

Construction Management Plan

Project: Viadux Development Phase Two

Date: 06/12/2021

Revision: 1

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1.0 Introduction

1.1 Statement of intent and overall control strategy

Domis are committed to maintain a dynamic and robust integrated management system. This will ensure that we deliver everything we do in a safe sustainable manner and to a high standard which meets or exceeds our customer's expectations.

We are committed to achieving excellence through:

- Preparing and implementing programmes and systems to benefit the integrated management system to ensure that it is continually improved and remains effective.
- Establishing and setting objectives and targets and closely monitoring their implementation.
- Empowering our people and our supply chain to be proactive in suggesting improvements to the processes, procedures and related documentation.
- Developing and training our people in both quality management and delivery.
- Engaging with our people on all matters to improve and embed learning across the business.
- Providing sufficient resources to enable this policy to function effectively and to ensure that this policy is regularly reviewed and communicated to all employees, our supply chain and stakeholders
- Complying with applicable regulatory, customer and other requirements.
- Conducting regular internal audits and management reviews.
- Seeking feedback on performance from stakeholders, our supply chain and employees.
- Implementing mechanisms which encourage the identification of best practice and drive innovation.
- Generating a commitment amongst all employees and our supply chain to provide the service delivery and workmanship required by our customers.

Domis's policy will be delivered by generating a culture which actively encourages exemplary management practices and insuring the real involvement and participation of all our people, our supply chain and stakeholders.

1.2 Existing development site

The current site located on Great Bridgewater Street is currently a site which is formed at ground level of the Arches underneath the Manchester Central service yard area, punches through the arches to create a 2nd floor transfer structure with 14 levels in total. As covered under planning permission 115871/FO/2017.

1.3 Summary of new works proposed

The project involves the construction of a 14-storey commercial office building comprising of a ground floor with major incoming utilities, plant rooms and servicing areas. The building is located within the Victorian arch's underneath Manchester Central service yard area. Prescriptive project controls have been established and discussed with English Heritage, Manchester Central and Manchester City Council to ensure the smooth running and safety of all of the city centre uses, residents and local businesses.

2.0 Overview- Nuisance mitigation measures

2.1 Health and safety

The risks associated with each identified hazard and their specific management controls are recorded on the Overall Project Risk Assessment form held in the Construction Phase Health & Safety Plan.

Control measures are generally; activity risk assessments, point of work risk assessments, method statements, inspection and test plan and permits. Information from the assessment is issued to subcontractors to identify the particular control documents required before starting the work. Records of the preparation, approval, receipt, issue and communication of all risk assessments, method statements and permits are maintained on file.

2.2 Minimising disruption to ongoing use of adjacent buildings

The continuity of existing site operations will be at the heart of all our planning and delivery of the project. We will use the following hierarchy:

1. Protect and maintain all existing adjacent buildings operations and services
2. Protect and maintain all existing highway and footpath operations and services contained within
3. Management strategy to accommodate the continued use of the Manchester Central Service yard.
4. Use construction methods that are appropriate when working close to site users and staff
5. Plan and communicate on the above basis.
6. Deliver, monitor and control activities

We will continue to develop our plans in more detail as we move through to the next stage ensuring that, at any one point in time, all site users can continue to access the site

unimpaired, that all site ME&P services remain live, that deliveries and visitors can access necessary areas and that site fire escape and muster points are protected.

Clear and safe dividing lines between site and construction operations will be created and adapted to suit controlled changes.

2.3 Construction noise and vibration

Operations such as piling and reduced level dig can produce significant levels of noise close to the site boundary. We will minimise the impact of this and other noise pollution through the following processes:

- Use construction methods that minimise noise i.e. crushing as opposed to percussion tools; CFA piles as opposed to driven piles etc
- Ensuring haul roads and busy access routes are positioned away from occupied buildings
- Use of temporary enclosures local to the work area
- Ensuring the machinery or tools are in proper working order
- Positioning of plant as far as possible from adjacent buildings
- Advance notice of noisy works

As the majority of these works are contained within the Arch structures the noise breakout should be greatly reduced from a normal construction site.

