浙建·香港Westfields
CHINA ZHEJIANG (HONG KONG) WESTFIELDS CONSTRUCTION JOINT VENTURE

Meadow Side, Manchester

Logistics Plan

Health & Safety

Document No. **1001-W-WCZ-HSA-100-0001**

1. Document Submittal History

Revision	Date	Prepared by	Checked by	Approved by	Reason for Issue
B01	16-Dec-2016	Mark Boulton			

2a. Stakeholder Review Required? YES ☐ NO ☐

Stakeholder submission required:		Purpose of submission:	
	Council	☐ For Acceptance	☐ For Information
	Utility Company	☐ For Acceptance	☐ For Information
	Other _____	☐ For Acceptance	☐ For Information

This document has been reviewed by the following individual for coordination, compliance, integration and acceptance and is acceptable for transmission to the above stakeholder for the stated purpose.

Sign: _____ Name: _____ Role: _____ Date: _____

Sign: _____ Name: _____ Role: _____ Date: _____

2b. Review by Stakeholder (if required):

Stakeholder Organisation	Job Title	Name	Signature	Date	Acceptance
					☐
					☐

3. Endorsement by Principal Contractor

- ☐ 1. Accepted. Work may proceed
- ☐ 2. Accepted. Work may proceed subject to incorporation of changes indicated
- ☐ 3. Not Accepted. Revise and resubmit. Work may not proceed
- ☐ 4. Received for information only. Receipt is confirmed.

Signature

Print Name

Date

Westfields

China Zhejiang 浙建·香港 CONSTRUCTION GROUP (HONG KONG) LIMITED

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1. Introduction

The Traffic Management and Logistics plan is used to document and demonstrate how Westfields, their suppliers and all interested parties will comply with legislation, discharge their duties and comply with industry standards and best practice in traffic and logistics management.
To ensure we achieve what is required we will use this 6 point charter that is simple for all stakeholders to understand and follow:

i: Ensure that entire workforce sign up to agree that we all have a right to come to work, work safely and go home in full health;
ii: Work to break down the barriers between companies, managers & staff ensure that all staff working on site will carry the Meadow Side ethos and philosophy & will be equally respected for the role they play;
iii: Provide first class facilities to all staff working on the site and ensure they are safe and secure;
iv: Use robust systems & procedures to minimise the impact on the local community of environmental issues, deliveries to site & waste removal from site;
v:
vi: That we work to continually improve our processes to the benefit of all involved in the Meadow Side project and ensure rewards for excellent performance are given to staff;

This document should be treated as live and updated / amended / reviewed at suitable intervals, typically every month or sooner if required.
This document is to be read in conjunction with the following:

- Strategic lifting plan
- Project fire plan
- Construction Phase Plan
- Environmental Management Plan
- Temporary works design, plan & guidance
- Quality Plan

And any other relevant project specific plans.

2. Project details

2.1 Location

See Constructiion Phase Plan

2.4 Delivery Quantities

Based on the current programme and methodology Westfields have conducted a full analysis of the expected number of deliveries over the construction period and also highlighted all the major deliveries that will be received. These are tabulated in the table and graph below.

INSERT GRAPH OF DELIVERIES!!!

FIGURE 1 - DELIVERY SCHEDULE

There is expected to be 2 peaks in the number of deliveries.

2.4 Site Opening Hours

With regards to the hours of operation the Logistics team will be operating in line with the construction team times, namely:

Monday – Friday: 08:00 – 18:00
Saturday: 08:00 – 18:00

Out of hours deliveries are to be kept to a minimum and only conducted when no other means are available. In the event that out of hours deliveries are required, measures will be put in place to keep noise to a minimum such as vehicles will be nosed in with no reversing to avoid audible alarms and when on site 'Engine off on stand" is our policy.

2.5 Temporary Accommodation

The temporary accommodation and welfare is based up a peak occupancy of 300 operatives and office allocation of 70 desks.

Welfare shall include:

1. A toilet block with drying facilities and hot and cold running water
2. A mess room with an area to prepare meals and drinks;
3. A canteen preparing hot and cold food and drinks
4. A site office with meeting room area.
5. Showers
6. A suitable safe place to store bikes
7. **all welfare facilities are maintained, cleaned regularly and kept stocked with soap, towels etc.**

There will be additional toilets located within on the working floors themselves at designated levels.

At present it is not known whether the above welfare requirements will be provided through site cabins on site or a rented space off site.

3. Key considerations

Below are a list of key risks/considerations and associated actions which will be put in place.

- Site located within densely populated area so ensuring a safe and secure environment for all project stakeholders and neighbours through every phase of the delivery. This will require constant engagement with all stakeholders and also upholding the best standards for logistical management and perception of the site.
- There will be a high levels of workforce on the project with a peak of 300 operatives. Making the project **'**The place to work' by maintaining a high standard of discipline and rigour and ensure high standard of welfare facility will keep the workforce happy and effective.
- Safety is paramount so ensuring safe and workable access for deliveries of materials is important. This will be conducted through using the most up to date safety initiatives and apparatus. Also a philosophy of finding an alternative safer way of doing things will be adopted throughout.
- The footprint of the site is minimal and so utilising the area available is vitally important. Also managing deliveries so they have a 'just in time' approach will reduce delivery waiting time
- There will be no loaded lifts over adjacent properties but crane out of service will oversail the adjacent Angel Meadows Park. An oversailing licence will be sought to deal with this.
- There are several other construction projects being undergone within the same time frame including Plot 5 of Meadow Side and Angel Gardens project. Close coordination with these developments and also constantly reviewing the road network will assist.
- With this being a high profile project within Manchester it will attract attention and therefore adequate hoarding and security will be necessary
- The site and areas surrounded particularly narrow in places with tight turns. A clearly communicated logistics route onto site which navigates these issues will be required

4. Roles & responsibilities

Below details the roles and responsibilities of all parties associated with the site logistics.

4.1 Project Manager

- Planning and preparation of project traffic management strategy, and updating where required
- Make specific reference to the strategy in the project health & safety and environmental plan's
- Ensure a site specific risk assessment is carried out for all traffic activities (arrival, departure, (un)loading, movement, maintenance)
- Ensure a project induction is available to all pedestrians and drivers, which shows key routes, restrictions etc.
- Monitoring and reviewing health and safety performance of all parties
- Ensure there are adequate emergency procedures in place for all foreseeable events i.e. traffic issues, spills, medical evacuation, fire
- Ensure there is adequate lighting on all access routes and common user areas
- Engage with third parties stakeholders and neighbours regularly to update on future works being undertaken and receive feedback on current site performance
- Ensure there are adequate welfare facilities suitable for the workforce requirements
- Ensure there are adequate resources for traffic management and security

4.2 Traffic Management Coordinator/Contractor

- Traffic management control
- Provide segregated pedestrian and vehicle routes
- Provision of materials / equipment to support the strategy
- Provision of competent resources
- Liaise with Principal Contractor with regard to production of traffic management strategy
- Performance measurement / feedback to CM team regarding traffic management strategy and contractor compliance
- Carry out risk assessment for traffic activities
- Facilitate deliveries and management of delivery / logistics strategy
- Provide wheel cleaning facilities and road sweeping arrangements if required
- Set up and operate a web based material delivery management booking and co-ordination schedule to control the logistics for the project
- Observe/Monitor/Record material handling and disposal of waste and rubbish.
- Assist with the daily liaison with the Local Authority and Emergency Services.
- Keep daily site reports and records of site activities and labour resources.

4.3 Traffic Marshal / Banksmen

- Adhere to method statements and risk assessments created by the traffic management contractor
- Comply with the logistics strategy document
- Manage the flow of construction and other traffic around the development
- Man Stop/Go boards as required to control traffic flow
- Guide the delivery vehicle manoeuvre onto the site with the use of hand signals
- Provide site security to site gates during site working hours
- Coordinate between all other traffic marshals, contractors and drivers in terms of logistics
- Assist pedestrians as required

4.4 Security Guard

- Instigate an effective fully comprehensive security / access control regime for the Project.
- Adhere to method statements and risk assessments created by contractor
- Comply with the logistics and security strategy document
- Responsible for preventing and detecting signs of intrusion and ensure security of site boundary
- Investigate any disturbances
- Contact the emergency services as required
- Man the key areas of site to which a breach is most likely
- Hold a BTEC level 2 / SIA licence
- Rigidly control the main points of access / egress to the project

- Log the number of visiting operatives and visitors on a daily basis
- Guarding material delivery points / Control and Management of Keys

4.5 Contractors

- Comply with traffic management strategy
- Report issues with strategy
- Ensure all personnel attend project induction
- Provide competent workforce and supervision
- Investigate any accidents / incidents and ensure necessary control measures are put in place and communicated to the Principal contractor.
- Provide plant / equipment which complies with relevant statutory obligations
- Provide their own banksmen and manage all of their own delivery manoeuvres onto site

