regular visits from the regulatory authorities will be encouraged so they will be confident that controls are in place and monitoring is being carried out. This will aid the authorities in responding to any enquiries from the public.
A proactive approach will be taken to keep all neighbour's informed. Triton will issue newsletters to local residents/businesses to keep them informed of the progress on site. A sample letter is appended to this document.

We will work closely with our site operatives, visitors and subcontractors to coordinate the construction works, deliveries, visitors and construction personnel to avoid any disruption to the use of the surrounding highways or residential properties.

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Access to the Site:

Access to the site for the new building will be off Elizabeth Street. A new site entrance will be formed into the site. The site entrance will be used for both inbound and outbound visitors, staff, construction personnel, plant and delivery vehicles of various sizes from small vans, skip wagons, 8-wheeler wagons to articulated wagons.

Temporary Access Requirements:

No temporary access requirements are required to access the site so a Section 171 agreement is not required.

The site boundary, access point and loading bay areas:

The site boundary, access point and loading bay areas are shown on the site logistic plan below:

As shown on the drawing above, a 2.4m high solid timber (plywood) hoarding will be set along Elizabeth Street to the rear of the public footpath. Steel pedestrian and vehicle gates will be set within this solid hoarding to open inward into our site. Within the site, a secondary set of heras gates will be located at the point of the current site boundary fencing and a further set of gates to access the rear of the neighbours property.

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Traffic Management Plan

A banksman will be in attendance to manage construction traffic in and out of the site. A vehicle can drive into the site and the site gates closed. We would off load the vehicle with a forklift, open the gates and let the vehicle drive out then close the gates behind it.
A turning area will be established within the site area but not outside the site.

For Highways on the public highway that exclude Section 278, our proposed traffic management scheme will be submitted to highways for their comments/approval prior to any works commencing. All necessary permits and notifications will be submitted ie Section 50, Section 58, Section 106, requests for a temporary traffic regulation order and the like, prior to the works commencing.

A full detailed Traffic Management Plan will be produced prior to the works commencing. This plan will be implemented, developed and updated on a regular basis in line with the changing construction sequences. The plan will contain details for all the deliveries, crane locations, vehicle/pedestrian routes, emergency vehicle and fire escape routes for works in the site boundary and to the external work areas.

Delivery routes to the site will be suitably sign posted as necessary to minimise local disruption.
A schedule of deliveries will be produced and a schedule of key programme dates will be issued and reviewed. These will include noisy working and any essential service shut downs to ensure there is little disruption to the daily running of the surrounding properties.

Care will be taken to ensure that no construction materials spill over on to the road

Traffic routes will be planned and reviewed as the construction works progress. We will ensure that the existing turning areas and pedestrian routes are safe for all parties and that there is an emergency procedure in place, developed and kept up to date during the construction process.

Triton will carefully plan and coordinate all works to ensure that inbound/ outbound deliveries are not impeded.

The key to executing the construction works in a safe manner is by providing a safe environment and promoting safety with the construction personnel, the staff, visitors, the public and the Stakeholders. We will provide banksmen with all vehicles at all times. The banksmen will wear red hard hats, red high visibility vests with the words 'Banksman' displayed across the back of their vests. They will have hand held radios for communication with the site office and each other.

Due to the nature of the confined site entrance, careful consideration of the site logistics will be required with forward planning of deliveries, agreed delivery dates and times for each wagon. We will have to adopt a 'just in time' system, so vehicular movements on and off site for the construction will be carefully controlled.

Clear wayfinder signs and speed restriction signs will be posted along the external roads to guide delivery drivers to the site compound or loading bay area and construction operatives to the external parking areas.

Freight Vehicle Safety Requirements will be implemented on our site.

It is essential that Stakeholders, site visitors and the public do not come into contact with vehicles. Delivery vehicles and construction plant will have to move across roads and near footpaths used by the public, staff, visitors and construction personnel. Young people may not appreciate the

danger created with construction activities and will be particularly vulnerable to the dangers. We will ensure that all vehicles are escorted by a banksman and vehicles are only reversed under the supervision of banksmen. The safety of the public outweighs the need to move vehicles, so where possible vehicle movements will be restricted but when this is not possible the vehicles will be stopped from moving until it is safe to carry on.

Adequate Safety fencing, safety+ wayfinder signage with clear pedestrian routes with anti-trip feet will be provided:

All material and subcontractor orders will contain a directional map to the site. The orders will clearly indicate the site landline number, Project Managers name and mobile phone number and confirmation where the parking is for the construction site.

All deliveries will be planned and coordinated in advance to ensure there is access and safe transportation to the construction site. Where possible deliveries should take place to miss peak traffic times.

<u>Pedestrian and vehicular Traffic Management off Site as part of Triton operations</u>

We will be conducting several construction operations on Elizabeth Street.

These works will include the following;

- Alteration to existing utilities in both the road and footpath.
- Highways Act Section 278 works to form the new site entrance and alteration to footpaths.
- Water Act Section 106 to connect the site mains sewer into the existing network.

All of the above will involve traffic management and cause temporary diversion to both vehicles and pedestrians. We do expect a full road closure and footpath diversion for the drainage connection work. With the road and existing services alteration, we expect part road closure with traffic lights along with a pedestrian footpath diversion. These details will be clarified by our chosen Traffic Management specialist upon receipt of final works details.

All these works will require agreement and permits from MCC.

We are currently procuring the final details for these operations however, the works do fall within the latter stages of our programme. As soon as we have these final details of each operation, we will be submitting the necessary application to MCC and we will update the CEMP details accordingly.

Car Parking:

Car parking for site staff, visitors and site personnel will be arranged on site.