Regular meetings with site staff and neighbours will highlight their concerns, and our construction methods and programming will be reviewed and adapted around their requirements.

Liaison will also occur with the LA pollution team to ensure 'Control of Pollution Section 61 agreements' are maintained.

This construction management plan and our detailed works plans have taken into account the contents of the Noise and Vibration section of the EIA, we have assessed the noise impact of the site and at present due to the enclosed nature of the works which we would foresee as generating more noise, such as piling, excavations the noise impact of this site will be minimal, as stated in 2.3 above.

The works above the arches level will all fall within the required thresholds set within Chapter 10 of the EIA and confirm this Construction Management Plan follows the mitigation strategy set within table 10.25 of the chapter for construction noise.

2.4 Dust and Mud

The control and management of dust created through activities such as traffic movement, excavating material, breaking out of the existing brickwork/concrete piles or drilling operations will be managed through the following processes:

- Dampening of the ground surface to prevent air borne particles being carried by the wind
- Avoiding dry cutting materials such as concrete or bricks
- A traffic speed limit on the site to minimise disturbance of dust on the ground by site transport and delivery vehicles
- Using surfaced roads where possible for traffic movements on site
- The use of screens around the working space to contain any dust disturbed
- The use of debris netting to the perimeter of the concrete structures to contain loose debris
- Ensuring spoil being transported from site is in covered wagons

Road sweeping will take place on a regular basis to the site compound, access road and local highway to eliminate mud and debris being transferred the surrounding road network from site.

Within the section 2.4 above we have outlined the principle steps we will take to comply with the contents of the EIA, chapter 14, appendix 14.2, (IAQM), and for further clarity have provided further detail on our management plan to comply with the IAQM;

Communications Plan; as defined in this document we have provided details of our communication strategy and action plan within 2.11 and 3.1 of this plan, this provides details of the display of contact details, newsletter production, emergency and complaints contact information.

Our dust management plan is shown in principle above, 2.4, however we would add the following;

The first phase of construction is within a contained within the arches section of the Viadux site, this is for the piling, earthworks and groundworks element of the project and the programme duration is for 40 weeks commencing Feb 2022. The second phase of construction is for the breakthrough of the Arches to form the structure for the tower above this will involved very delicate and controlled works which as stated above will have a number of dust mitigation measures in place such as;

- Screening off works areas
- Dampening and using techniques which mitigate dust production.

To align with the above, visual monitoring of dust on access and egress routes and adjacent to the site will be carried out, including parked vehicles, visible surfaces and if any concerns arise then activities will be reviewed.

As required we will also assess the need for monitoring over and above the visual inspections via suitably located frisbee gauges.

2.5 Fire protection

On contract commencement the Project Manager will appoint a competent person to act as Fire Safety Coordinator to control fire evacuation and muster checks.

The Project Manager and the Fire Safety Coordinator will conduct a fire assessment to determine all potential fire hazards, the employees and other site users at risk and the fire safety arrangements. This will be recorded on the Fire Assessment and Arrangements Form.

Following completion of the Fire Assessment and Arrangements an action plan will be

produced by the Project Manager and Fire Safety Coordinator to ensure all potential hazards are eliminated and all fire safety controls are in place prior to taking occupancy.

The Project Manager and Fire Safety Coordinator will ensure the content of the completed Fire Assessment and Arrangements is added to the Contract Management Plan.

The Project Manager will ensure the fire arrangements form part of the induction process and that all individuals are aware of the fire evacuation process. The Project Manager will ensure a drawing showing site / office layout and firefighting arrangements is displayed at strategic locations. A Fire Notice is available to record this.

The Project Manager will nominate and arrange training for Fire Wardens. Consideration must be given to cover holiday and illness absences. The names of the Fire Wardens will be communicated. A Fire Notice is available to record these. The Fire Wardens will attend the relevant training, ensuring they fully understand the content and their overall responsibility.

