Initial Construction Management Plan

Project: Viadux 2 Phase A
Date: 15th October 2024
Revision: 1

Addressing comments from consultation comments

Contents

1.0 Introduction

1.1 Statement of intent and overall control strategy
1.2 Existing development site
1.3 Summary of new works proposed.
1.4 Considerate contractors Scheme

2.0 Overview- Nuisance mitigation measures

2.1 Health and safety
2.2 Minimising disruption to ongoing use of adjacent buildings
2.3 Construction noise and vibration
2.4 Dust and Mud
2.5 Fire protection
2.6 Light pollution
2.7 Ground and watercourse pollution.
2.8 Trees and existing hedge rows
2.9 Site Housekeeping
2.10 Waste management proposals.
2.11 Liaison with community.
2.12 Site hours

3.0 Construction Logistics and Construction Process

3.1 Traffic management, Construction Logistics, and Construction Methodology

3.1.1 3rd Party Consultation
3.1.2 Site vehicle access restrictions
3.1.3 Offsite storage
3.1.4 Tower cranes
3.1.5 Site establishment, enabling works and vibration monitoring.
3.1.6 Site commencement
3.1.7 Pilling and sub-structure works
3.1.8 Core
3.1.9 Floor construction
3.1.10 Double high-speed hoists
3.1.11 Site welfare and office accommodation
3.1.12 Unitised curtain walling
3.1.13 Lift installation
3.1.14 Hotel and Apartment fit out.

4.0 Working within and in relation to the Listed arches.

5.0 Access to the Metrolink stop via Trafford St. for maintenance purposes and how this will be maintained. – Not used to be provided prior to phase two commencement.

6.0 Construction and Demolition methods including how buildings next to and over Metrolink will be cleared. – Not used to be provided prior to phase two commencement.

Appendices

A. Construction Traffic Management Plans

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 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 Site is located in Manchester city centre. It is bounded by the Manchester Central Conference Complex and Great Northern Warehouse to the north, Albion Street to the east, the Deansgate Castlefield Metrolink station and Deansgate Locks to the south, and the Beetham Tower to the west.

1.3 Summary of new works proposed

This plot will deliver a 76-storey mixed use tower comprising a hotel (Use Class C1) and residential units above comprising 1, 2 and 3 bed, and penthouse apartments (Use Class C3). Residents' amenity spaces and commercial units (Use Class E) are provided within the arches at ground floor opening onto Great Bridgewater Street. Secure cycle spaces, serving this and the Phase 1 building, are provided within the basement. At viaduct level, a redesigned service yard for the conference centre is enclosed by a new podium structure with residents' external amenity space above. A section of the Great Bridgewater Street bridge (deck) is removed to bring light into the street below. The building is located within the Victorian arches underneath Manchester Central service yard area. Prescriptive project controls have been established and approved during the construction of Viadux phase1 with English Heritage, Manchester Central and Manchester City Council, these principals are to be followed for the construction of Viadux phase 2A to ensure the smooth running and safety of all the city centre users, 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 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

Consideration will be given to noise and vibration at the pre-construction stage for all the various activities involved with delivering the buildings, we will take specialist contractor advice to ensure we minimise excessive noise and vibration, and as such we have identified the noisiest activities and their durations and these are as follows: -

- Sectional Flight Auger Piling -
- Bulk Excavation
- Arch interventions -
- Concrete Structure -

The following table illustrates expected levels of noise from the various types of machinery to be used on this project: -

Plant Type	BS 5228 Reference	Sound Pressure Level Leq (dBA) at 10m
Tower crane	C4.49	77
Passenger/goods hoists	C4.62	66
Cutters, drills, and small tools	C3.35	65
Pulveriser on Excavator	C1.4	76
Folk lift truck	C4.55	70
Lorries and vans	-	73
Mobile crane	C4.46	67
Mobile lorry mounted concrete pump	C4.30	79
Poker vibrator	C4.33	78
Ready mixed concrete lorry	C4.21	77
Concrete splitters/saws	C1.6	83
Scaffolding and hydraulic access platforms	C4.58	63
Tipper lorries	C2.32	74
Flatbed articulated vehicle	-	73
Large rigid lorries	-	75
Track mounted piling rigs	C3.15	82
Water pumps	C2.45	65

In order to minimise the effect these activities will have on our adjacent neighbours and the general public; we will undertake a series of mitigation procedures coupled with a scheme of noise and vibration

monitoring.