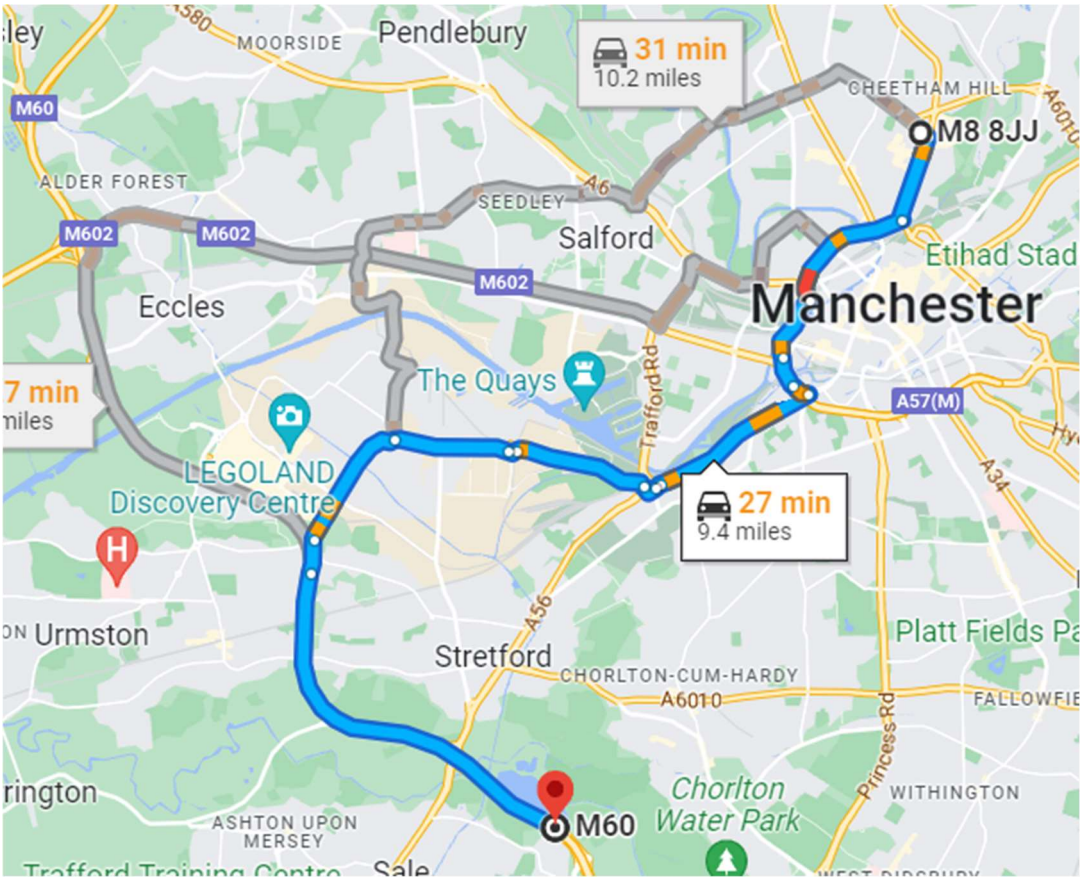
Due to the restrictive nature of the site, it means there will be none or few available car parking spaces off site for the duration of the works.

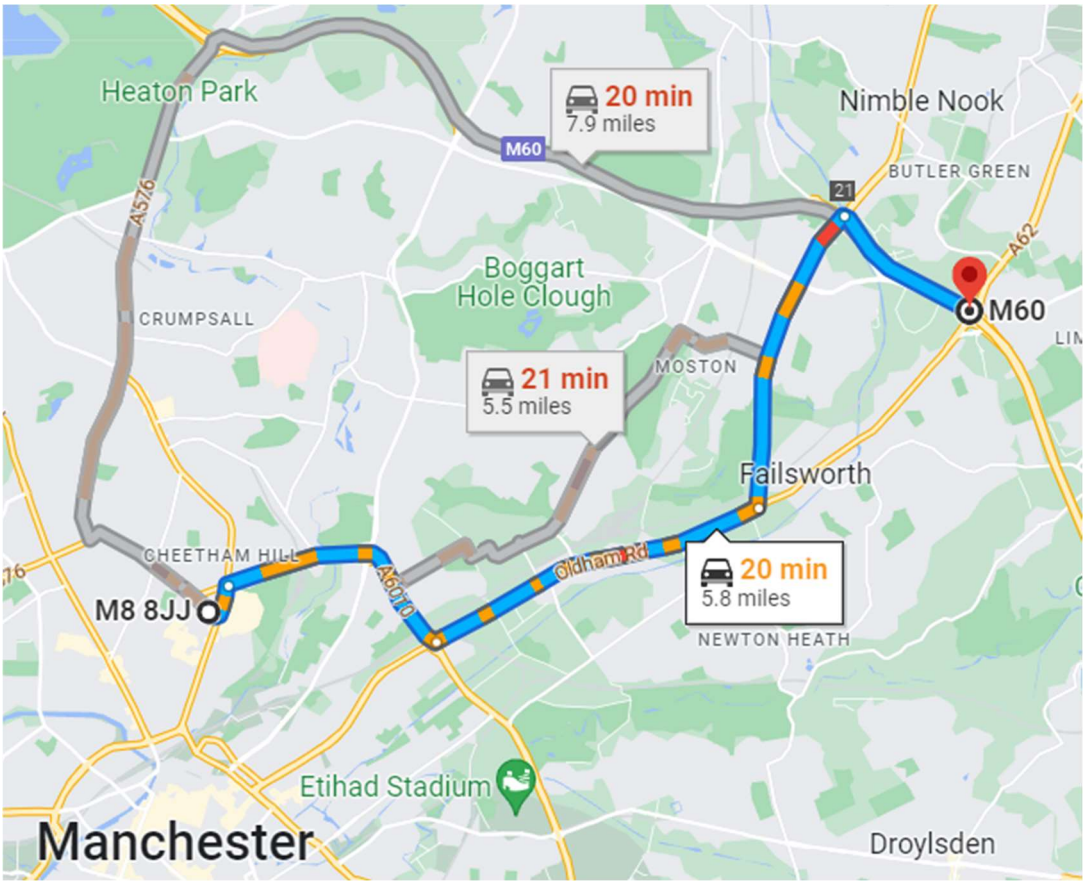
During the first 57 weeks of the programme, we anticipate 10 cars and 5 vans at any one time.

There are public highways around the site where vehicles can be parked but we must ensure we do not obstruct resident access, emergency vehicles or refuse collection vehicles.

Access/Egress Routes to and from the site:

There are several ways to and from site for personnel & delivery vehicle.
The main access will be from the from the M60 & M602.
Nearby mainline railway station and local bus routes.





HGV Loading and Turning Area

It is not envisaged that vehicles will need a turning area outside the site. A full vehicle tracking route will be produced for site delivery wagons.

Environmental Management Measures:

All works will be carried out in accordance with our Environmental Policy, and the Planning Conditions.

Triton operates a Quality and Environmental Management plan accredited and in accordance with the ISO14001 Requirements, which forms part of our ISO9001 Quality Procedures.

Amphibians:

There are no Amphibians on or near the site.

Hedgehogs:

If any hedgehog are found, then it is a legal requirement all work must cease and advice must be sort from an ecologist.

Bats:

If any European protected species of bats are found, then it is a legal requirement all work will cease and advice sort from a licensed specialist.

Badgers:

There are no badgers on or near the site.