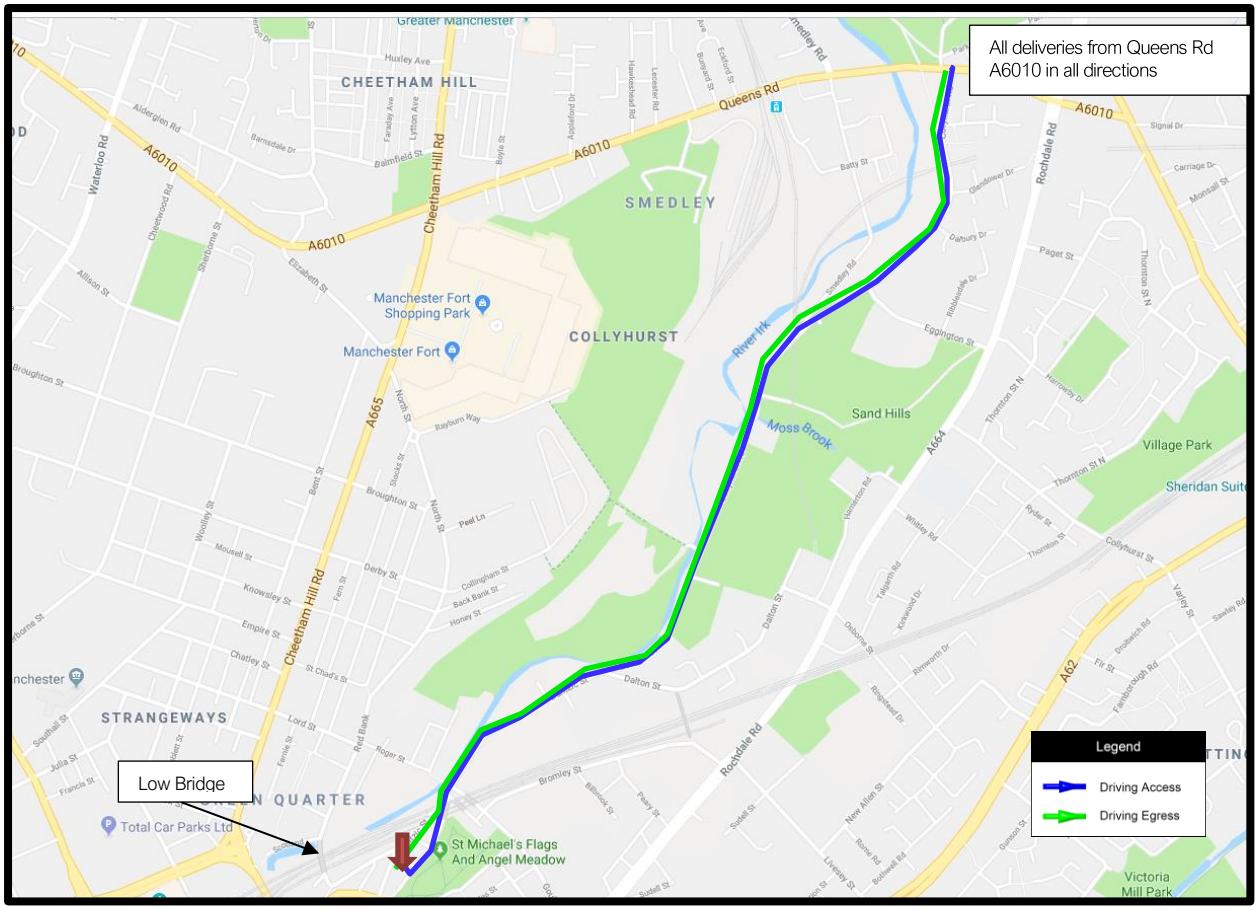
4.5 Drivers / plant operators

- Should be competent and trained to the appropriate standard required within the KHSS
- Drive with care and comply with the requirement of project strategy
- Use the correct equipment for the task, ensuring they are suitable for use, marked with safe working load, properly maintained, inspected and thoroughly examined regularly

8. 5. Vehicle management

5.1 Logistics Route

It is very important that adequate and safe vehicle delivery routes are utilised and agreed with the council to ensure that the roads are capable of taking the additional road users, that additional HGV vehicles will not affect other road users that utilise this route and that the route can spatially take the size of the HGV vehicles.
Due to traffic islands in Dantzic St and a low bridge on Coroporation St all deliveries have to come from the Queens Rd A6010 and use Collyhurst Road to access site. This route is suitable for HGV vehicles . The A6010 is a major trunk road circling around the majority of Manchester and cuts across all routes into Manchester from all directions.



. FIGURE 2 – HGV SITE ACCESS FROM ALL DIRECTIONS

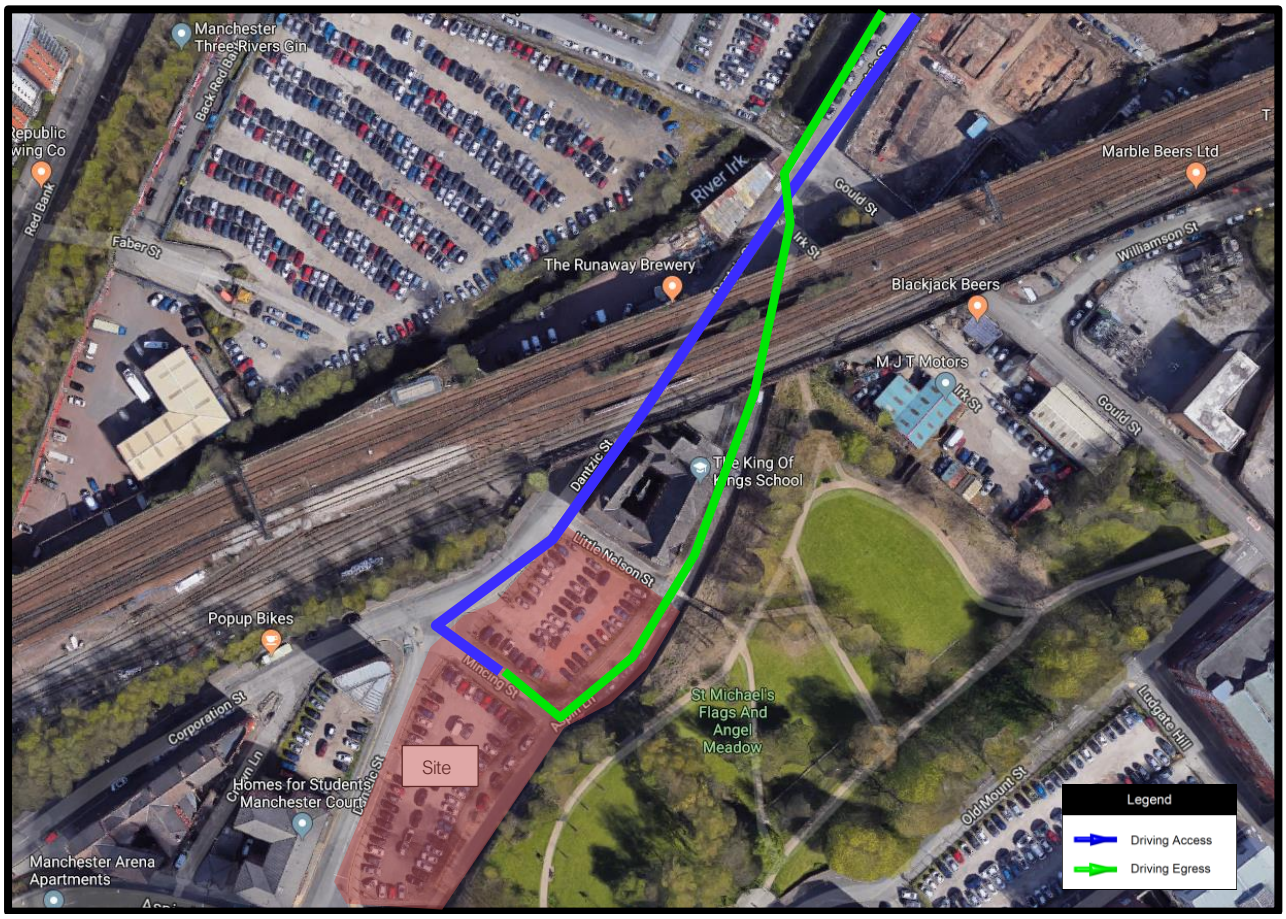


FIGURE 3 - HGV DETAILED SITE ACCESS



FIGURE 4 - ACCESS TO SITE FROM DANTZIC ST



FIGURE 5 - EXIT FROM SITE ONTO ASPIN LANE



FIGURE 6 - EXIT FROM SITE ONTO DANTZIC ST

5.2 Site Logistics Management

The site logistics strategy tries to maximise on the attributes of the surroundings without adversely affecting other users of the area. In doing so we believe that an optimum solution has been found which is both a practical solution to construct the development in the time frame, safe and limits the impact on others.
The scheme consists of the closure of Mincing St and parts of Aspin Lane. This will then create a one way traffic pit lane through the centre of site and this will facilitate all material deliveries.

SITE LOGISTICS PLAN NEEDED

FIGURE 7 - SITE LOGISTICS PLAN

5.3 Segregation

Westfields has taken consideration of the five primary issues that affect traffic and road movements. These being:

- Maintaining site security.
- Segregation of plant and operatives / the public.
- Manoeuvring of vehicles & plant
- Delivery coordination, loading and storage
- Delivery times

Regulation 15 of the Construction (Health and Safety) Regulations requires that every construction site shall be organised in such a way that, so far as is reasonably practicable, pedestrians and vehicles (and / or plant) can move safely and without risk or injury to all parties.

Therefore, wherever vehicles (and / or plant) and pedestrians are required to utilise adjacent access during construction around the Meadow Side project suitable physical segregation with signage shall

be installed to demarcate safe pedestrian routes. The entry gate points will be isolated from site pedestrians by use of designated pedestrian routes and physical barriers.

This arrangement satisfies the aforementioned requirements but will be reviewed as the project proceeds to ensure that any construction activities do not present additional risks. Should any additional risk be subsequently identified then appropriate action will be taken to eliminate or minimise such risk.

Where necessary appropriate signage will be fixed to gates and all areas where there is a possibility for vehicles (and / or plant) to come into contact with pedestrians and to denote vehicle / pedestrian crossover areas. If they cannot reasonably be avoided a Banksman will be in attendance.

The following measures will be introduced to make both pedestrians and vehicles aware of each other around site:

- Creation of safe crossing points where walkways interface with the site access or other vehicular routes
- Signage to warn pedestrians on public areas of site entrances
- Signage to warn site vehicle operatives of pedestrian crossings.
- Physical demarcation within working areas between site operatives and site vehicles (and / or plant)
- Suitably trained Traffic Marshals to ensure safe access / egress; clearly identifiable wearing orange hi-vis vests / jackets and helmets of the appropriate colour – blue or white after 6 months probationary period expires after attaining PPS qualification
- No uncontrolled pedestrian traffic to be allowed through the site

5.4 Signage

The following signs will be utilised across the development to advise road users and pedestrians of the variations to existing road network and assist with route diversion and safety.

- Footpath closed – Along Dantizic St and Little Nelson St
- Beware Construction Traffic on Dantizic St and Aspin Lane

5.6 Abnormal loads

Abnormal loads pose a significant threat to other road users as they are typically wider than the standard road width, very heavy and therefore difficult to slow down and also difficult to manoeuvre around. For this reason any abnormal load will need to be delivered to site with special measures in place to mitigate any risk.
Under government guidelines an abnormal load is defined as:

- a weight of more than 44,000 kilograms
- an axle load of more than 10,000 kilograms for a single non-driving axle and 11,500 kilograms for a single driving axle
- a width of more than 2.9 metres
- a rigid length of more than 18.65 metres

Typical examples for Meadow Side of loads that would fall into this category would be a piling rig, the mobile crane or an excavator arriving on a flat bed articulated lorry. If the load exceeds any of the above then the following protocol is to apply.
Firstly the route to site will be plotted to ensure that there are no collisions with highways structures and a risk assessment is to be conducted. This can be conducted using www.freightjourneyplanner.co.uk
Next the police and highways agency are to be notified of the abnormal load and provided with the intended route, timings for the journey and what is being transported.