The Fire Safety Coordinator will establish a Fire Safety Inspection Record for each location for each calendar year. This will be used to record Weekly Checks; Emergency Evacuation Drills and Annual Equipment Checks

The Fire Safety Coordinator (or his nominee) will undertake weekly checks on Fire Extinguishers; Fire Escape Routes; Fire Signs; Fire Alarms and Fire Brigade Access. This will be recorded on the Fire Safety Inspection Record

The Fire Safety Coordinator will undertake practice emergency evacuations at approximately six-monthly intervals for locations where there is a static workforce, for locations where there is a high turnover of staff this frequency will be increased. During the emergency evacuation the Fire Wardens will adequately perform their duties and feedback any issues to the Fire Safety Coordinator.

Where the alarm goes off for an unknown reason, but it becomes apparent there is not an emergency situation the alarm should be allowed to continue, and the building evacuated to prevent confusion in the evacuation and treated thereafter as a practice drill. The Fire Safety Coordinator will record the details on the Emergency Evacuation Record and the Fire Safety Inspection Record. Where actions have been identified these will be transferred to the Fire Assessment and Arrangements Form.

The Fire Safety Coordinator will ensure all firefighting equipment is tested on an annual basis by a competent person. These will be recorded on the Fire Safety Inspection Form. The Fire Assessment and Arrangements will be reviewed on an annual basis or after any event which may affect its content, such as alteration or substantial changes in occupancy.

2.6 Light pollution

Site lighting will be carefully considered to ensure the required level of safety and security is achieved without causing excessive nuisance to neighbours. Floodlights will be located to provide the necessary site illumination and the lamp-heads will be specified to minimise overspill and directed to shine onto site. All tower cranes will have air-craft warning lights

fixed to the upper part of the crane and jib.

2.7 Ground and watercourse pollution

Method statements for the works will be devised to take account of contamination risk and the effective management of that risk:

- All materials / processes will be handled / undertaken strictly in accordance with the suppliers / manufacturer's recommendations
- All bulk solid, granular, liquid materials will only be stored on site in (limited) quantities necessary to meet the requirements of the construction process
- All liquid materials will be stored in suitable containers, adequately banded to comply with Health, Safety and Environmental legislation / recommendations
- Sensitive areas will be subjected to specific protection regimes
- Spillage reaction / clean-up plans will be in place to be undertaken by a trained squad of personnel
- Specialist cleaning equipment will be placed in key locations around site to minimise any spillage should it occur
- All waste materials will be controlled / sorted into the appropriate waste containers on site prior to removal by an authorised / licensed waste carrier
- Interceptors will be used to remove solids etc from any site discharges, which may, with the agreement of the Local Authority be made into the surface water drainage system

2.8 Trees and existing hedge rows

This section is not applicable due to the fact that there are no hedgerows or trees on site.

2.9 Site Housekeeping

Throughout the project we will encourage and enforce an excellent housekeeping regime. A strategy will be developed and incorporated into the Site Rules which will be sent to suppliers and supply chain partners alike. The strategy will also form an essential part of the supply chain / suppliers pre-order interview.

We will ensure that all operatives engaged on the works are familiar with the work in progress, skilled at their task, aware of their duties and responsibilities to others and knowledgeable of the Site Rules. All persons working on site will attend the site safety induction and commit to the site rules.

2.10 Waste management proposals

We will operate a site wide waste segregation removal procedure. Recycling areas will be located on the service yard level and ground floor of the site. Waste wheelie bins will be situated in designated areas which will be filled by the subcontractors and taken by them to the recycling areas.

Waste reports will be created on a monthly basis which will detail the quantity, type and percentage of waste being produced, with the percentage of recycling achieved.

Waste control will be reviewed with the contractors during the procurement process to

minimise packaging on deliveries and encourage removal of their own waste such as plasterboard, pallets, paint pots and cable drums.

The specialist contractors will work with the design team during the design stages to find the most efficient and economical solutions in reducing waste during the construction phase. In addition, the strategy for maximising the levels of works through prefabrication off site will further reduce waste generation.

2.11 Liaison with community.

We will keep our neighbours well informed before and during the construction phase through various means: A member of the Domis team will be designated as the Project Community Liaison Manager responsible as a single-point contact to ensure good neighbour relations. A regular residents' meeting will be established at a frequency agreed with the residents to bring them up to speed with project progress and key elements of the work. It also provides an open discussion for residents to voice concern or highlight issues.