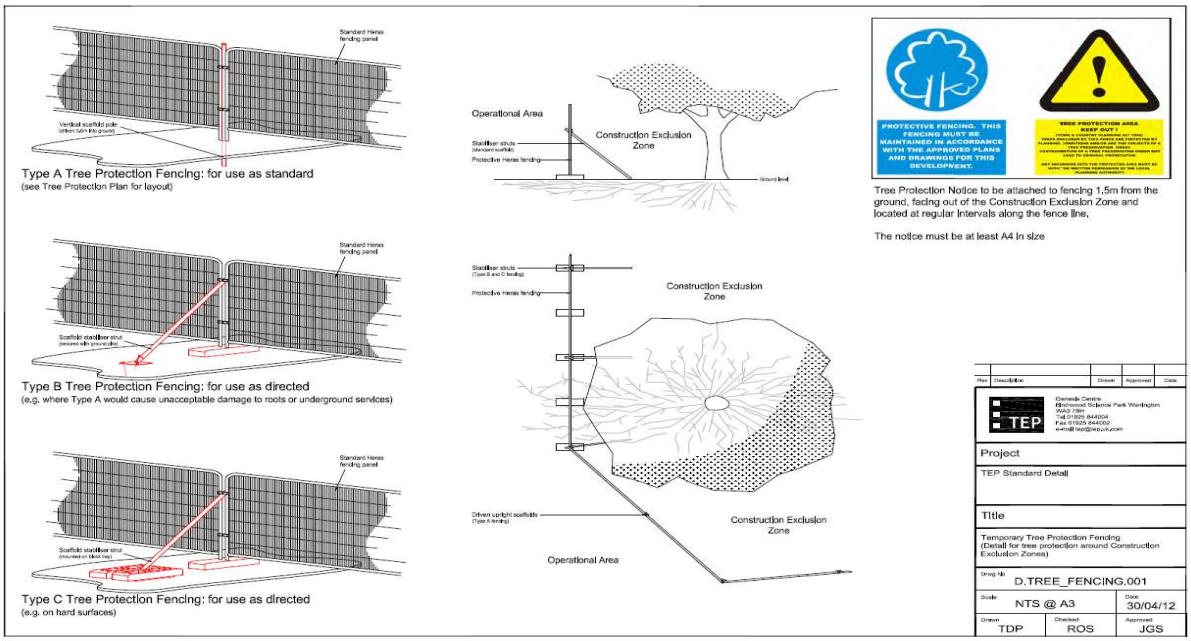
Protection Of Trees and Wildlife:

Ecological Report and Arboricultural Impact Assessment and site walkover of the site have previously been undertaken and the design of the project amended in accordance with their comments.

There are no bats, badgers, amphibians or flora/fauna to be protected.
Several trees have TPO's and these will be protected with temporary tree protection fencing.

Japanese Knotweed

Whilst the site has been cleared of Japanese Knotweed, regular checks will take place by specialist to ensure no further issues arise.



A designated fueling area will be located within the site compound.
Environmental spill kits will be located adjacent the construction areas in case an emergency arises.
If an emergency arises then works will cease and the EA contacted.
All works will require an approved risk assessment and method statement prior to any works commencing.

Groundwater:

We are not expecting any significant perched groundwater during the project.

However, during periods of heavy precipitation, there remains a risk that:

- Excavations may become unstable.
- There is an increase of groundwater behind retaining structures.
- Water may drain freely from engineered slopes / cuttings.

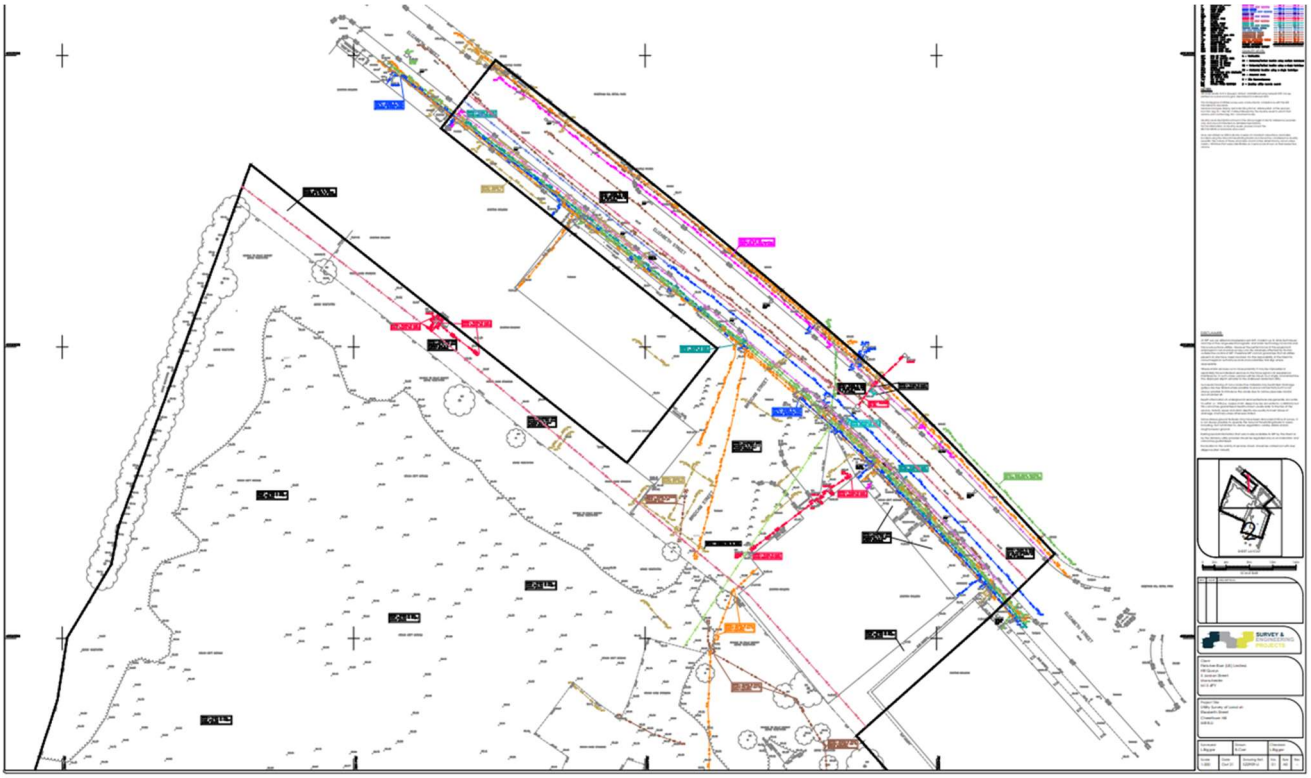
- It has been concluded that the risk to human health from onsite soils is Very Low.
- Risk to groundwater from onsite soils is Low.
- Earthworks are to be undertaken under a CLAIRE Materials Management Plan which will be produced by Triton specialist.

New Drainage Connection and Stats Disconnections.

All the Statutory Undertakers will be contacted, and a CAT Scan of the area undertaken to ensure all services are identified and dealt with correctly.

A Section 106 drainage connection application will be submitted and approved. We will submit a Section 50, Opening Up Notice, for these works. A full Road and Traffic Chapter 8 Management scheme will be submitted and approved by Highways.