Abnormal loads will typically require a police escort and they require a minimum of 48hour notice before the intended delivery date to organise the escort. The police will assist by stopping traffic as required, providing a visual warning to other road users ahead of the vehicle and assist in manoeuvres. The police escort will not take any responsibility for the route to site and therefore it is the full responsibility of the haulier.
There are restrictions on when abnormal loads can be permitted into the London Metropolitan Area. No abnormal loads are allowed within the following time periods

- Monday to Friday 07:00 – 10:00 and 16:30 to 19:00
- Saturday 10:00 – 19:00
- No restrictions for deliveries taking place on a Sunday

5.7 Spillage

Spillages cause unnecessary environmental impact which can easily be mitigated. Planning for responding to incidents and emergencies is an important part of project environmental management. Emergency response and contingency plans should take account of the location of the local drainage system; requirement to engage with the emergency services, location and contents of spill kits, notification process and emergency contacts list in the event of an incident etc.

All vehicles are to have been inspected regularly to ensure that they are in good working order ahead of any deliveries being made. As a precautionary measure a spill kit as shown below will be stationed at each gate. This will consist of bunding, hazard tapes, signage, sand and absorbent cloths. A designated spill response team will be trained (these will typically be the site traffic marshals) and in the unfortunate event that a spill does occur they will bund the area, place signage, warn others around, and soak up the spill to be disposed of in the correct manner. The primary requirement is to ensure that any spill doesn't enter the drainage system and become a pollutant.



FIGURE 8 - TYPICAL SPILL KIT

5.8 Neighbours

There are several neighbours surrounding the development on all sides. It is important that a relationship is established with all of these parties and maintained throughout the works. The local neighbours who may be effected by the development are defined below:

- Homes for Students Manchester Ct – Opposite on Dantzic St
- Railway arches (Mostly Vacant properties) – Opposite on Corporation St
- King of King School – Opposite on Little Nelson St
- NOMA building – Opposite on Angel St

A regular coordination meeting will be established with all of these parties from prior to construction starting until completion of the project. The purpose of which is to notify the neighbours of upcoming elements of works and any impact this may have on them.

Apart from noise and increased HGV traffic flow around these properties there will not be any direct impact on their functionality.

5.9 Consolidation Centre

Project specific consolidation centre will not be utilised on this development as it is not cost effective. Each sub-contractor who has materials being delivered from vast distances will be expected to have a holding area with the intention that all there deliveries are taken there prior to being brought to site. This will have the function of ensuring that any early or late deliveries can be identified before they enter the Greater Manchester area and give the logistics team some ability to shuffle the delivery times around to accommodate.

5.10 Street Furniture

All existing street lighting will remain.

9. 6. Vulnerable road user management

The development is located within a sparsely populated area of Manchester which is currently either derelict or undergoing redevelopment. The main vulnerable road user is the School opposite which caters for primary school age children. Discussions with the school are underway as to how this issue is to be resolved. From a review of the local cycle routes in the area, the site vicinity and HGV access route is not a major route.

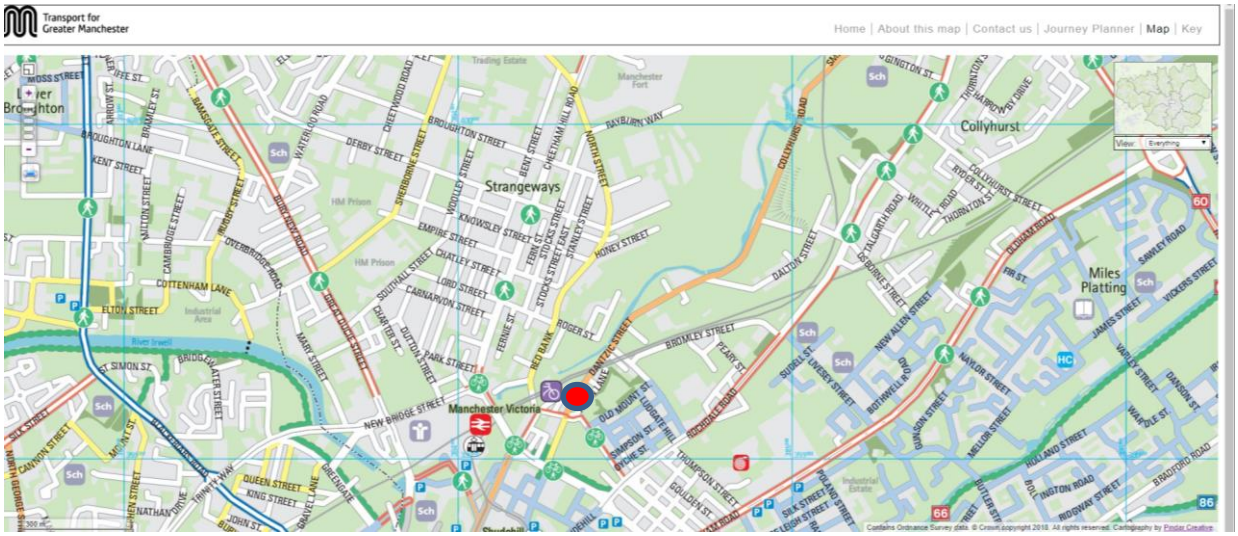


FIGURE 9 - LOCAL CYCLE ROUTES

To assist with managing vulnerable road users it will be requested that all deliveries and their drivers are FORS registered to a minimum of Bronze standard. The FORS scheme is an accreditation for fleet operators and intendes to improve HGV driver safety by improving key areas such as vehicle road worthiness, route planning, training etc. When booking in deliveries the Contractor will be expected to provide details of the FORS accreditation.



Management	Vehicles	Drivers	Operations
Responsibilities & authority	Road worthiness	Training and assessment	Routing and scheduling
Communication	Insurance	Driving at work	Transport control
Competent Person	Fleet performance	Fitness and health	Fines and charges

10. 7. Delivery management

7.1 Strategy

In conjunction with the previous sections we will manage the process of vehicles delivering to the site. There are several key considerations to take into account that are primarily for the benefit of the local environment but that are also crucial to the efficient provision of materials, plant, tools and equipment to maintain the construction production line.

Deliveries will be scheduled using the Westfields delivery management system supplied by DataScope. This will allow us to control the flow of vehicles that attend site at any one time. It should be noted that as the project progresses the types and frequency of deliveries will change and through the forward planning of bookings by the sub-contractors the system will provide us with sufficient information to allow for accurate forward planning enabling us to ensure we are able to maintain a steady flow of materials to meet the programme requirements.

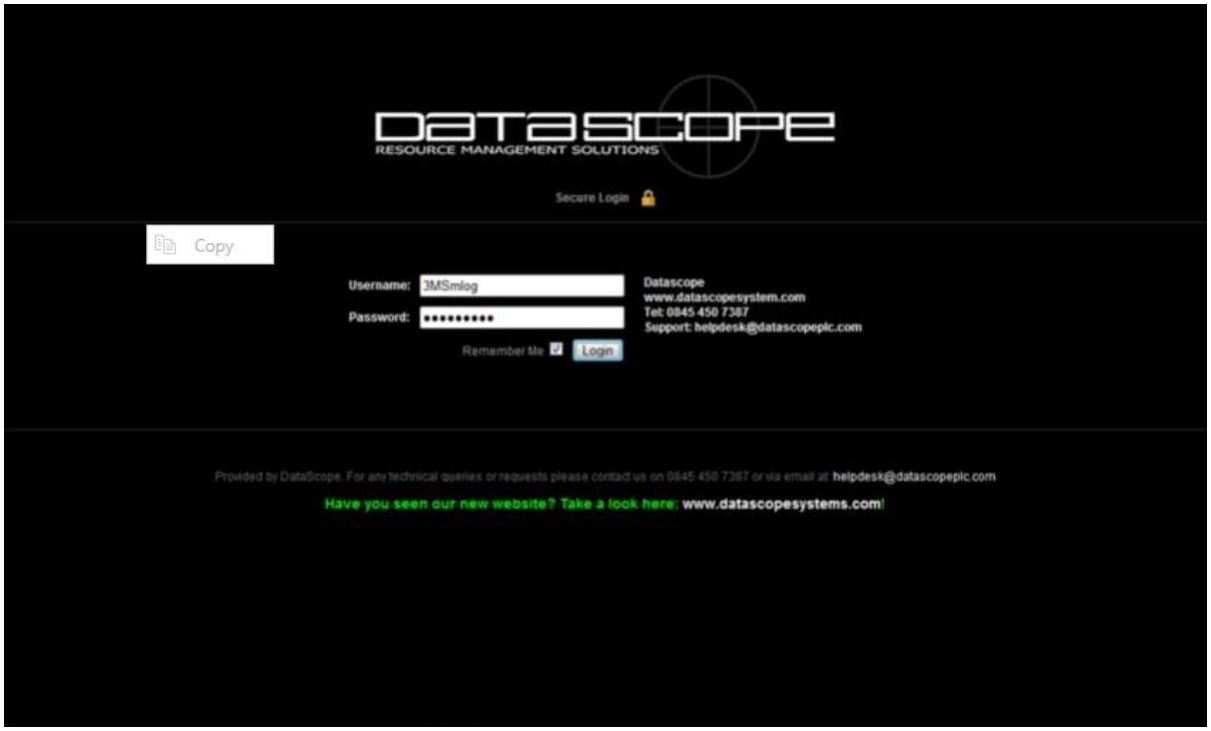


FIGURE 10 - DATASCOPE

Each contractor is expected to log there specified delivery requirements at least 48hours ahead of the delivery arriving on the Datascope system. The system will not allow any deliveries to be booked in time slots which have already been allocated. This will ensure that the 'just in time' delivery philosophy can be upheld. A weekly logistics coordination meeting will be held with all sub-contractors to try and plan deliveries for the following week before uploading to datascope. This will alleviate the issue of contractors block booking slots to which they don't require or unimportant deliveries getting a prefenence over critical deliveries for the project.

7.2. Process

Putting all this together provides us with the process that we will employ on the Meadow Side project. In the first instance we will have a start-up meeting with each principal sub-contractor and present this strategy to them and ask them to sign up to the charter and the principles as outlined within it.

Out of that meeting the sub-contractor will be required to provide us with their own logistics strategy with the following specific information included:

- Delivery forecast for the duration of their programme
- Types of material
- Volume of packaging
- Types of stillages / pallets
- Weights of products
- Specific lifting information
- COSHH information
- Fragile / valuable / long lead-time deliveries identified

The sub-contractor should also identify reusable / returnable materials so as to reduce the levels of waste on site requiring removal.

The delivery forecasts are critical in order that we can plan our resources to meet the requirements. This is particularly important if the delivery is non-standard e.g. comes on a stillage or is an abnormal load which may require specialist handling equipment.