Noise and vibration mitigation to be undertaken on site:

The following steps will be carried out to minimise noise on site within Best Practicable Means (BPM), as defined in Section 72 of the Control of Pollution Act 1974 and Section 10 of BS 5228 part 1):

- We will use methods, machinery, and equipment that will have a lower vibration level impact.
- We deploy machines and equipment that has been recently serviced and will be routinely serviced during the project to minimise the amount of noise and vibration from those machines and equipment.
- Attitude of operatives to the making of noise to be addressed, to have an understanding that work activities have an effect on those around not just operatives but residents and the public. This will be achieved though toolbox talks and daily activity briefings.
- Use cast in Halfen brackets for the cladding in lieu of post drilling into concrete.
- Screens surrounding the concrete slabs and proprietary formwork wrapping the stair and lift core to minimise noise break out from concreting activities
- Acoustic screens used to shield metal pipe cutting or concrete cutting activities on site.
- Cutting stations for cutting metal wall studs will be in suitably acoustically sheltered locations.
- Electric forklifts and pallet trucks in lieu of diesel forklifts where available from the Domis fleet of electric plant.
- All site operatives will be inducted on the potential impact on the surrounding community of site activities. This should cover principles of BPM pertaining to all site activities, highlight any particularly sensitive or high impact activities and precautions to be taken.
- No shouting.
- Stereos will not be permitted on site.
- All contractors/sub-contractors will demonstrate and undertake best working practices to avoid exceeding noise or vibration limits which have been agreed with Manchester City Council control limits.
- Sub-contractors shall highlight in their method statement and/or risk assessment any activities that will create significant noise and vibration levels. Sub-contractors will demonstrate how they will mitigate/ manage the emissions.
- All plant and equipment will be switched off when not in use, or where this is not practicable, throttled down to a minimum.
- Wherever practicable, all plant and equipment should be powered by mains electricity in preference to locally powered sources such as diesel generators.
- All compressors and generators shall be models fitted with properly lined and sealed acoustic covers or enclosures which remain closed when in use.
- Noisy plant or equipment should be sited as far away as possible from noise sensitive buildings. Wherever practicable, the use of barriers in the form of acoustic barriers or enclosures will be employed.
- All vehicles, plant and machinery used during operations shall be fitted with effective exhaust silencers and all parts of the machinery, plants and vehicles will be maintained in good working order and repair in accordance with the manufacturer's recommendations.
- Screening from existing features will be maximised or the use of full or partial enclosures will be employed for fixed plant. Fixed or semi-static plant will be located and orientated away from noise sensitive receptors where feasible to do so.
- Identification and use of low noise and vibration techniques. Where construction plant which is known to generate significant levels of noise and vibration then it will be used with consideration, and the construction process closely monitored to minimise noise and vibration impacts on and off

the site.

- Vibratory compaction equipment will be used in a mode which minimises the incident vibration at nearby residential and other sensitive properties. Consideration will be given to engaging concentric weights only when running at speed to avoid run up, run down resonances, the use of smaller equipment, or turning off the mechanical vibration on vibratory rollers and undertaking more passes for areas where there is a particular risk that disruption may occur at neighboring properties.
- Noisy works will be controlled utilising the hierarchy of risk control and measured using noise monitoring equipment to ensure safe levels are not compromised and noisy work hours are not breached. In all noisy work cases substitution of equipment for machines or processes which reduce the noise levels to acceptable levels and therefore minimise the impact on both site personnel and the general public. Where this is not possible engineering controls will be employed utilising such control measures as baffles and 'noise screens.
- And at all times refer to the noise from building sites webpage for further information/guidance and also IAQM/EPUK Construction Guidance on controlling emissions. [Currently January 2024, Version 2.2] ** (For city centre major developments).

Monitoring and control of noise and vibration

The critical construction activities have been identified, as follows:-

- Sectional Flight Auger Piling
- Bulk Excavation
- Concrete Structure

We would propose to carry out week-long environmental noise and vibration monitoring at the beginning of each of these phases of work at the site boundary nearest to the identified sensitive receptors.

The monitoring will capture hourly dB LAeq noise levels and PPV (mm/s) vibration levels continuously throughout the week.

At the end of each survey, the results will be quickly analysed and the risks of exceedance of the pre-agreed noise/vibration limits shall be evaluated.

1. If the verified survey deems that activities fall comfortably below the pre-agreed limits, risks of adverse impact would be deemed low, and the works would continue without the need for continuous monitoring. Occasional sample (spot check) noise and vibration level measurements may be taken periodically throughout the remainder of the identified period of works. These sample measurements will be carried out by the project's independent acoustic consultant, Jameson Acoustics, with visiting days chosen by them at random.