The existing services on the site are shown below:



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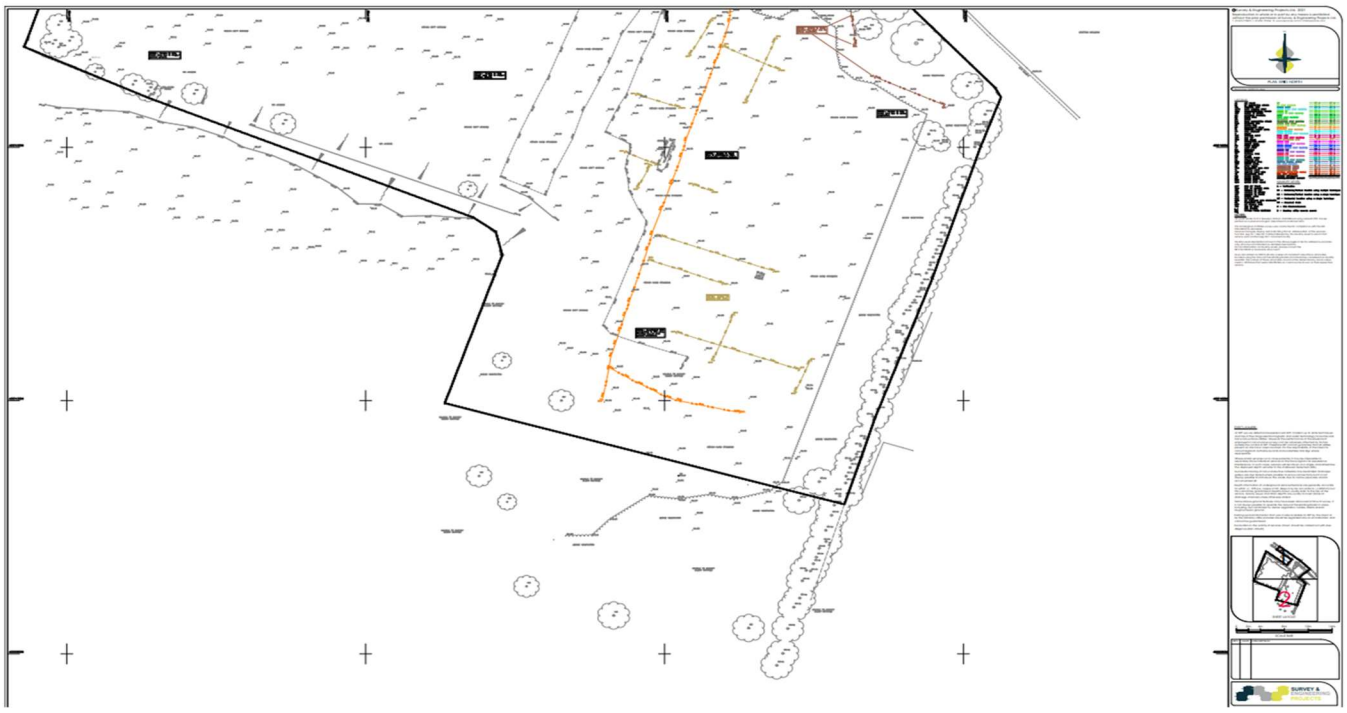
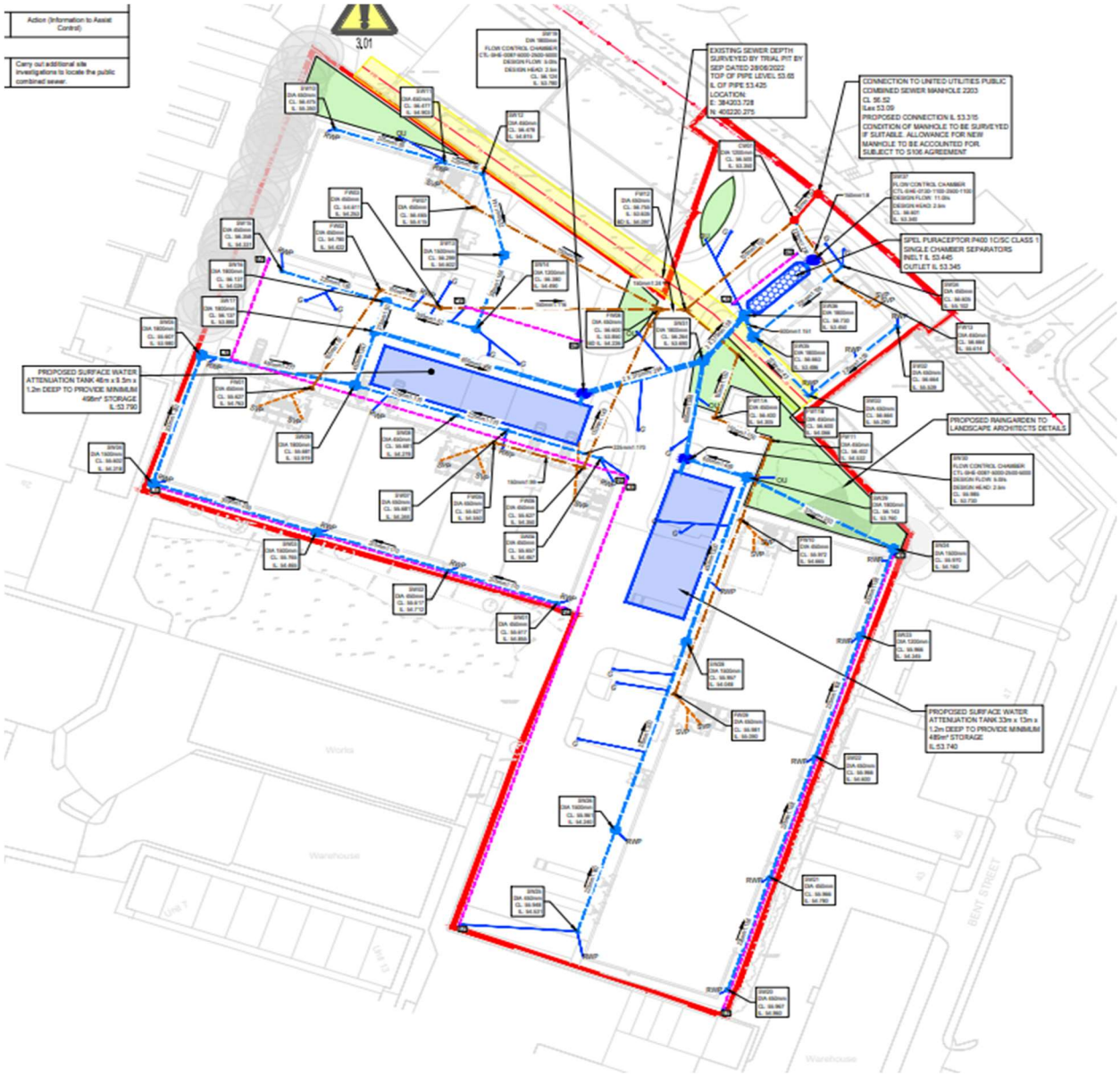


The proposed drainage plan is shown below:



Archaeological Brief

It is not envisaged that an Archaeological written scheme of investigation will be required for this project. If significant concentrations of materials are found then further investigation may be required. If this is the case, then we would undertake a programme of archaeological mitigation in the form of a watching brief. This would be undertaken for all site strip, piling, ground works and drainage works.