Newsletters will be widely distributed to identify completed works and focus on forthcoming activities to give neighbours early notice of such works. Information displays in prominent locations will contain various project-specific information.

A 24-hour emergency contact number will be established to allow concerns to be raised, these will be actively dealt with by the Domis Project Community Liaison Manager until the issue is resolved.

2.12 Site hours

Working hours will be in line with the LA planning requirements. These are anticipated to be 07.30 – 18.00 Mondays to Fridays and 08.30 – 14.00 Saturdays. No work on Sundays or Bank holidays

3.0 Construction Logistics and Construction Processes

This section contains statements and plans for traffic management and construction logistics for the works. Statements and plans to cover the following;

3.1 Traffic management, Construction Logistics and Construction Methodology

3.1.1 3rd Party Consultation

We have consulted with and will continue to consult with various 3rd parties over the construction of the 14 storey commercial office building, these include;

Manchester City Council (MCC) – Catherine Spencer Event and Specialist Co-Ordinator and Ben Phillips Event and Traffic Management Officer for Manchester City Centre Piccadilly and Deansgate wards.

Manchester Central – Formal discussions were held between Ask real estates and Manchester Central prior to contractors' involvement these have been reinforced with a further initial detailed meeting to review the impact that the development will have on

Manchester Central during the project duration, these meetings will continue to enable agreement of all phasing whilst the sub-structure elements will be ongoing.

Manchester City Council

We have developed a site layout that is based on the minimal interference with transport network, a copy of the same is attached and we are in the process of confirming further meetings and dialogue with the Council, as necessary.

Wider Manchester City Centre Issues

There is a large amount of construction work going on in the city centre and the roads around the site will be subject to road closures and diversions over the course of the project. We will require a 5-day road closure for the erection and removal of TC1, closures are also required for the Bridge removal on Bridgewater St, as well as a closure on Great Bridgewater Street for the duration of the project. We also note the Hilton Tower also has planned window replacement works so diversions will be in place and have had sight of the works being completed from the compound but not the wider road network.