2. If the verification survey deems that activities are below the pre-agreed limits, but only by a margin that may suggest that, on certain days/times, the limits could be reached or exceeded, then a second verification survey will be conducted for another week. If after this week, the levels remain consistently below the limits with a reasonable margin, then works would continue without the need for continuous monitoring. However, occasional sample (spot check) noise and vibration level measurements may be taken throughout the remainder of the identified period of works.

3. If the verification survey deems that activities have reached or exceeded the pre-agreed limits, then continuous noise and vibration monitoring station shall be installed.

In the event of scenario 3 occurring, noise and vibration levels will be monitored onsite 24/7 via a live online monitoring system.

The monitor will transfer data via cellular connection to Jameson Acoustics on a daily basis, and in addition real-time alarms will be sent via email and/or SMS to the project manager and construction manager.

Locations of monitoring equipment will be stationed where there is a suitable power supply, accessible mounting point and where the equipment can be maintained and be safe and secure for the project duration.

*Noise trigger levels Noise trigger levels will be set at the following (based on the guidance in BS5228-1, E.3.2 at the nearest dwelling:

- 75 dB(A) Leq (10 h) Monday to Friday working day (07:30-18:00)
- 75 dB(A) Leq (5 h) Saturday working day (08:00 – 14:00)
- 65 dB(A) Leq (3.5 h) Saturday working day (13:00 – 16:30)

Noise triggers may be adjusted according to the mounting locations as it may not be practical or reasonably possible to mount the noise monitor onto the receptor's façade. If noise measurements are to be taken at the site boundary, the noise limits will be recalculated according to account for the noise reduction over distance to the receptor's façade from the site boundary. We can confirm that suitable mounting locations can be achieved at the site boundary.

The monitors will have a trigger level set for working 1 hour periods, above which an alert will be sent by text and/or email to the allocated site contacts.

The 1-hour alert is intended to inform the construction management of potential issues onsite. The intent is that measures can be taken to reduce the noise activities such that working period average is not breached.

Following receipt of an alert, the response procedure will be followed as soon as is reasonably practical.

The Project Manager / Frame Project Manager will be informed of the breach and the following action will be taken;

We will review the monitoring results to:

- Cease all works likely to be causing any potential noise or vibration.
- Determine the activities / plant that is responsible for the exceedances.
- Ascertain if there are any practicable means of reducing the measured levels including alternative working techniques.
- Determine whether this reduction can be practically employed and if so, the measures will be implemented.

The site team will regularly review monitoring records to review the effectiveness of the noise management activities onsite.

Class 1 sound level meters will be used in compliance with relevant British Standards (Noise and Vibration).

Vibration will be monitored by real-time, cellular connected vibration monitors and will measure and conform to the standard BS5228-2 which provides guidance on monitoring vibration on construction and open sites.

Limits in the document are based on measuring vibration at the receptor, at the base of the building on the outer wall.

Vibration affecting occupied buildings shall not exceed levels that are likely to give rise to damage to the building or discomfort to the occupants of the building. It will normally be appropriate to set limits in terms of Peak Particle Velocity (PPV), in accordance with BS 5228-2.