UXO

No unexploded ordnance (UXO) noted in PCI.

Flood Protection During the Construction Works:

The site is Low Risk. We will review the construction works and ensure we have considered adequate flood defences and escape routes during the different construction phases of the works.

Fire Prevention:

Triton will complete a fire risk assessment and ensure that this is reviewed as the construction works progress. No smoking will be permitted within the site confines and no burning of any materials will take place. Waste and storage will be kept to a minimum to ensure the fire loading is as low as possible. Hot works will only be carried out under a 'hot works' permit, which will be signed off daily and Triton will always have a nominated Fire Marshall on site.

We have a duty to prevent personal injury or death and damage to the Works or other property from fire. So, we will comply with Joint Code of Practice 'Fire Prevention on Construction Sites', published by the Construction Confederation and The Fire Protection Association (The 'Joint Fire Code').

The Fire and Emergency procedures will include the site-specific safety induction, training and instruction of staff, operatives and visitors, the location of the assembly point, instructions on what to do in an emergency, the identification of fire points, alarms and firefighting equipment and also any special arrangements for the evacuation of high risk areas.

Other key elements to cover in the plans are the position of site cabins/welfare, a location plan of the fire points, emergency access routes for emergency vehicles and the location of existing fire escapes from the new Respite Building. All fire routes must be clearly marked, maintained and kept unobstructed at all times.

All escape routes will be adequately lit and safety signs positioned to direct all personnel to a point of safety. All access routes will be cleaned, maintained and kept clear of all debris. As the works progress the emergency routes may change to suit the works.

The use of VHF radios will be used to aid communication between the site offices, compound, site areas, loading bay area, crane driver and the banksmen.

The site will be a no smoking zone, but we will provide a discreet designated smoking shelter taking into account the considerate contractor's scheme and legislative requirements.

Precautions to be Taken to Ensure the Safety of the General Public:

HSG 151 Protecting the Public –Your Next Move:
The Law says you must conduct your business without putting members of the public at risk. This includes the public and other workers who may be affected by your work.

The construction site requires measures to manage access through defined boundaries and steps to exclude unauthorised people.

Safety signage will be position around the site and to the site entrance to warn both delivery drivers and pedestrians of the dangers.

We will arrange to call into local schools, if deemed necessary, to give a safety talk on the site works and the dangers.

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Site Waste Management:

A site waste management plan will be implemented and monitored throughout the construction period.

Skips will be covered and kept on site.

Where possible waste will be segregated into separate skips on site for plasterboard, wood, hardcore, and general waste.

Hazard waste drums will be provided on-site for subcontractors to dispose of their hazardous waste. The drums will be collected and replaced by a specialist waste company.

Temporary Site Lighting:

Temporary site lighting will be required to the pedestrian walkways, the compound and within the new building area. Site lighting will be from flood lights fixed to the outside of the cabins and new building. These lights will be on PIR controllers and timers. They will be located with their heads angled downwards to ensure the surrounding properties are not affected by high lux levels of light. The pedestrian walkway lighting will be at low level and be in the form of strip lighting.
Lighting within the building will be provided by strip lighting and will be turned off at the end of the working day by the security guard.

Site boundaries:
The site boundaries will be defined physically by suitable solid timber and/or heras fencing. The type of fencing will reflect the nature of the site and its surroundings.
Determining the boundary is an important aspect of managing public risk.
We will consider planning what form the perimeter will take, provide the fencing and maintaining the fencing.
Questions asked will be:
What is the nature and type of the construction work?
How heavily populated is the area is?
Who will need to visit the site during the work?
Will the site attract children?
What are the site characteristics eg existing site boundaries, location, proximity to other buildings?
Typically, in populated areas, this will mean a two-metre-high small mesh fence or hoarding around the site.

Authorisation:
Triton will take reasonable steps to prevent unauthorised people accessing the site.
People may be authorised to access the whole site or be restricted to certain areas.
We will explain the relevant site rules to authorised people and do a site safety induction.
Where required we will supervise/accompany authorised visitors while they are on site or visiting specific areas.

Hazards causing risk to the public:
Many hazards have the potential to injure members of the public and visitors. Consideration of these risks and whether they exist on this project and how you will manage/mitigate them will be recorded on the Project Risk Register.

Falling objects:
We will make sure objects cannot fall outside the site boundary. eg scaffolds will have toe-boards, brick guards and netting. We may also need fans and/or covered walkways.

Delivery and other site vehicles:
We will ensure pedestrians cannot be struck by vehicles entering or leaving the site. Obstructing the pavement during deliveries may force pedestrians into the road, where they can be struck by other vehicles, so this will be avoided by using a full time banksman.

Temporary pedestrian crossings will be used to guide the public away from the loading area.

Scaffolding and other access equipment:
To prevent people being struck while they are erecting, dismantling and using scaffolding and other access equipment; each subcontractor will have a supervisor who is responsible for the safety of the public and his operatives.

Storing and stacking materials:
We can reduce the risks associated with the storage of materials by storing materials within the site perimeter, preferably in secure compounds or away from the perimeter fencing. Most of the materials will be stored in the car park area.

Openings and excavations:
People can be injured if they fall into excavations, manholes, stairwells or from open floor edges. Adequate safety barriers and safety signage or covers will be used.

Other hazards include:
Slips, trips and falls within pedestrian areas, plant machinery and equipment, hazardous substances, electricity and other energy sources, dust, noise and vibration; and road works. Weekly safety audits will be undertaken to monitor and rectify any issues.

Vulnerable groups:
The elderly, children and people with certain disabilities may need special consideration as they may not fully appreciate the dangers of construction works. Some children are drawn to construction sites as exciting places to play, so we have a duty to do everything we can to keep them out of the site and away from danger.

The following specific steps are particularly relevant to child safety; secure the site adequately when finishing work for the day. Barrier off or cover over excavations and pits. Isolate and immobilise vehicles and plant and if possible, lock them in a compound. Store building materials such as pipes, manhole rings, and cement bags so that they cannot topple or roll over. Remove access ladders from excavations and scaffolds and lock away hazardous substances.

Considerate Contactors Scheme

We will register this project with the Considerate Contractors Scheme and comply with their requirements. The CCS notices and signs will be clearly displayed at the site entrance with Triton point of contact details displayed, the signs will be on the site fencing and in the site cabins.

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Working in accordance with the Considerate Contractors Scheme requirements and being audited will focus the site team on achieving a safe site, preventing disruption to the Respite Building and help us deal with the safety of the public.

It is important that the external appearance of the site presents a positive image and that the site is well organized, clean and tidy. Daily inspections of the site boundary and site access roads will ensure that rubbish and debris is quickly spotted and addressed.