Once on board and working on site at the weekly construction meetings there will be a slot for discussions on deliveries for the coming week. It will incumbent on the sub-contractors to have prepared their forthcoming requirements for this meeting for without it they will be unable to request access to any delivery slot.

At the meeting each sub-contractor will present its delivery requirements for the coming week and these will be agreed and approved, or not, by the construction team and the attending sub-contractors. Each slot will be allocated based on the current construction programme and critical path activities. It is the responsibility of the sub-contractor at this meeting to ensure that any abnormal loads (weight, dimensions, value, & fragile) are highlighted and the detail provided.

Once the slots have been allocated each sub-contractor must then enter the bookings onto DataScope and these bookings will then be checked and authorised by the Westfields team. Should the booking be for an abnormal load then all the details of this should be included in the booking. All bookings must be made no later than 48 hours in advance.

This then provides the delivery schedule for the coming week for all delivery points and should give ample time for the sub-contractor to inform their supply chains of what they need to know in terms of booking slots and delivery points.

All Deliveries Tuesday 15/01/2013

Delivery Booked For	Actual Arrival Time	Actual Departure Time	Duration	Delivery Vehicle Type	Description of Load	Means of Offload	Tower Crane	FINAL STATUS	Company	Contact	Contact No.
Gate: Gate 3											
07:00			02:00	Artic	Load 111 walkway	Crane	Tower Crane 1	OK	ROWECORD	Pedro	7850644277
11:30			01:30	Rigid	30No. safety barriers. Will be offloaded by hand and taken to Pavilion 4 level 2 for use/storage	By Hand	No Crane	OK	GIG	Brian Baker	7885909721
13:00			00:20	Rigid	1no. HR12 Cherry Picker. Need crane TC1 or 2	Crane	Tower Crane 2	OK	GIG	Brian Baker	7885909721
Gate: Gate 1 Courier deliveries											
Gate: Gate 4											
07:00			01:00	Rigid	containment (as agreed in logistics meeting)	Crane	Tower Crane 2	OK	MJL	chris powell	7930001586
08:00			02:00	Rigid	4 / 5 Bundles rails, 4 pallets sand, 1 pallet cement, 1 pallet grout, 1 pallet fixings.	Vehicle Tail Lift	No Crane	OK	BRUYNZEEL	Bill Brennan	7977090169
09:00			00:30	Rigid	Delivery of 20t loose tip sand	Tipper	No Crane	OK	LYONG AND ANNOOT	Russell Barnes	7970678443
10:00			02:00	Artic	Load 436 340	Crane	Tower Crane 2	OK	ROWECORD	Pedro	7850644277
11:00			02:00	Artic	Bison Load 57	Crane	Tower Crane 2	OK	ROWECORD	Pedro	7850644277
13:30			02:00	Artic	Bison Load 58	Crane	Tower Crane 2	OK	ROWECORD	Pedro	7850644277

Datascope typical delivery schedule

FIGURE 11 - DATASCOPE TYPICAL DELIVERY SCHEDULE

Once the delivery has been approved by the Westfields Delivery Administrator, the sub-contractor is to ensure that their delivery meets all requirements as outlined in 5.2.4 above and that it is aware of the correct date, time and off-load point. It should be noted that in the first instance the deliveries will be going straight to site via the route that has been outlined above. If this route changes for whatever reason then the sub-contractors will be informed via the weekly logistics meeting and also through the revision of this document.

For each delivery the sub-contractor should ensure that:

- Their supply chain are fully conversant with the requirements for delivering to site
- The driver has, and wears, the appropriate PPE (5-point – gloves, glasses, boots, hi-vis jacket, hard hat)
- The delivery has a booking reference, a consignment note that contains that reference, their name and a site based contract name and mobile phone number
- The delivery driver has no passengers (unless required for the delivery operation), children under the age of 16, no animals or offensive weapons
- Materials to be delivered on pallets, roll cages or stillages for efficient unloading
- Use of appropriate material handling equipment to ensure materials are stacked to utilise total volume and working load of any means of distribution
- Packaging is to be kept to a minimum and all secondary packaging to be removed be distribution
- Reusable pallets and stillages are to be employed where possible
- Deliveries to be batched with other materials for the same area
- Where possible reverse logistics is used to return waste or unused materials
- That no delivery vehicles will be permitted to remain on site overnight or at weekends when the site is shut
- The driver is aware that should they be involved in an accident on site they will be part of an investigation and may be subject to a request to be tested for drugs and / or alcohol

If the sub-contractor is aware of any delivery that will not be palletised (or on a stillage or roll-cage), and will require double handling, then they should make the Westfields Logistics Delivery Administrator aware at the weekly meeting so that any necessary special measures or equipment that may be needed can be organised.

Due to the nature of the site and the constraints imposed to deliveries as a result all sub-contractors ?In order to minimise unloading times, all sub-contractors are to make all efforts to minimise the impact of deliveries on the site and the local road network. To that end they must ensure an effective means of material handling and site distribution needs to be established to ensure the delivery vehicle is unloaded as quickly and safely as possible.

Should the delivery arrive and the above criteria is not being adhered to the sub-contractor risks having to rectify the situation before distributing the materials or even having the delivery refused.

All deliveries once on site are under the jurisdiction of the Westfields Delivery Coordinator and all drivers are to adhere to the following:

- Follow all directions and instructions of the Westfields Logistics Traffic Marshal
- Complete the CLOCS / WRRR survey and return to the Traffic Marshal
- Be issued with and read the site rules for delivery drivers
- Turn off the engine until off-load is complete
- Leave no rubbish behind

The sub-contractor shall ensure that no delivery that arrives more than 30 minutes before its booking slot time. Vehicles that arrive earlier will be turned away unless it is possible to accommodate them without impacting on other bookings.

If a delivery is running late on the day of delivery the contractor is to notify the logistics manager at the earliest possible moment. It will then be at the logistics managers discretion as to whether to cancel

the delivery altogether or to try and reshuffle the deliveries of that day to fit it in. Either way it is not expected that vehicles will be waiting on the surrounding streets for their slot in the pit lane.

Short notice deliveries or deliveries arriving which haven't been logged onto Datascope will be turned away so as not to promote a culture of poor logistic planning.

Out of hours deliveries are to only be made in agreement with the local councils and will typically be in exceptional circumstances, for example an abnormal load. They are to be agreed with the logistics manager in the same meetings and logged onto Datascope in exactly the same manner as any other delivery.

There is expected to be many deliveries arriving to site which will have travelled from overseas. Typical examples of this are the cladding panels, decorative stone and bathroom pods. These deliveries can take several days to pass through customs and there isn't a set time period for this to occur. For this reason no delivery can be booked in to site until it has cleared customs. With all bookings required to provide 48hrs in advance of delivery all overseas deliveries will be taken to a holding yard until the delivery slot is available.

11. 8. Material distribution / storage

It is envisaged that materials will be distributed via a number of means, mainly mechanical in order to reduce the amount of manual handling. This will be a combination of the following:

- Hoist
- Beneficial use of lifts
- Tower crane(s)
- Forklift(s) – telehandler
- Power pallet trucks
- Pallet trucks

Most materials will be removed from the delivery vehicle using tower crane or fork lift truck depending on the type of delivery and the intended location.

Deliveries being craned off will be pre-slung and where this isn't possible will have pre-installed edge protection and ladder access on the lorry.

For deliveries using the tower cranes, they will lift to the desired location ideally without having to lay down. It is not intended for the tower crane to be used to off load deliveries and lay down at ground floor for other methods to distribute.

Forklift will off load the vehicles and either load directly into the hoist or lay down on the ground floor where pallet trucks will be used to move the load into the hoist. Each tower has its own dedicated twin hoists.

There will be no storage of materials on ground floor. Ground floor is to be used material movements only from the pitlanes to the hoists

On reaching the level on which the materials are required the delivery will be taken to a designated lay down area or directly to the workface. Where the delivery is either particularly heavy or awkward it may be necessary to ensure suitable protection is in place prior to the delivery taking place. Again it is critical that the sub-contractor keeps the Westfields Logistics team fully informed of all such deliveries to ensure that any necessary

such protection can be put in place prior to the delivery arriving to ensure there are no hold ups.

Meadow Side hoist schedule

HOIST No.	Location	BASE	SERVING	CONFIGURATION	SIZE / CAPACITY	Internal Dimension
1/2	Plot 2- Mincing Lane	Gnd	Gnd-22	Twin Personnel / Goods	32/40 – 2.5te	L 3.8, W 1.5m, H 2.8m
3/4	Plot 3 - Aspin Lane	Gnd	Gnd-17	Twin Personnel / Goods	32/40 – 2.5te	L 3.8, W 1.5m, H 2.8m

In the case of the bathroom pods the site hoist system could not be made sufficiently large, this material will be loaded out using the tower cranes and canti decks.



FIGURE 12 - CANTI DECKS

Both tower cranes will be installed at similar times. The cranes have been positioned so as to ensure that they fully cover the footprint of the buildings along with sufficient cover for the offloading areas in Aspin Lane and Mincing St.