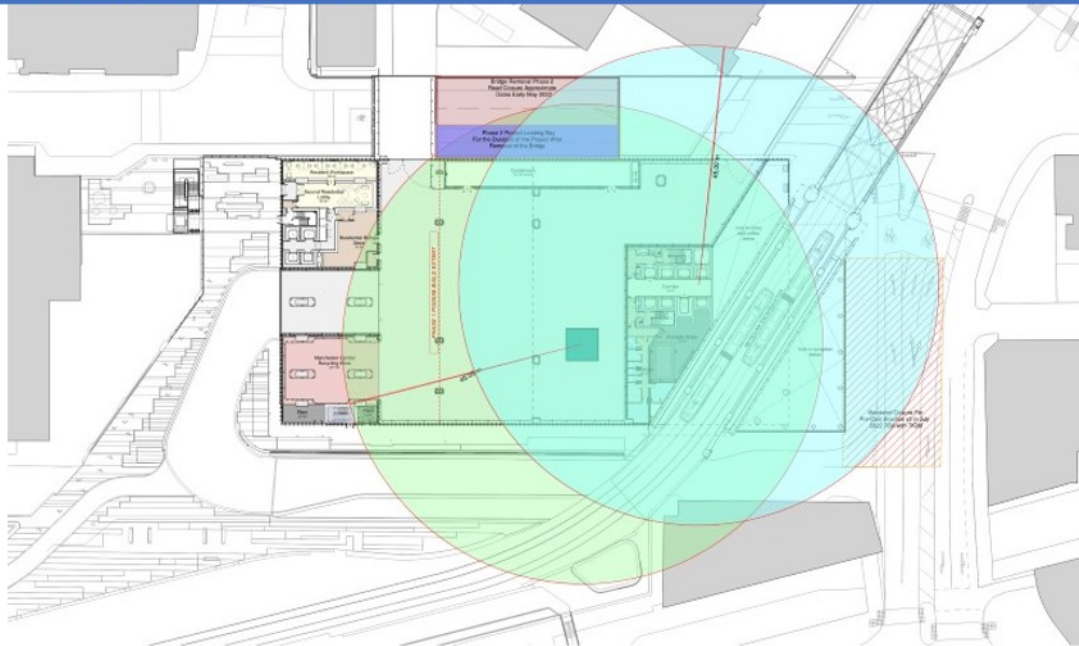
3.1.2 Site Vehicle access restrictions

The site will operate a strict vehicle one-way access regime, with only one vehicle being allowed into site at any time, the rest will be held off site and called in to site when the space is available. No vehicle holding will be allowed in the adjacent streets. Parking for site staff and operatives will not be allowed on site and they will have to use the existing public car parking in the city and through the use of public transport. There are a number of public car parks in close proximity of the site such as the Great Northern Warehouse, Little Peter St. Q-Park at First St. and the train and tram networks are all within walking distance, e.g. Deansgate, Manchester Oxford Rd.

3.1.4 Tower Cranes

We have developed our lifting strategy around a two tower crane approach to the project.

TC 1 will be erected to construct the slip formed core and frame from levels 2-14, no oversailing will be required apart from a small amount on the Highways, which will be concluded with the requisite Oversailing license from MCC. TC2 will be erected on the core and will assist in erection of the frame from levels 2-14.

Proposed Site Logistic For Superstructure Works

Road Closures will be required to rig and de-rig the cranes and this will be agreed with MCC once exact dates are known, at present the erection is shown;

TC1 Erection: 11/1/0/2022

TC2 Erection: 13/09/2022

TC1 Dismantle: November 2023

TC2 Dismantle: January 2024

3.1.5 Site Establishment and Enabling Works

The Arches (below service yard) of the existing Victorian Viaduct are in place, as they retain the existing footpaths and foundations. Vibration monitoring equipment will be installed as agreed with the Engineer.

The main site establishment and accommodation is located on the land marked in the diagram below;

Domis \ Manchester Central Compound Locations for Phase 1 & 2



General Methodology section

4.4.1 The general sequence of the works is as follows;

Phase 1 – Completion of opening up works and surveys for design items.

Phase 2 – Site preparation and archaeological dig within the arches.

Phase 3 – Piling and Sub-structures and temporary works including arch intervention operations

Phase 4 – Construction of Main core and structure up to level 14

Phase 5 – façade installation to all blocks

Phase 6- Internal fit out and site commissioning

3.1.6 Site Commencement

We will have site offices, welfare units and storage containers set up off-site within the Salvation Army piece of land, that will service the operations on site.

3.1.7 Piling and substructure Works

The restricted head height piling rig and concrete agitator will be delivered and operate within the site boundary, working on pile mat and in line with

When the piling works have been completed, we will commence excavation of the Ground floor raft sections as well as install the cast in drainage runs.

Drainage runs outside of the main raft bases will be cast as the first activity to allow them to be backfilled for storage and transport movement purposes.

When the ground floor slab has been cast, we will begin setting up for the columns and core and the related breaking through works to the arches.

These works will be formed through the arches and then the level 2 transfer structure will be completed.

3.1.8 Slip Formed Core.

We will erect TC 1 and commence construction of the slip form rig. During the pre-construction period we will design and procure the equipment, ensuring that the structural stability of the core is maintained in its temporary condition. The rig will be fully encapsulated to ensure that no materials fall out or blow off the structure.

As the slip form core progresses, we will install the pre-cast stairs to gain permanent access up the building. A hoist will be progressively installed to feed men and light materials to the top of the construction work face.

3.1.9 Floor Construction

When the slip form is completed, work will commence on the construction of the lower steelwork floors up to level 4 which includes large truss arrangements

The slip form rig will be de-constructed and craned off the top of the core, the capping slab will be constructed.

When the structure is up to finished level, we will then use the Tower Crane to install lift in to place the Building Maintenance Unit (BMU).

3.1.10 Double high-speed hoists.

The gantry also supports the bottom of the two high speed passenger and goods hoists. Access into the hoists will be from level 2.