Notice boards will be used to communicate the details to the public.

We strive to achieve the highest levels of safety performance and ensure safe systems of works are in place to care for the public, visitors and the site operatives. Consultation with the site operatives, training and good communication help to promote a positive attitude towards safety.

All our staff and operatives have CSCS cards.

Measures to Control Noise

Triton will ensure that noise control complies with the recommendations of BS 5228 to minimize noise levels during the execution of the works.

Noise testing will be completed at regular intervals daily during the periods of potential increased noise output and/or specific high output operations as detailed in this section below.

An example of the work at Elizabeth Street would be as follows.
During ground piling works when the drilling machinery and the process of drilling can result in increased and varied noise output, noise testing will be completed whilst the operation is underway at 9-30am, 12-30pm & 3pm daily. This noise testing intervals may be increased if necessary.

If at any time the noise levels exceed those recommended, we will stop the operation immediately, investigate the cause, and plan a method of work that maintains the noise levels within the required levels.

All high noise output operations will be dealt with in this manner.

Otherwise, operations that are not identified as having high noise output will be monitored weekly or at more regular intervals or as recommended or identified.

Initially, some operations may not be identified as having high noise output but during monitoring they are identified as producing high levels of noise. In those instances, the operations will be stopped and undergo the same process as detailed above.

Noise testing will be taken from specific site locations using the Site Managers noise meter reader. Controls will be put in place where noise exceeds 80 dB(A) when measured from the site boundary. Additional controls such as acoustic screens will be used to contain the noise if required.

Radios or other audio equipment will be prohibited, and Triton will not permit employees to use such equipment whilst on site.

All vehicles and mechanical plant used for the purpose of the Works shall be fitted with noise control devices (silencers, SMART reversing alarms) and shall be maintained in good and efficient works order.

All compressors shall be `sound reduced' models fitted with properly lined and sealed acoustic covers which shall be kept closed whenever the machines are in use, and all ancillary pneumatic percussions tools shall be fitted with mufflers or silencers of the type recommended by the manufacturers.

Machines in intermittent use shall be shut down in the intervening periods between work or throttled down to a minimum and plant and vehicles started up sequentially rather than all together.

Key operations on this project that involve high levels of noise and will require specific monitoring include the following;

- Removing and crushing existing concrete formation.
- Demolition works including the existing building of Elizabeth Street. This would include excavators with breaker units and the crushing unit.
- Piling operations. CMC/CFA and Vibro compaction rigs and associated support machinery – excavators and dumpers.
- General ground works excavator and dumper machinery.
- Steel frame installation including fixing guns.
- Floor slab power floating operations.
- Other key operations that are identified within RAMS as being high noise immitting.

Site activities will be restricted to site working hours approved by Planning/EA.

Measures to Control Vibration

Triton shall, as far as reasonably practicable, will not exceed the vibration dose values as specified in BS5228-2:200 Vibration Control in Construction & Open Sites & BS7385 Evaluation & Measurement of Vibration in Buildings.

Triton will employ vibration monitoring equipment for specific activities that include;

- Removing and crushing existing concrete formation.
- Demolition works including the existing building of Elizabeth Street. This would include excavators with breaker units and the crushing unit.
- Piling operations. CMC/CFA and Vibro compaction rigs and associated support machinery – excavators and dumpers.
- General ground works excavator and dumper machinery.

The ground conditions at Elizabeth Street require the foundations to be piled. Followed by excavation and concrete operations using excavators. This means there will be medium/low levels of vibration to disturb the surrounding properties. Vibration monitoring will not be required due to the construction design and method proposed. Where obstructions are encountered and need to be removed, specific risk assessments and method statements will be put in place prior to these works commencing to clearly detail how the vibration will be mitigated to the normal parameter levels allowed on a construction site.

The site team will have access to the vibration levels as activities take.
Those activities that exceed vibration recommendations will be stopped and assessed.

A review of the process will take place and an alternative approach taken if required.

These activities will be monitored to ensure vibration at the site boundary does not exceed those values detailed in the British Standards.

We will be aiming to maintain a 1.0mm/s PPV (Peak Particle Velocity) at the site boundary throughout the period of the constructions works. However, those operations that impose a higher PPV at the boundary such as piling, and ground works operations will be kept within the criteria set out in British Standards.

In order to mitigate the impact of vibration other site activities, site specific measures in accordance with Best Practicable Means (BPM) will be implemented and shall include the following:

- Scheduling of construction delivery vehicles to least noise sensitive times of the day.
- Scheduling of construction delivery vehicles to avoid where possible school start/finish times and AM/PM peak traffic periods.
- Time slots for bulk deliveries to ensure that convoys of vehicles do not arrive simultaneously.
- Strict control to prevent temporary parking on the kerbsides in the vicinity of noise sensitive roads in close proximity to the site.
- The use of sufficient clear signage to ensure that construction vehicles use only the designated routes.
- Restrictions on times when construction traffic can use the designated access highway to site.
- A temporary generator will be required for the first 12 weeks of the contract to run the site cabins, security cameras and compound lighting. A temporary electric supply will be installed to replace the generator after 8 weeks. The generator will be fitted with a Silencer and surrounded by an acoustic fence.

A RAMS will be developed for all activities involved in the earthworks/foundations and drainage and these measures will be incorporated in the Works.
All personnel will be reminded of good practice and standards through a series of "Toolbox Talks" and Safety Inductions.

Measures to Control Dust

As detailed in the BWB Air Quality Assessment table 5.1.
The key dust emission activities identified are as follows;

- Demolition
- Earthworks
- Construction
- Trackout

If material is being removed from site, then this operation shall be undertaken using covered vehicles, to minimise dust liberation.
Dust control measures shall be undertaken to the satisfaction of the Project Manager and EA. Works will be stopped if acceptable measures are not in place or being utilised. Dust control measures will include as a minimum the damping down of the site with water during periods of dry weather and when excavation works are undertaken.

The following monitoring works shall be undertaken by Triton:

- Daily visual recorded in site diary.

- Weekly monitoring of dust sitewide and at receptor locations.
- Occupational dust monitoring at the down-wind boundary of the site, for total inhalable and respirable dust.

BWB Air Quality Assessment table 5.5 & 5.6 are attached to the end of this document.
Assessment will be maintained on a weekly basis as a minimum in line with this schedule.
More frequent monitoring will take place when work activity and operations are deemed necessary.

Based on a subjective assessment, if dust levels are a nuisance sitewide; especially at the site boundary, then contingency measures for dust control shall be implemented.

Neighbour Contact, Complaints & Feedback.

Regular communication will be maintained with the local residents/businesses for the entire duration of the works.
Letter drops to local neighbours will be completed prior to the work commencing providing details of the responsible person for Triton Construction.
The same details will also be displayed on the site entrance notice board.