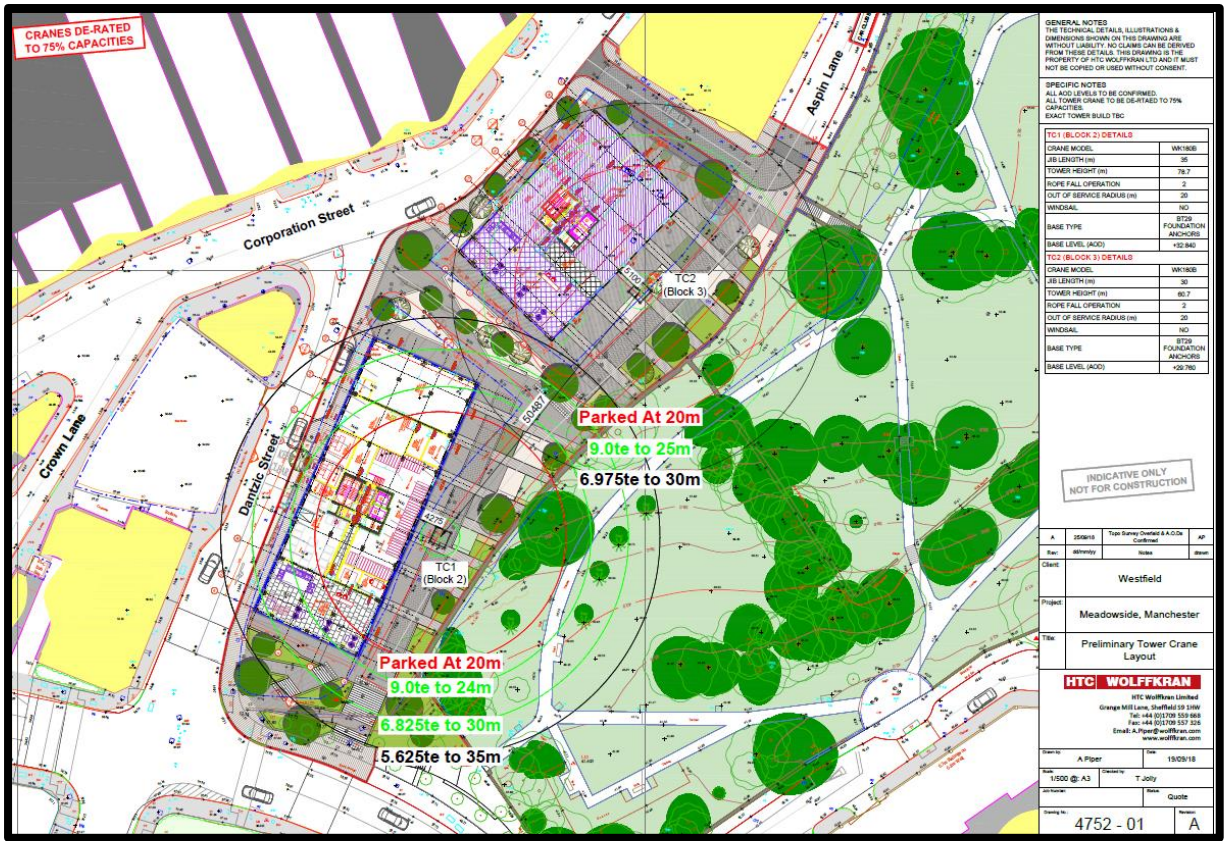


FIGURE 13 TOWER CRANE RADIUS

Westfields will be providing a crane coordinator to control all lifting operations via the sub-contractors' appointed persons within the Meadow Side project. The crane coordinator will be responsible for approving a safe system of work, and for having overall control of all lifting operations associated with this project.

The crane coordinator & the sub-contractor appointed person will have the authority to stop all or any lifting operations if there is any doubt or concern over the safety of such operations.

Any requirement for specialist lifting equipment will be procured within the relevant sub-contractor packages.

The lifts will be used for beneficial use during a period of the works. This use will extend beyond the hoist removal date so for a period will be the only form of vertical transportation available. During the Hoist usage periods these lifts will be predominantly used for pedestrian vertical transportation.

Once the hoists have been removed they will be used for both pedestrian and small goods vertical transportation.

All hoists and beneficial use lifts will employ a full time driver. This is to manage the movement of peopleand goods and to ensure no misuse of the vertical transportation system.

12. 9. Plant

There will be many various types of plant all of which are required to conduct a different function on the project. Details of each type are below.

9.2 Road Sweeper

Used primarily during the piling and excavation period due to muck away wagons displacing dirt and dust on the road. Will be employed on and an as and when basis.



FIGURE 14 - ROAD SWEEPER

9.3 Wheel Wash

Due to the tight logistical constraints on site the gate man will be serviced with a high pressure jet wash at each gate. There will be sufficient drainage and settlement tank facilities so that there will be no adverse effect on the sewer system. Wheel wash will predominantly required during the piling and basement formation operations where the delivery vehicles may be tracking in mud on site. It is expected that all wheels that leave the site have been cleaned sufficiently that no dirt will be tracked onto the highways.

9.4 Pallet Truck

Will be used in all areas of site for transportation of palletised materials. May be pump trucks or electric depending on intended use. Will typically be used for smaller loads of 3t or less.



FIGURE 15 - PALLET TRUCK

9.5 Fork Lift Truck

Due to tight spatial restrictions on site it isn't expected a fork lift truck will be utilised on Sun St. However due to the road closure it will be used on Earl St pit lane. It will be used for offloading palletised delivery vehicles to which a pallet truck will take over and deliver to relevant area.



FIGURE 16 - FORK LIFT TRUCK

13. 10. Security arrangements

The site has been secured by hoardings and this will be maintained and periodically adapted as and when necessary throughout the duration of the project to suit the progress of the works.

Throughout the project the level of security will be matched to the threat level perceived,

It should be noted, however, that each trade contractor remains totally responsible for their own materials and equipment on site.

All site security operations on the Meadow Side project will be undertaken using a Security Industry Authority (SIA) approved contractor. We propose using a layered approach to maximise security to the project. This includes not only physical methods, but a continued awareness of personnel security and information security.

From the outset we will conduct a security risk assessment using the findings to help develop the project's security policy. The assessment will remain live at all times and security operatives will regularly conduct risk assessments while performing their duties. A review will be carried out on a quarterly basis as a minimum.

In respect of control of access for both personnel and vehicles, the project will utilise an internet based access control system, (supplied through the logistics package with DataScope). All personnel who attend the site will, having sat the Health and Safety induction. 2no Full Height Turnstiles will be installed at the site entrance / security to restrict access for non-project personnel along with the use of a biometric system for recognition for all but visitors. The access control system will report on number of operatives onsite, CSCS statistics and whom is required at muster points in the event of a fire.

To ensure the integrity of the security system we will instigate a covert testing programme on its effectiveness. The results of such tests will be used to develop and improve the system.

There will be a CCTV system provided for the site which will be continually monitored at an off site facility. During out of hours periods motion sensors will be activated and alarms will become audible if triggered.

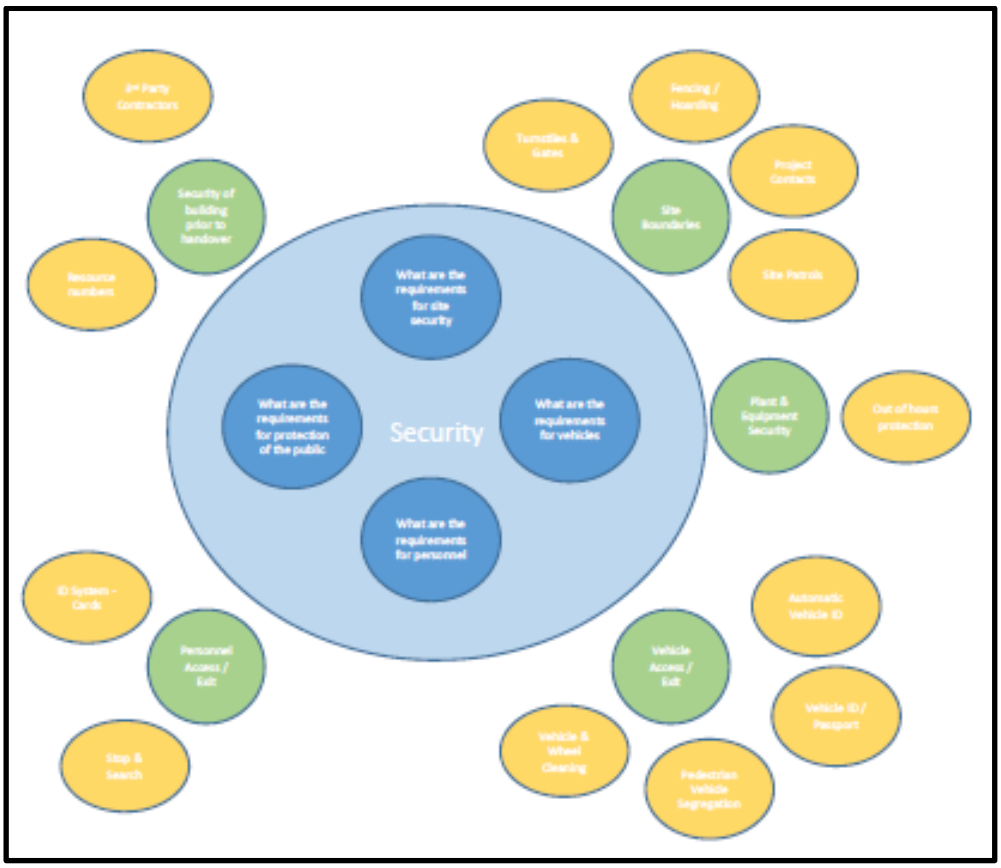


FIGURE 17 - SECURITY STRATEGY CONSIDERATION

10.1 Manned & physical security

The proactive approach of the security contractor is a factor in providing protective measures. We will ensure they are familiar with all work areas under their control and be trained and tested to look out for unusual behaviours or items out of place. Proof of training is, therefore, particularly important.

The Security staff will be briefed to look out for packets, bags, or other items in odd places, carefully placed (rather than dropped) items in rubbish bins and unusual interest shown by strangers in less accessible places. The security offices will have to have the confidence to report any suspicions, knowing that reports will be taken seriously even if they turn out to be false alarms. Management and operatives will also know who to report to and their contract details.

Essential points will be secured by physical, manned and remote security processes. Boundaries between the general public and the site will be continually monitored ensuring that they remain secure and clearly signed.

In respect of the site operatives, including all contractor and sub-contractor management and support teams, will be made aware of the importance of maintaining security on the site. They will also be given guidance on security awareness and informed of the role they can all play in ensuring the project remains secure. This will be via the site induction where such issues will be highlighted to enable them to understand, even at a basic level, the importance of the role they can play in ensuring a safe and secure working environment.

10.1.1 Assignment instructions for guards

Detailed assignment instructions drawn up by the security contractor, and approved by the Westfields Site Security coordinator, will list the duties to be carried out by the Security team. Each member of the Security team will be expected to have read and understood these instructions.
All site areas will be regularly and randomly patrolled and these will be recorded electronically. These will be supplemented with regular perimeter patrols to ensure its integrity. Any issues or breaches will be reported immediately.

10.1.2 Remote control

Intruder alarms, CCTV and lighting are commonly used to deter criminal activity, detect offenders and delay their actions. All these systems will be integrated so that they work together in an effective and coordinated manner – it is as much a deterrent as a means of protection.

10.1.3 Barrier & vehicle gate control

The provision and control of entrance barriers at vehicular points of entry provides the means to prevent all unidentified vehicles out of the project and at a safe distance. Any vehicle requiring access, for deliveries or essential works should have been booked in using DataScope booking system

10.1.4 Searching

All vehicles that attend the site will be subject to random searches, both inbound and outbound. Personal effects, including bags, parcels and other such effects may also be searched where appropriate.

Personnel attending site via the turnstiles may also be subject to random searches.

10.2 Site access

10.2.1 Pedestrian

It is our estimation that the total number of personnel on site at the peak period of the programme will be approx. 300. Access to site for the workforce (for the majority of the programme) will be via turnstiles at the Aspin Lane/Dantzic St corner of the site

Using these turnstile control points will restrict entry to site to validated, properly trained and authorised personnel and visitors.