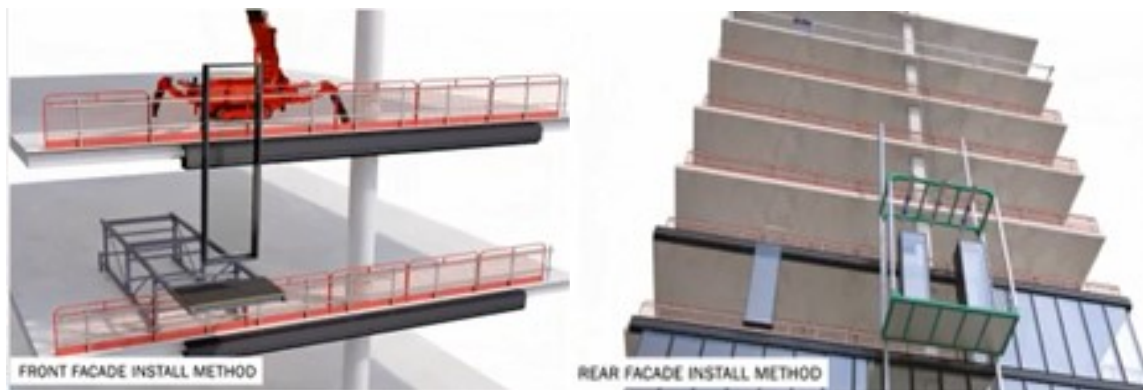
3.1.12 Unitised Curtain Walling

The unitised curtain walling will commence when the structure is sufficiently advanced.

A team will work ahead of the installation fitting brackets to line and level into the halfen channels cast into the floor slab.

We will load out the curtain walling frames using the main hoists that will be distributed on to each floor plate or via crane onto loading platforms at floor level. The facade will be installed using the method of positioning the individual curtain walling panels on a sliding table, connecting on to the overhead floor crane and pushing the units out over the floor edge, turning the panels and connecting them to the lower floor, whilst securing them using the overhead fixing bracket. The process will be repeated until the whole elevation is complete.

For the larger end glass panels, we will need to utilise the Tower Crane to lift them in to position.



We will design the Unitised Curtain Walling system so that we can leave out the bay where the hoists need to access the building. The intention is to strip out the landing bridges when the floor has been sufficiently loaded out and substantially complete, then infill the unitised windows and panels on that floor, to allow the final fit out of the last unit.

3.1.15 Lift Installation

When we have completed the core structure and capped and have sufficiently advanced the core area floor slabs, we will commence with the installation of the passenger lifts. Owing to access restrictions and handling of materials we will fit out each lift shaft, before commencing the next and so on. By completing the lifts early, we will get beneficial use of the lifts progressively. This will mean that the upper floors of the project will be serviced by the two high speed lifts as well as a minimum of two passenger lifts.

3.1.16 Office Fit out

Fit out of the office areas is minimal and will be completed floor by floor with a 2 week stagger between each floor, with each floor having a 16 week duration

3.1.17 Working within and in relation to the Listed arches

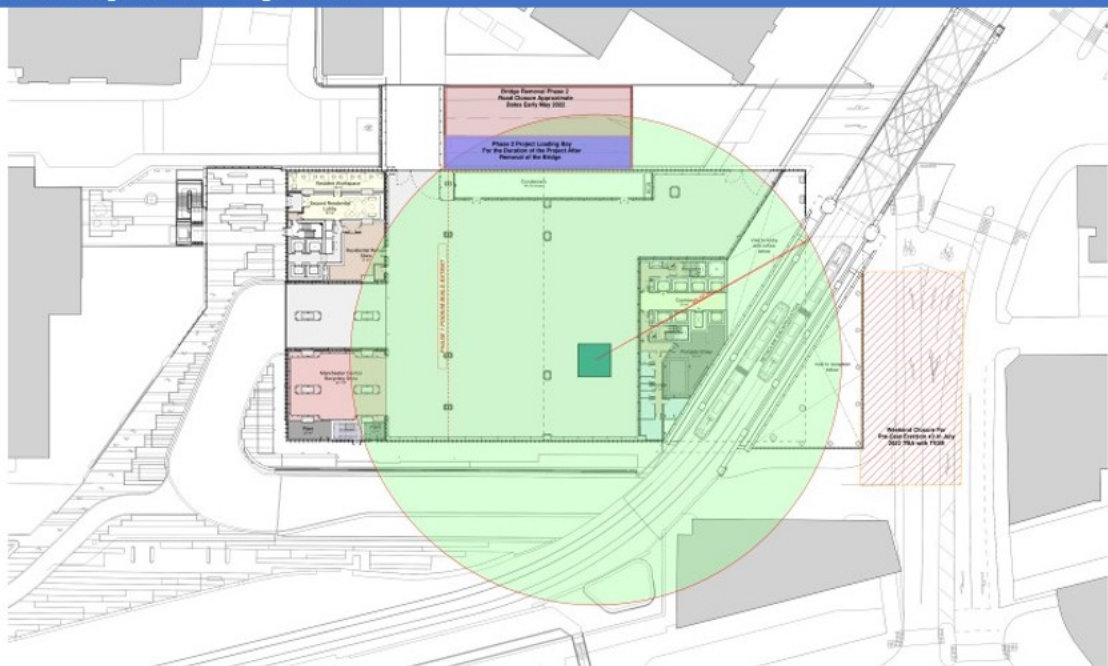
Due to the nature of the project and its location within the grade 2 listed Viadux, the methodology for all these elements or work are subject to separate listed building consent.