All neighbour complaints and feedback will be dealt with professionally by the Triton team.
Triton will provide feedback and a response to all such complaints within 12 hours of receipt.
Our aim will be to rectify any issues resulting from our activity and agree a mutual way forward with the complainant.

A CCS feedback form will be displayed within the site office to record the ongoing process.

Fuel Storage and Vehicle Refuelling

Triton will ensure that any fuel required for plant shall be stored in double bunded tanks placed within areas of bunded impermeable surfacing. Refuelling shall be undertaken so that any spillage is collected on a spill tray and disposed off-site. Toolbox talks shall be held by Triton in order to ensure that the operatives are fully aware of correct refuelling procedures.
Environmental spill kits will be available on site for the full duration of the works.
Any spillages shall be reported immediately to the Project Manager, immediately cleaned and cleared in an approved manner and any contaminated sub-soil disposed of in the correct manner.

Site Start Up Strategy:

Due to the location of the Works, Triton Project Manager to deal with all aspects of the interfaces with Highways and the public. The Project Managers details will be given to all Parties and displayed alongside the Considerate Contractors Scheme Details.

Triton will ensure a 'Letter Drop' to all the surrounding properties is untaken several weeks prior to the works commencing, this will allow time for people to contact Triton and for us to meet with them to discuss any concerns they may have.

Liaison meetings will be held with the Client, and his Project Manager, stakeholders and other third parties to understand their day to day requirements and that of the construction site. This will be included but not be limited to, delivery/collection times and routes, refuse collection days, fire escape routes, opening times, working hours for the construction site and any out of hours working, if required.

Protective clothing and equipment will be provided and maintain on site for the Client and other visitors to the site.

A self-contained welfare unit will be used until the site cabins are installed.

A secure heras fence will be erected to the compound and site areas with safety, wayfinder, and information signs clearly displayed. The secure fencing will be erected in line with the designated site boundaries and will segregate construction activities and construction traffic from the general public and on-site personnel whilst maintaining full access/egress for the deliveries, staff, refuse collections and visitors.

Pedestrian routes through the construction site will be demarked with Chapter 8 and/or pedestrian barriers.

It is proposed that all contractor parking will be within the compound area opposite the site. Compound areas will be provided for across the site during the construction period. Segregated construction vehicle access routes and pedestrian walkways will be set up and clearly marked.

We will undertake a below ground utility survey of the land adjacent to the existing building and to the temporary access road route to ensure any existing services remain unaffected by the temporary compound/cabin location.

The temporary site compound is for site cabins, welfare facilities and associated plant and for parking our contractor's vehicles.

Site Access, Compound and Parking:

Safe pedestrian and vehicular access, including emergency and refuse collection vehicles, will be maintained at all times.
Any scaffold or windows from the offices, meeting rooms, welfare cabins that can overlook the private resident buildings will be covered to prevent the observation of the clientele.

Our aim is to have an excellent relationship with the Client and local residents which will be maintained throughout the project, we will work with the Client and their requirements and not jeopardise our relationships through inconsiderate, or poorly planned/coordinated activities.

We will discuss logistics, planned deliveries and vehicle movements with the Client and we will provide the Client with a schedule of our planned vehicle movements/ deliveries etc. prior to each of the Client's operational coordination meetings.

The Construction Works:

Our aim as the Principal Contractor is to ensure the project is managed to achieve a target of zero accidents and zero risks to health. Good communication and liaison between the Client, his Project Manager, Triton site personnel and the design team members is critical to the smooth running of the contract. We will hold regular safety and co-ordination meetings with all contractors and sub-contractors working on the site and ensure there is a flow of information between all parties regarding the health and safety on the project.

All personnel wanting to enter the Triton site must have our site safety induction prior to starting work the site.

Construction Health, Safety and Environmental Plan:

The Construction Phase Plan will be presented to the Client no later than two weeks prior to the commencement on site. Works will not start until the Client has confirmed in writing that the Construction Phase Health and Safety Plan is sufficiently advanced for the works to commence.

Construction Strategy:

The site will be CAT scanned, trial holes excavated to positively locate known services and the invert levels of all the drains will be confirmed.

Clear and safe access will be maintained at all times to the entrance of the new building. They will be maintained with adequate safety fencing and signage being put in place.

Emergency procedures will be relayed to our site personnel and any visiting personnel during the Triton safety induction process.

'No Go' Areas and Authorisation Requirements – Access to any other area outside of the site must be via permission from the Owner, Client, and Triton. All Triton staff and operatives will wear identification PPE when working outside our site boundary area.

A regular site logistic plan will be produced and discussed with all parties in advance of the works commencing.

The sequencing and challenges of the external works is high risk. In summary the key items to be considered and the risks mitigated are:

- Ensuring there is as little disruption to the existing road as possible.
- Working near the public.
- Working alongside Other Clients Contractors.
- Avoidance of trip hazards.
- Crane lifts.
- Pollution of the canal & waterways.
- Secure and safe transportation of operatives, materials, and plant from the compound to work areas.
- Ensuring the public do not come into contact with construction works, excavations, plant or operatives.
- Ensuring there are no 'false' fire alarms and Fire Plans are reviewed as activities on site change.
- Ensuring the public do not gain unauthorised access to the site areas.
- Provision of security cameras and supplemented by man guards when deemed necessary.
- Clear Wayfinder and safety notices.

- Adequate Safety fencing and pedestrian routes.
- Radio communication – this allows one point of contact to deal with any issues safely and swiftly.
- Avoiding damage to the existing aqueduct, footpaths, trees, buildings and car parks.
- Avoiding damage to the existing services/drains.
- Maintaining delivery/collection and all access routes to the adjoining buildings and roads.
- Providing adequate noise, vibration and dust suppression. Use of acoustic screens if required.
- Informing staff and operatives on how to deal with the Public, and visitors.
- Maintain fire escapes and emergency vehicle access routes at all times.
- Clean and tidy work areas and access routes. Provision of road sweepers.
- Out of Hours working to be worked if required.
- Full time supervision of the quality.
- Consideration of Environmental restrictions; noise, vibration, dust and the like.
- A Project Risk Register will be produced, used and reviewed weekly to remove the risks or mitigate them.

Commissioning

All subcontractors are responsible to check and commission their works prior to offering the works for inspection by Triton site staff and our internal Quality Manager.
Once all the systems have been run, tested, commissioned and inspected will they be offered to the Client's consultants to inspect.
A full set of As-Builts and test certificates will be included in the O+M manuals and building logs.

Security

We would provide security cameras with a response team monitoring the site 24/7 when required. If this needs to be supplemented with a 24-hour manned guard to ensure the security of the site/building, plant and materials then we will provide this.

This is a typical remote-control camera that our security subcontractor uses:

Security of the sites will be by means of robust security fencing installed around the construction site and compound. Safety signage, emergency signage, wayfinder signage and considerate constructor's signage will be clearly displayed.

All Triton staff, visitors and construction personnel will where hi vis vests with a Triton logo or subcontractor company logo on the back.