Those people requiring access to the site (all the Contractor's personnel and all the sub-contractors and their personnel) must sit the Health and Safety Site Induction. As such all those requiring to be inducted must be booked in on-line using the following process:

- Complete the DataScope online induction application form 72 hours in advance of the date being requested (Log-in details will be made available at the sub-contractor's logistics pre-start meeting
- Once the place is confirmed the individual attends on the relevant day, arriving no later than 15 minutes before the start (late arrivals will be rejected and will have to re-book for the next available date)
- Inductees must, on arrival at the Induction room, produce all their relevant certification to the administrator (note originals only, photocopies will not be accepted)

- CSCS; SMSTS; SSSTS; CPCS; etc.
- CRB check

- Failure to follow any of these steps will result in the individual being refused access to the induction and consequently will not be able to access site, even under a visitor's pass. Any costs associated with this will be borne by the individual's parent company
- The induction will last approximately 1 hours at the end of which the individual will have a photograph taken and their biometric ID taken to allow access to site.

Initially, the induction will be held in the Induction Room in the Site Welfare block at 08:30hrs every Monday morning but as the number of personnel on site grows dates and timings will be reviewed. Other dates and times will be made available to suit the requirements of the number of workers that are being deployed on site.

In the event of there being a requirement to evacuate the site then the DataScope system will be utilised to establish that all site personnel have all been accounted for.

10.2.2 Control

To access through the turnstiles each operatives finger prints will have to be read.

Visitors attending meetings, giving training or briefings or just having a site tour but all will need to be managed to ensure they are safe at all times. These visitors shall be issued with a visitor pass which they must display at all times whilst on the project.

Visitors who will be going onto the construction site will need to be given the site safety briefing for visitors. This is essence is much shortened version of the Health and Safety Site Induction as they will be escorted at all times by a fully inducted member of the project team. It is designed to address the key issues they may be faced with whilst on site. For group visits there must be a ratio of 1:5, fully inducted project personnel to visitors.

10.2.3 Statutory rights of access

Certain organisations have a statutory right to access the site I.E the Health & Safety Executive and others. Westfields will ensure that for the HSE they are escorted at all times and that facilities will be made within the site hoarding.

10.3 Site hoarding





FIGURE 18 - HOARDING EXAMPLES

The security of the project and the separation of the site from the general public is paramount for a safe and secure construction environment. The site hoarding is the tool that provides this.

The site image is a valuable commodity and the maintenance of the hoarding in good order is critical to this. To that end we will instigate a clear regime of repair and cleaning.

The project boundaries are defined and will be already hoarded as a result of the preceding demolition contract. All licensing, lighting and kentledge such as is required, will be provided.



FIGURE 19 - CONCRETE KENTLEDGE HOARDING

Hoarding will be designed to meet Westfields standards.
The hoarding currently installed is surface mounted concrete kentledge with timber post, rails and plywood finish of approximately 2.4m high. It is currently painted black with project advertisement around the entire perimeter.
The hoarding will have lighting installed which will meet the minimum lux levels for street lighting.
The hoarding will be checked daily by the site security team to ensure that it is fully secure at all times and in good aesthetic condition.

14. 11. Waste Management

Waste has significant adverse environmental and social impacts and presents an increasing financial burden both for our business and for the delivery and management of client projects.

Consistent with Westfields's Environmental Policy our long term goal is to design, build and manage buildings and development projects with zero net waste to landfill.

Our aim is to be the leader in designing, constructing and managing low impact buildings. Efficient use of materials, and using management systems and processes that avoid waste generation are critical to delivering this aim.

All potential sub-contractors will be expected to demonstrate what measures they propose to engage to minimise waste that could be generated on site. The Westfields commercial team will take these factors into account when assessing what potential sub-contractors will ultimately cost the project, i.e. the cheapest sub-contractor may create the most waste and therefore will cost more in the long run.

We will expect to see examples as outlined below:

- Use of steel banding as opposed to shrink wrap on items such as bricks, blocks etc.
- Elimination of both cardboard boxes and shrink-wrapping on the same package
- Shredded paper and card filler instead of polystyrene chips
- Provision of higher quality recyclable pallets rather than cheap one-way versions
- Pallets returned straight away
- Timber separators rather than plasterboard strips
- Manufactured materials that are the right size to reduce cut-off waste
- Supply of materials in economical quantities reducing the number of deliveries and amount of packaging

It is expected that the main civils contracts such as groundworks, concrete, and steel frame will be contracted to manage and remove their own waste. These responsibilities will be identified in the relevant tender documents for each sub-contractor package.

For all other waste we will provide a service for its removal from site. Due to the lack of open areas on the Meadow Side site waste will be collected un-segregated and then taken to a Material Recycling Facility (MRF) where it will be sorted and all recyclable material extracted for that purpose.

The process for the general works will be based on the provision of skip compounds in appropriate areas and the use of a range of wheeled bins both 1100ltr and 600ltr sizes.

Empty bins will be distributed to specific bin compounds throughout the site from where the sub-contractors will collect the number they require for that day's work. The quantities they require will have been agreed at the previous day's Daily Activity Briefing (DABs) meeting.

The sub-contractors will, throughout the day, load all their unsegregated and compactable (non-hazardous / non-COSHH) into the bins and at the end of their shift will return the bins to the bin compound. All hazardous and COSHH waste will be the responsibility of the producing sub-contractor in accordance with the current legislation.

The Westfields Logistics team will then collect the bins at the end of their shift and exchange them with empty bins ready for the following day's work. They will take the bins to the central waste system where they will be loaded either into a compactor or tipped into skips for removal off site to the MRF where it will be sorted.

The sub-contractors will also be responsible for the removal of any non-compactable waste they may generate – reference to specific sub-contractors contracts will be required for individual clarification. They will also be responsible for reducing their production of waste and reuse materials wherever possible.

In certain packages and due to the bespoke nature of the waste they generate, the following work-streams will be responsible for removing their own waste. This is to be carried out in a coordinated and controlled manner and with agreement of the Westfields Logistics team:

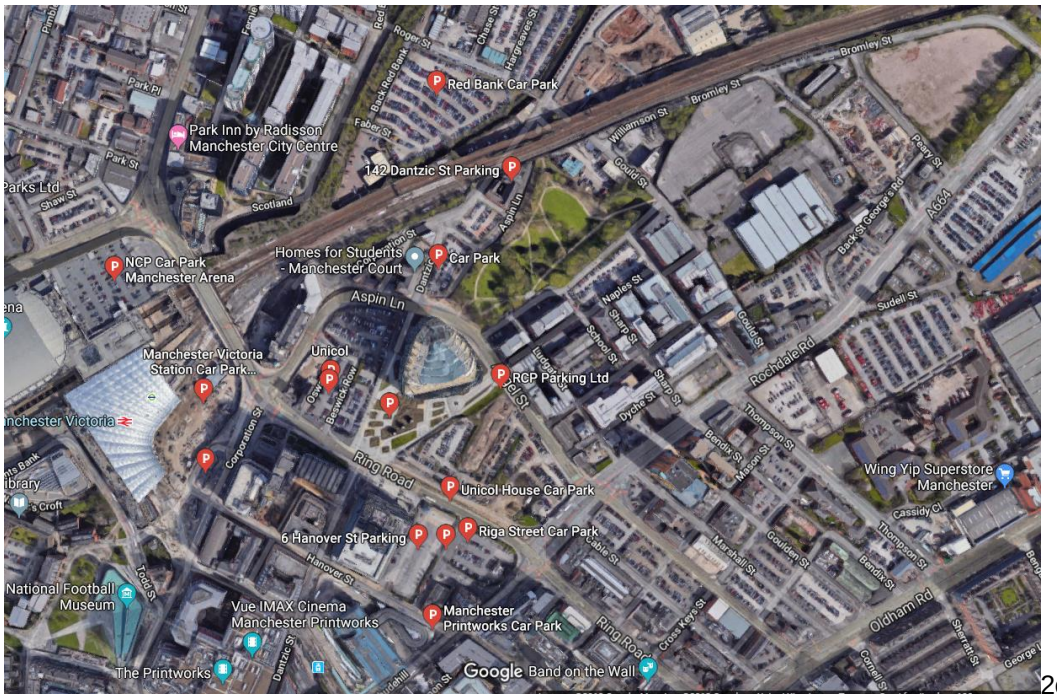
- Demolition
- Piling
- Steelwork (incl. cable drums)
- M&E electric cable drums
- Concrete frame

As mentioned at the very start of this document the Meadow Side project aspires to be **'The place to work'** maintaining a high standard of discipline and rigour and in order to help achieve this the cleanliness and tidiness of the site is imperative. To that end all sub-contractors will be responsible for keeping their work areas in a clean and tidy state throughout the working day and not just clean up at the end of their shift.

15. 12. Staff Travel

With the development in central Manchester area there are lots of public transport options available which will reduce the reliance on road traffic.

There will be no availability of onsite parking for the development and this is expected to deter the use of car transport.
If necessary there are several paid carparks located within a 5 minute walk away which can be used.


2e

The major train stations of Victoria, Piccadilly are between 5-15 minute walk away and it is possible to gain access the majority of the greater Manchester area using these stations. There is also a bus and tram route which can be utilised.
Westfields is a major promoter of cycling to work. Cycling will be encouraged on this development by providing secure cycle racks and shower facilities on site.

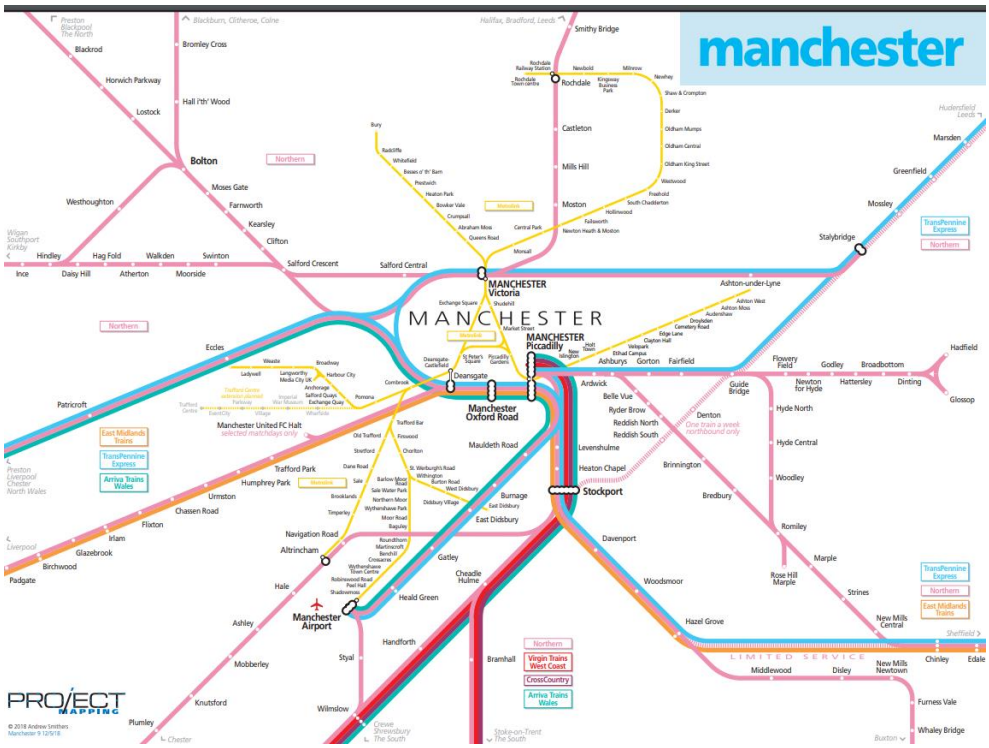


FIGURE 20 - TRAIN MAP NETWORK

16. 13. Site communications

Westfields will operate a trunk radio system in accordance with the independent regulator and competition authority for the UK communications industries, (OFCOM).