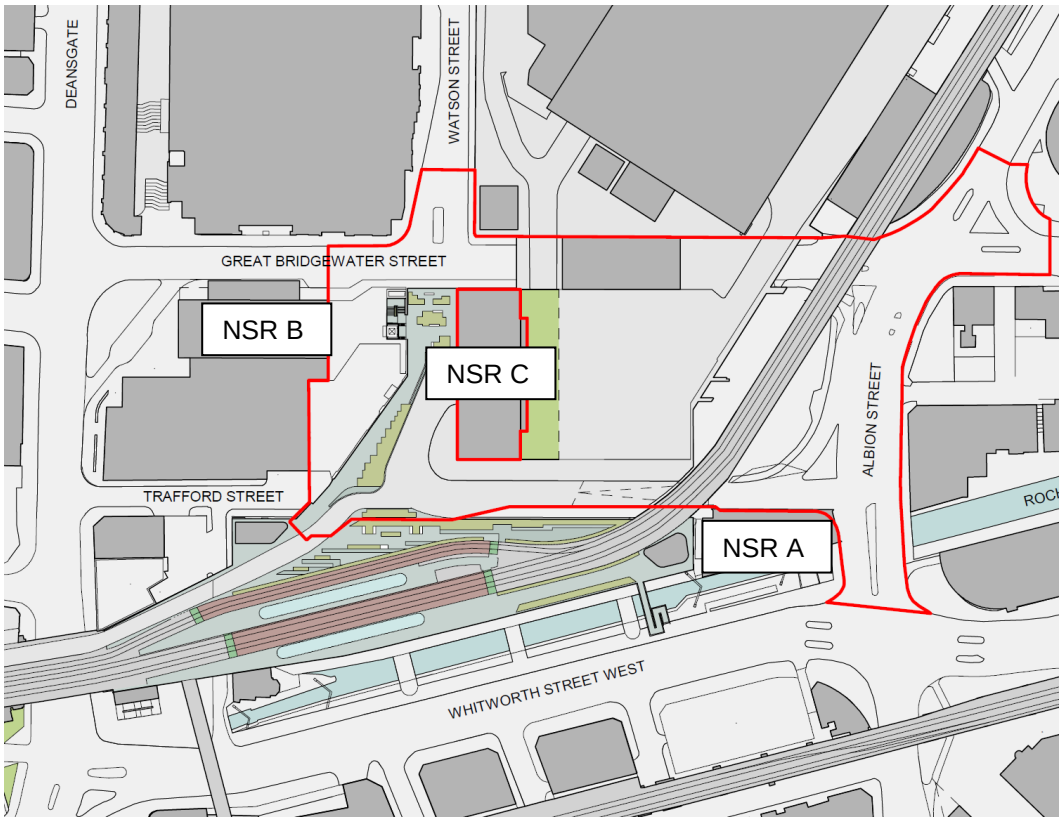
Vibration monitoring will be carried out during each of the key work phases (critical construction activities listed above). Vibration monitors will upload data every 24 hours or at the point of exceedance, where the Project Acoustician will be available to view, analyse and issue to site contacts. Waveform & frequency data can be collected by the monitor where required.

Please see Section 2.11 for details of our complaints procedure.

The at-risk noise and vibration receptors?

We have identified that we have a series of neighbours that may be potentially impacted by our works on site. We have addressed this in part by contacting these parties and will include them in the first of our quarterly updates that includes information about our works, our contact details for the site team and our out of hours contact customer service centre.

As part of this review, we have determined that our closest (and thus at most risk) receptors are the residents of Axis Tower (NSR A), Beetham Tower (NSR B) and Viadux 1 (NSR C). See below site plan. . As such, we are proposing these as the receptor locations. These will be positioned as the three nearest locations in relation to where we believe our noise generation locations will occur.



2.4 Dust and Mud

Good practice measures will be adopted at the Viadux 2A development to control the generation and dispersion of dust such that significant impacts on all permanent and transient stakeholders is minimised.

The hierarchy for mitigation will be:

- Prevention
- Suppression
- Containment

The following section provides detail on the Generic Mitigation to be incorporated into the Proposed Development:

- *Communication*

Develop and implement a stakeholder communications plant that includes community engagement before work commences on site.

Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager.

Display the head or regional office contact information.

- *Planning*

Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk and should include as a minimum the measures recommended in this table.

- *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.

Make the complaints log available to the local authority when asked.

Record any exceptional incidents that cause dust and/or emissions, either on- or off- site, and the action taken to resolve the situation in the log book.

- *Monitoring*

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 provided if necessary.

Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.

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.

Agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on site or, if at a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during demolition, earthworks and construction.

- *Preparing and Maintaining the Site*

Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.

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 extensive period.

Avoid site run-off 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 onsite cover as described below.

Cover, seed or fence stockpiles to prevent wind whipping.

- *Operating Vehicle/Vehicle Movements*

Ensure all vehicles are well maintained and switch off engines when stationary – no idling vehicles.

Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.

Impose and signpost a maximum speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).

Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.

Use of ultra-low sulphur diesel in all non-road mobile machinery where available.

Where possible all Non-Road Mobile Machinery (NRMM) used for the purpose of construction or demolition works should meet Stage IV of EU directive 97/68/EC, and Stage IIIA.

- *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.

Ensure an adequate water supply on the 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 fin water sprays on such equipment wherever appropriate.

Ensure equipment is readily available on site to clean any 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.

The following section provides detail on the Activity Specific Mitigation to be Incorporated into the Proposed Development:

- *Demolition*

Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).

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.

Avoid explosive blasting, using appropriate manual or mechanical alternatives.

Bag and remove any biological debris or damp down such material before demolition.

- *Earthworks*

Only remove the cover in small areas during work and not all at once.

- *Construction*

Avoid scabbling (roughening of concrete surfaces) if possible.