Site Liaison and Meetings

During the mobilisation period and all during the construction works communication and liaison between all parties will be key to a successful contract. By forming close links with the Client and

his Project Manager and surrounding properties/residents, we will get a clear understanding of their concerns, thus allowing us to work with them to avoid any disruptions to their everyday operations and they will get an understanding of the construction process, programme dates and our delivery requirements.

Regular meetings will be held to review the construction programme, key dates and the duration of each construction activity will be discussed and the implications on the surrounding areas of the site can be assessed.

This will allow the risks to be considered, a risk register produced and the preventative controls put in place prior to the works being undertaken on site.
We will ensure that we are aware of any planned events during the construction works. To avoid any interruption to these planned events then good planning and communication is essential. By discussing these events early, we can all work together to understand which construction activities and deliveries are happening and then assess the risks and put in place risk mitigation measures.

It is essential that we comply with all the Health, Safety and Environmental requirements especially whilst working outside our site boundary between the separate site areas. Good programming, communication, RAM's and a knowledge of the surrounding building uses will help prevent any incidents/accidents.

If an incident takes place then the works will cease whilst the incident is investigated and corrective measures introduced so that it cannot happen again.

The Project manager will deal with all enquiries/concerns/incidents. If he is away from the site for holidays/illness then the duty liaison manager available on site. Contact details will be displayed around the site. The Triton Project Manager will hold regular meetings with the Client to ensure a good relationship is achieved and maintained and that any concerns are dealt with quickly. The Project Manager will set up a complaints procedure so complaints can be investigated, and the finding then learnt from and communicated to all parties. The use of feedback questionnaires with regular reviews will be used.

Meetings

Triton would hold a formal regular meeting, where detailed information regarding the forthcoming works schedule can be shared and discussed between all concerned parties.
An agenda will be issued in advance of the meeting, setting out the key items for discussion, including:

- A two weekly programme of works, (updated weekly), along with marked up phasing drawings to be issued and discussed with all attendees.
- A schedule of deliveries / collections.
- Security arrangements / requirements.
- Access Requirements.
- Daytime & Night time activities.
- Directional Signage requirements.
- Concerns or Issues to be raised.
- A review of previous and current actions and activities.

It would be intended that the weekly meetings are recorded by each team member, noting the date, time & location of the meeting, attendees present / absent, items requiring action, by whom and by when. Items agreed and information issued or items discussed.

Daily Liaison

In addition to the formal weekly meeting, Triton will undertake a daily informal meeting, to discuss the day's activities, along with any sensitive works planned for out of hours. Immediate issues and concerns can also be addressed at this time.

Project Team Meetings

We will hold a fortnightly meeting with the whole team, where CPUK Group will provide a contractor's report, with an update on programme, progress and any concerns, actions or required information can be discussed.

Contractor Progress Meetings

We will hold a monthly Project progress meeting on site, with the whole team, where Triton would provide a contractor's report, with an update on programme, progress and any concerns, actions or required information can be discussed.

Quality Inspections/ Handover and Aftercare Management

Triton uses a Quality Management System, and we enrol all our subcontractors and suppliers into achieving a high standard of quality. We hold prestart quality meetings with all
our subcontractors before they start on site, and we hold 4 weekly quality meetings throughout the contract.

Time has been allocated during and at the end of build sequences to enable the Client/Designers to inspect the works and if necessary, any remedial works will be undertaken immediately. The quality inspections will be progressive to give us all time to inspection/snag out the works prior to handover.

On our construction programme, time has been allocated during and at the end of build sequences to enable the subcontractors, then Triton followed by the Client/Designers to inspect the works and if necessary, any remedial works will be undertaken immediately. The quality inspections will be progressive to give us all time to inspection/snag out the works prior to handover. This will ensure a defects free handover at practical completion.

On Completion of the Works

Triton will co-ordinate the design team, sub-contractors, and their designers to ensure they produce final issue / as build records and drawings, along with sufficient information relating to the design, of the structure, its construction and maintenance, to satisfy the requirements of the Health & Safety file / Operation & maintenance manuals.

Triton Construction

Pictures of existing entrance view along Elizabeth Street

Triton Construction

Triton Construction

BWB Air Quality Assessment Criteria

Table 5.5: Mitigation Measures for a **Medium Risk Site**

Category	Mitigation Measures for a Medium Risk Site	
	Highly Recommended	**Desirable**
Communication	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	None
	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environmental manager/engineer or the site manager.	
	Display the head or regional office contact information.	
	Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority.	
Site Management	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner and record the measures taken.	None
	Make the complaints log available to the local authority when asked.	

Triton Construction

Category	Mitigation Measures for a Medium Risk Site	
	Highly Recommended	Desirable
	Record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book.	
Monitoring	Carry out regular site inspections to monitor compliance with the DMP, record inspections results, and make an inspection log available to the local authority when asked.	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100m of the site boundary, with cleaning to be provided as necessary.
	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	
Preparing and maintaining the site	Plan the site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	None
	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	
	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extended period.	
	Avoid site runoff of water or mud.	
	Keep site fencing, barriers and scaffolding clean using wet methods.	
	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.	
	Cover, seed, or fence stockpiles to prevent wind whipping.	
Operating vehicle/ machinery and sustainable travel	Ensure all vehicles switch off engines when stationary – no idling vehicles.	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Triton Construction

Category	Mitigation Measures for a Medium Risk Site	
	Highly Recommended	Desirable
	Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	
Operations	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	None
	Ensure an adequate water supply on site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate.	
	Use enclosed chutes and conveyors and covered skips.	
	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.	
	Ensure equipment is readily available on site to clean and dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	
Waste Management	Avoid bonfires and burning of waste materials.	None

Triton Construction

Table 5.6: Mitigation Measures Specific to Demolition, Earthworks, Construction and Trackout

Category	Mitigation Measures	
	Highly Recommended	Desirable
Demolition (Medium Risk Site)	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).
	Avoid explosive blasting, using appropriate manual or mechanical alternatives.	
	Bag and remove any biological debris or damp down such material before demolition.	
Earthworks (Medium Risk Site)	None	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
		Use Hessian, mulches or tackifiers where it is not possible to re-vegetate

Triton Construction

Category	Mitigation Measures	
	Highly Recommended	Desirable
		or cover with topsoil, as soon as practicable.
		Only remove the cover in small areas during work and not all at once.
Construction (Medium Risk Site)	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.	Avoid scabbling (roughening of concrete surfaces) if possible.
		Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery.
		For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust.
Trackout (Medium Risk Site)	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any materials tracked out of the site. This may require the sweeper being continuously in use.	None
	Avoid dry sweeping of large areas.	
	Ensure vehicles entering and leaving the sites are covered to prevent escape of materials during transport.	
	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.	
	Record all inspections of haul routes and any subsequent action in a site log book.	
	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned.	
	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	
	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.	
	Access gates to be located at least 10m from receptors where possible.	