The radio system will facilitate one to one calling, caller group calling and a dedicated emergency channel for managing of site emergencies. The base station for the system will be located at high level from where coverage will extend to the whole of site including the basement.

Radio handsets will be issued to key individuals from supervisors upwards. Each hand set will be allocated to an individual who will sign to accept receipt and acknowledgement that they will be financially responsible for any loss or damage to the unit.

When issued with a radio, each recipient will receive full training on it use including how the emergency channel is to be used.

Abuse of the system will be managed by use of the following facilities:

- Caller ID to identify potential misuse
- The ability to electronically remove handsets that may have been lost or stolen, avoiding unauthorised access of the system
- A maximum call duration time to avoid queuing for use of the system
- The ability to restrict certain handsets from making one to one calls.

The site will be comprehensively signed to inform the workforce of safe pedestrian routes, clearly routed emergency exits, as well as information boards containing all important site information. Such

information will include emergency procedures and contacts including first aiders as well as all health, safety and environmental data.

Upkeep of the site signage for the Meadow Side project will be the sole responsibility of the logistics team. A signage team will be responsible for ensuring that all signs are correct, and are changed when the information is amended or altered i.e. when there is a new safe walking route or emergency exit procedures change.

Plans showing layouts of the site welfare, access & egress points, and material movement routes will be displayed on notice boards located in prominent positions around the site.

The team will ensure that the signage on site will be an integral part of ensuring the Meadow Side project is well informed about what is happening and what is critical to them going home safely and being able to do the job they have come to the project for.

The following images give an idea of the sort of signage that will be used around the site:



FIGURE 21 - SITE SIGNAGE

17. 14. Temporary services

The temporary services will include electrical, water and fire evacuation systems. These services will be provided by a temporary services sub-contractor under the control of Westfields.
Breakdown of services provided are:

Temporary Power

- Development interface.
- Temporary substations
- Main MDU panels.
- Transformers (Lighting and Power).
- Emergency lighting.
- Temporary lighting for access/egress.
- Site office and welfare accommodation power and lighting, relocations during the course of the project.

- Hoist supplies.
- Tower Crane supplies
- Fire alarms.
- Security alarms.
- Power for temporary plumbing supplies.
- Hoarding lights.
- Maintenance equipment.
- Attendance and consumables
- PAT Testing

Temporary Water

- Utilities connections
- Accommodation water supply and waste
- Satellite accommodation water supply and waste
- Connection to sewer (incl. discharge licenses)
- Cold water supplies to the buildings
- Potable water supplies
- Maintenance
- Attendance and consumables
- Chlorination
- Legionella control
- Fire Evacuation
- Builder's water
- Waste removal

18. **15. Protection**

Westfields has taken consideration of the five primary issues that affect traffic and road movements. These being:

- Maintaining site security.
- Segregation of plant and operatives / the public.
- Manoeuvring of vehicles & plant
- Delivery coordination, loading and storage
- Delivery times

Regulation 15 of the Construction (Health and Safety) Regulations requires that every construction site shall be organised in such a way that, so far as is reasonably practicable, pedestrians and vehicles (and / or plant) can move safely and without risk or injury to all parties.

In short, this regulation requires the provision of safe, effective, and functional pedestrian and vehicle segregation. To that end the site shall ensure that, where reasonably practicable, pedestrians and vehicles (and / or plant) shall not share access / egress points or circulation routes.

Therefore, wherever vehicles (and / or plant) and pedestrians are required to utilise adjacent access during construction around the Meadow Side project suitable physical segregation with signage shall be installed to demarcate safe pedestrian routes. The entry gate points will be isolated from site pedestrians by use of designated pedestrian routes and physical barriers.

This arrangement satisfies the aforementioned requirements but will be reviewed as the project proceeds to ensure that any construction activities do not present additional risks. Should any additional risk be subsequently identified then appropriate action will be taken to eliminate or minimise such risk.

Where necessary appropriate signage will be fixed to gates and all areas where there is a possibility for vehicles (and / or plant) to come into contact with pedestrians and to denote vehicle / pedestrian crossover areas. If they cannot reasonably be avoided a Banksman will be in attendance.

The following measures will be introduced to make both pedestrians and vehicles aware of each other around site:

- Creation of safe crossing points where walkways interface with the site access or other vehicular routes
- Signage to warn pedestrians on public areas of site entrances
- Signage to warn site vehicle operatives of pedestrian crossings.
- Physical demarcation within working areas between site operatives and site vehicles (and / or plant)
- Suitably trained Traffic Marshals to ensure safe access / egress; clearly identifiable wearing orange hi-vis vests / jackets and helmets of the appropriate colour – blue or white after 6 months probationary period expires after attaining PPS qualification
- No uncontrolled pedestrian traffic to be allowed through the site



FIGURE 22 - EXAMPLES OF PEDESTRIAN SEGREGATION, WALKWAYS AND CROSSOVER POINT

On a separate note the Traffic Marshals will ensure that the site entrances, both vehicular and pedestrian, are kept clear of rubbish and clean (no mud on the roads).

Protection to the project falls into the following categories:

- Sub-Contractor Works.
- Access Routes.
- Weather.
- General Damaged

All sub-contractors are responsible for the protection of their works, including long term provision prior to works areas being handed over. In addition to this, where it applies they are also responsible for the protection of specialist areas, such as plant rooms, MEP equipment.

Designated material route protection, as the finishes are completed, all designated routes for materials will receive additional protection to ensure that they are maintained in the condition in which they were handed over. This protection will be the responsibility of the finishing sub-contractors. All areas where materials are handled, storage areas and access routes by the Westfields logistics management team will require over protection, the responsibility is with the Logistics management team.

Site stocks of protection material will be required at all times for immediate use; these materials are will be provided by both the sub-contractor and the Westfields logistics management team.

Prior to the building becoming watertight the Westfields logistics team will be tasked with the general removal of standing water to the floors after any period of rain.

Where water ingress is a direct result of a Sub-Contractor activities, the relevant Sub-Contractor will be responsible for the removal of this water and any associated costs associated with its ingress in to the building.

Any vertical openings (such as lift shafts, risers, stairwells, atria, etc) will have temporary waterproof bunds constructed where permanent bunds have not been designed as part of the works. These works are within the Sub-Contractor's package.

A schedule and drawings of weather protection requirements will be developed during the preconstruction stage and continued during construction.

19. 16. Progressive cleaning

Over and above the removal of construction waste as outlined in S. 9.0 above the site will have an on-going cleaning regime throughout the course of the working day to ensure the site is kept clean and tidy. This will involve the necessary plant and labour to carry this out and keep the site to a high standard of cleanliness.

Sub-contractors will be required to maintain their work areas in a clean and tidy state at all times. They will also be required to carry out any specialist trade cleans and pre-inspection cleans as denoted in their package documents.

Any un-attributable waste that is required to be cleaned up will fall under the remit of the Westfields Logistics team. This team will also clean up in general areas such as the main floor areas and staircases.

In the event that the sub-contractors are failing in their efforts to maintain a clean and safe site for themselves and the rest of the site workforce, Westfields Logistics will issue clean up notices.

There will be three levels of notice:

- Clean up notice – raised in the event of unacceptable levels of housekeeping. These are to be actioned by the sub-contractor concerned within an agreed time frame. Failure by the contractor to respond to the notice will result in Westfields Logistics carrying out the work
- Obstruction notice – raised in the event of the sub-contractor materials being stored in the incorrect location. These are to be actioned by the sub-contractor concerned within 6 hours of receipt. Failure by the contractor to respond to the notice will result in Westfields Logistics carrying out the work
- Health 7 Safety notice – raised in the event of a sub-contractor materials causing an unacceptable risk such as fire loading being ignored or fire escape being blocked. Resolution of these notices by the sub-contractor is required within 1 hour of receipt and if this is not possible then Westfields Logistics will carry out the work.

All associate costs that arise in relation to the issuing, raising and actioning by of any clean up notices and any subsequent work will be counter charged back to the relevant sub-contractor via their monthly applications for payment. It should be stressed that contra-charging is seen as a last resort and will not be carried out lightly.

Through education, stringent management techniques and constant monitoring, a site culture will be created that allows the site to progress whilst maintaining the ' Best in Class' standards the project is striving for.

Further to the construction site waste there is the waste and mess created by vehicles on the site haul roads especially during the demolition phase and before any roadways are finished and opened up. To that end road sweeping will take place on the highways immediately in front of the access and egress points to ensure no mud is deposited on the public highway. This will be carried out by the relevant sub-contractor whose works have necessitated the requirement of a road-sweeper.

It is expected that all sub-contractors will conduct a builders clean upon completion of their works to enable the clients team to inspect and snag the areas. The builders clean will generally involve removing all rubbish and waste, removing any stickers, packaging or protection, basic clean of all surfaces. Once snagging is complete and prior to practical completion a full sparkle clean will be completed to all areas which will consist of a deep clean to standard you would expect at home.

20. 17. Hoardings

The security of the project and the separation of the site from the general public is paramount for a safe and secure construction environment. The site hoarding is the tool that provides this.

The site image is a valuable commodity and the maintenance of the hoarding in good order is critical to this. To that end we will instigate a clear regime of repair and cleaning.

The project boundaries are defined and will be already hoarded as a result of the preceding enabling works contract. All licensing, lighting and kentledge such as is required, will be provided so that it complies with the London Borough of Hackney and the Corporation of London requirements.