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.

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 small supplies of fine powder materials, ensure bags are sealed after use and stored appropriately to prevent dust.

- *Trackout*

Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.

Avoid dry sweeping of large areas.

Ensure vehicles entering and leaving 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 logbook.

Install hard surface 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 for routine use (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.

All construction activities will be subject to the production of a detailed method statement and risk assessment by specialist subcontractors, these will include the measures being proposed for eliminating, reducing or controlling dust and any proposals for monitoring where deemed necessary.

These method statements are subject to approval by the Domis Construction Operations Team and our Safety Advisor and agreement will need to be reached prior to any work being carried out.

2.3 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 and 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.

2.4 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.

2.5 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 bunded 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

2.6 Trees and existing hedge rows

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

2.7 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.

2.8 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.

2.9 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.

2.10 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 08.00 – 14.00 Saturdays. No work on Sundays or Bank holidays.

Additional working hours will be required for activities such as;

- Tower crane erection and dismantle.
- Power floating to concrete slabs.
- Large volume concrete pours, limited to structural elements up to the level 5 transfer structure.

- Elements of bridge removal to expediate any necessary road closures.

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 will consult with and have consulted with various 3rd parties over the construction of the 76 storey residential development building, these include;

Manchester City Council (MCC) –Ben Phillips Event and Specialist Co- for Manchester City Centre Piccadilly and Deansgate wards.

Manchester Central – Formal discussions have been held between Salboy Central and Artal with Manchester Central, these meetings will continue to enable agreement of all phasing whilst the enabling works 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, which is in keeping with the previously agreed TM plans for the previously commenced Viadux 2 development.

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 part lane 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.

In particular there is a large development, (Great Northern Warehouse Development), within 100m of the Viadux phase 2A development, early discussions have been held with Trilogy the developer on this scheme, in relation to traffic management and S278 interfaces and we understand the scale of development, the timescales of the development and the proposed traffic management strategy.

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, supplemented by city cranes within the site boundaries to assist with the construction of levels 1-5.

TC 1 and TC2 will be erected to construct the core and frame from levels 3-76, no oversailing will be required apart from a small amount on the Highways, which will be concluded with the requisite Oversailing license from MCC.

Road Closures and extended working hours will be required to rig and de-rig the cranes and this will be agreed with MCC once exact dates are known,

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 within the Lock 90 building on the opposite side of Albion Street to the site and is used for all site accommodation requirements.

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 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 5

Phase 5 – Construction of Main core and structure up to level 76

Phase 5 – façade installation to all blocks

Phase 6- Internal fit out and site commissioning

3.1.6 Site Commencement

The development will be serviced from pre-existing office and welfare accommodation which is located on Albion Street.

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.

When the piling works have been completed, we will commence excavation of the Ground floor pile assisted raft 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 2-5 transfer structure will be completed.

3.1.8 Jump Formed Core.

We will erect TC 1 and 2 and commence construction of the jump 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 core progresses, we will install the pre-cast stairs to gain permanent access up the building. A hoist will be progressively installed to feed personnel and light materials to the top of the construction work face.

3.1.9 Floor Construction

When the jump form and transfer structure is completed up to level 5, work will commence on the construction of the main floor construction.

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.

Two high speed passenger and goods hoists will be utilised.

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 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 Hotel and Apartment Fit Out

When we have a fully watertight floor, we will complete the high-level corridor services, including any temporary electrics, power and lighting.

The first fix will commence with the metal stud walls, one side of plasterboard and the noggin brackets that carry the electrical back boxes as well as any structural supports required for door frames, kitchen units etc.

The completed first side boarded apartment will be handed over to the Mechanical and Electrical contractor for their first fix works to all services as well as ventilation and ductwork, electrical, comms and control wiring, sprinkler pipework and all pipework including all testing prior to handing back for second side boarding and ceiling works. The rooms will be plastered, and mist coated when dry. The walls will be snagged and repaired where necessary ahead of 2nd fix joinery, kitchen installation and final decorations. Final fix electrical and lighting will be followed by floor finishes, builders clean and commissioning of services. The team will instigate an inspection and snagging

process with the client team to clear all defects before final sparkle clean and lock up of the completed hotel room/apartment.

As the accommodation is completed we will finish the corridor fit out, including lift architraves etc and protect any finished surfaces necessary. From completion of the apartments, we will instigate an inspection process to ensure the integrity of the hotel rooms/apartments up until overall final project practical completion.

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 will be subject to separate listed building consent.

Appendix A Project traffic management plans

END OF DOCUMENT