A number of meetings have been held with TfGM to agree general principles around constructing an encasement around the tram asset the section above provides the indicative details to show the elements of in-situ concrete works and pre-cast concrete which ensures the tram is protected from both the construction of the works and also when completed any risks when carrying out regular maintenance, etc.

There are a number of aspects of these works which require final approvals from TfGM and the intent is to secure these through an agreed Asset Protection agreement which is in negotiation at present.

These works will take place between the end of February 2022 and November 2022. Exact dates are to be agreed between TfGM, Domis and MCC Highways department as there are elements which have to be completed on possessions and will require closures of Albion Street as indicated on the plan below;

Proposed Site Logistic for Forming the Core



The Asset protection agreement will in particular deal with the requirements of planning conditions 9,10, 11 and 12 and a programme will be submitted to provide clear timescales of this.

A scope of approvals and design submissions has been issued to TfGM to align expectations and form the basis of the design review and approval process a copy of this is shown below;

“Viadux Phase Two – Stage 3 information issued

Deliverables to be issued:

- Risk assessment
- Outline structural proposals (including proposals on structural movement and tolerances, i.e. monitoring and movements).

- General Arrangements from Architects
- Façade bay study and maintenance strategy (area over TfGM asset)
- Outline fire strategy
- Draft build programme and methodology

“Approval/Comment from TfGM of Stage 3 information:.

Approval and comments status A, B and C.

Meetings required

During this period a minimum of one meeting will be held

Viadux phase two stage 4 information issued

Deliverables

Civils and Structures

- Updated risk assessment (if necessary)
- Structural technical design proposals – drawings, specifications, and reports, broken down elementally:
- Structure for the encapsulation – Detailed drawings incl. piling, RC works and Pre-Cast and calculations.
- Detailed structural design philosophy for tram encapsulation
- Structure for the buildings (Stage 3+)
- Detailed programme and methodology.
- Emergency preparedness plan

Architectural and other consultants

- Updated Architectural information as necessary.
- Updated information on fire and maintenance as necessary.

Meetings required

During this stage meetings proposed every two weeks.

Final presentation meeting to run through deliverables above.

Approval/Comment from TfGM of Stage 4 information:

Approval and comments status A, B and C.

Viadux construction stage.

Only to be issued if significant differentiation from approved stage 4 information.

Site specific items such as movement and vibration monitoring readings, construction programme and methodology review done by agreed meeting's frequency suggested at one every two weeks.

On site programme circa Feb 2022 – July 2024.

Requirements for approval comment process from TfGM to Domis team

Work with the industry recognised status A, (approved no comments), B, with comments and C rejected.

TfGM consultants to provide clear feedback with any comments measured against the rules of TfGM operating and any necessary Building regulation or engineering code requirements or areas of the design which may compromise the running of their asset.”

Appendix A

Project Programme

Appendix B Project logistic plans

END OF DOCUMENT