FIGURE 23 - TYPICAL WESTFIELDS HOARDING DETAILS

18. Noise, Dust and Vibration

18.1 Neighbour Newsletter ("Mail Drop")

It is good industry practice to keep our project neighbours informed of programmed project activities/changes to programmed activities by the draft and issue of a newsletter or "mail drop" as it is commonly known.

This is a good demonstration of the project team concern to ensure all neighbours are as up to speed with the most recent available information as they possibly can be. The need for newsletters, particularly the frequency or period of issue, will be decided at resident's meetings and internal meetings.

It is imperative that generic newsletters are not written. These type of newsletters are impersonal and show rightly or wrongly no genuine concern for neighbour issues. They must be specific. It is the Project Manager's responsibility to ensure that all newsletter requirements are identified, newsletters are generated in a timely manner and are issued to the correct and appropriate people.

The issue of a newsletter to the wrong people may result in unnecessary bad neighbourhood relations.

Don't issue a newsletter two days before the activity! A reasonable period requires to be defined i.e. two weeks and the need for dual newsletter issue is good policy i.e. first issue two weeks, second issue one week.

The quality of the newsletter is extremely important and could be construed as to the quality of the management and project itself i.e. glossy coloured or shoddy photocopy.

18.2 Noise and vibration

Noise and vibration control will be of significant importance throughout the demolition and construction phases. Specific control measures will be put into place to ensure that construction activities have the least possible impact on all adjoining parties. A section 61 will be applied for with London Borough of Hackney council to establish the parameters to which the project can work within.

Initially, the ambient noise and vibration criteria will be established by a detailed specialist survey to record existing conditions. Maximum effectiveness can only be achieved with the co-operation of the adjoining parties.

This information will provide data from which we will assess the likely effects of the various construction activities in addition to existing noise levels, and provide benchmarks to aim at. Any plant considered for the project will be reviewed not only from a performance criteria, but also a noise and vibration criteria.

Construction plant and methods will be chosen which, by their nature, generate the least possible noise and vibration. There will be operations that have higher noise or vibration levels than ideal. It may prove necessary to carry out such operations during restricted periods. Given the diverse nature of the adjoining parties, detailed discussions will be undertaken to reach consensus agreement as to what the restricted periods will be with local residents and applicable Environmental Health Departments.

Various measures can be used to assist in attenuating noise at source. Mentioned above is the preference to use plant and methods with low inherent noise generation. Additional noise control is possible using acoustic screens around operations, and by sealing building openings with acoustic baffles.

Key noise control measures will include:

- communication with and recognition with neighbours
- “crushing”, rather than “breaking” methods of demolition
- restricted working hours for particular activities
- attenuated plant and equipment
- “silent” running hoists
- careful plant and equipment selection.

Westfields fully acknowledges any likely restrictions imposed by notice of any relevant Environmental Health Departments.

Westfields Trade Contractors must comply with BS5228 “Noise on Construction and Open Sites”.

18.3 Monitoring

Sporadic monitoring of ambient noise levels and vibration will occur throughout the life of the project by strategically positioned noise and vibration monitoring equipment.

Localised noise assessment and monitoring shall be undertaken by Westfields Trade Contractors to establish levels and determine the necessary controls required. Refer to suggested noise reduction methods overleaf.

Machine	Source of Noise	Possible Remedies		Other Options
Piling equipment	Pneumatic/diesel hammer or steam winch vibrator driver	Enclose hammer head and top of pile in acoustic screen, acoustically dampen sheet steel piles to reduce vibration and resonance		1) Quieter method of piling. 2) Other methods of soil Retention and ground improvement eg diaphragm walls, ground anchors, shafts formed of pre-cast concrete segments sunk into the ground under kentledge, use of pre-treatment prior to excavation such as dewatering, freezing soil injection etc
	Impact on pile	Use resilient pad (dolly) between pile and hammer head eg two layers of non-flammable cloth stuffed with glass fibre or mineral wool and protected by plywood. Packing should be kept in good condition		
	Crane cables, pile guides and attachments Power units or base machine	Careful alignment of the pile and rig Fit more efficient silencer or exhaust. Acoustically dampen panels and covers. When intended by the manufacturers engine panels should be kept closed. Use acoustic screens where possible		
Cranes, Dumpers, Earth-moving plant	Engine	Fit more efficient silencer or exhaust. Enclosure panels, when fitted, should be kept closed		
Compressor Generator	Engine	Fit more efficient exhaust silencer	Screen the compressor or Generator	Use electric motor in preference to diesel or petrol engine for compressors. If there is no mains supply, a sound reduced compressor or generator can be used t supply several pieces of plant. Use centralised generator system
	Compressor or generator	Acoustically dampen metal casing. Enclosure panels should be kept closed		
Pneumatic concrete breaker and tools	Tool	Fit a muffler or silencer, this will reduce the noise without impairing efficiency	Use the breaker inside a portable acoustic enclosure (increased Noise levels for operator are likely)	Use rotary drill and burster. Hydraulic and electric tools are also available. A thermic lance can be used to burn holes in concrete and to cut through large sections of concrete; any reinforcement helps the burning process. For breaking large areas of concrete, equipment which breaks concrete in bending could be used
	Bit	Use dampened bit to eliminate “ringing”		
	Air line	Leaks in air should be sealed		
	Motor	Fit muffler to pneumatic saws		
Power saws	Vibration of blade or material being cut	Keep saw sharp. Use a damped blade. Clamp material while cutting with packing if necessary		
Rotary drills diamond drilling and boring	Drive motor and bit	Use machine inside an acoustic cover		Thermic lance

Riveters	Impact on rivet	Enclose working area in acoustic screen		Design for high tensile steel bolts instead of rivets.
Explosive powered tools	Explosion of cartridge	Use a sound reduced gun		Drilled fixings
Pump	Engine pulsing	Enclosure in acoustic screen (allow for engine cooling and exhaust)		
Batching plant	Engine	Fit more efficient silencer on diesel or petrol engine. Enclose engine	Locate static mixing plant as far as possible from those likely to be inconvenienced by the noise	Use electric motor in preference to diesel or petrol engine
Concrete mixer	Filing	Do not let aggregates fall from an excessive height		
	Cleaning	Do not hammer the drum		

18.4 Dust migration on site

Numerous dust migration preventative measures will be employed relative to the likelihood and severity of dust generation. In principle all contractors will employ methods which avoid the generation of dust to the lowest practical level. The following measures are proposed:

- isolation of dust generating activities i.e. enclosures/areas sealed off by means of visqueen or similar sheeting
- demolition activities enclosed by means of scaffolding enclosed with monorflex sheeting (to remain for construction)
- dust suppression by means of water spray
- enclosure of waste leaving site by means of fly sheeting/sealed skips
- engineering controls i.e. Local Exhaust Ventilation (LEV) filtration

Westfields shall review all contractors proposed methods for dust control.
The generation of dust will be continually monitored by the Project Security and Logistics Manager.

Dust likely to be generated by vehicles generally traversing the site shall be suppressed by means of water spray.

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
1.0	**Key considerations**				**Project specific**	
1.1	**Incident management**	Unplanned event occurring without Westfields knowledge	H	Develop project emergency procedures /plans to include: • Fire • Security -Unauthorised entry • RTA's-spillages • Inclement weather • Accident and Incidents • Bomb threats • Theft	L	Relevent / specific project plans i.e CPP, Fire Plan etc.
1.2	**Existing locations**	Existing locations impacting on project delivery	H	• Liaison with local authority • Monitor external traffic movements • Review signage strategy and effectiveness of signage • Access – egress routes controlled at all times –public interface	L	
1.3	**Training / Competence**	Use of non-competent logistics / traffic management personnel	H	• All traffic marshals to be competent • Traffic marshals to be briefed on task specific RAMS, CLOCS requirements • Emergency procedures- trained in spill kit procedures • Regular toolbox talks on key areas of concern as the site evolves	L	Recognised Competency Plant and Vehicle Marshaller Category A73 CPCS
2.0	**Vehicle Management (Internal)**				**Project specific**	
2.1	**Vehicle segregation**	Moving vehicles mixing with site operatives	H	• Adequate signage-giving clear information to all contractors • vehicle drivers information to include vehicle and pedestrian routes via DMS • Access and Egress controlled at all times-public interface • Monitor traffic movements and effectiveness of signage	L	
2.2	**One way systems**	Mis-use ,bad management of traffic routes	H	• Clearly defined and signed routes, pre-planned routes to stop reversing • Use traffic light systems • Speed limits • Vehicles escorted at all times by contractor traffic marshal	L	
2.3	**Unloading areas**	Falling materials, vehicles striking contractors, speeding vehicles, weather conditions	H	• Drivers to adhere to speed limits • Exclusion zones clearly defined • Use of lifting gantry • All loads to be pre-slung • SSOW developed-lifting plans	L	

18. Project traffic management and logistics risk register

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
3.0	**Vulnerable road user management (External)**				**Project specific**	
3.1	**Pedestrian segregation**	Pedestrians mixing with moving vehicles	H	• Warning signage, for pedestrians and delivery vehicles • Exclusion zones-Marshalled • All access/egress areas Marshalled at all times- adequate lighting in all areas • Footpaths closed adjacent to loading bay areas and clearly signed alternative routes identified	L	CLOCS requirements
3.2	**Vulnerable road users**	Vulnerable road users sustaining injury	H	• Emergency information available for all site staff-local hospital, ambulance , police numbers • Regular checks of policies /procedures • Traffic marshals have radios to quickly identify and call in an incident	L	
3.3	**Non-use of designated vehicle routes**	RTA's, Traffic Jams,	H	• All deliveries to use DMS • Subcontractors to confirm routes to all delivery drivers including overseas drivers • Contractor to constant assess the designated traffic route to see if any external impacts making the route unsafe	L	
3.4	**WRRR compliance**	Vehicles being non-compliant with WRRR standard	H	• Information/requirements ref WRRR/CLOCS included in contracts, start-up meetings • Contractors to submit evidence that they are compliant • Turn away all non-compliant vehicles to create a compliant culture	L	WRRR Standard
3.5	**Cyclists**	Collision with cyclists	H	• Traffic marshals to be trained on the risks cyclist pose • Sun St pit lane to use stop/go boards to stop traffic to enable the delivery vehicles to enter the site • Designated vehicle route to avoid cycle highways where possible • All vehicles to be CLOCS compliant	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
4.0	**Delivery management**				**Project specific**	
4.1	**Unplanned deliveries**	Unscheduled deliveries preventing compliance with delivery schedule	H	• Logistics team to inform Construction team who will make final decision • If the unscheduled delivery cannot be accommodated then it is to be turned away	L	Delivery management system (DMS)
4.2	**Overseas vehicles**	Non-compliance with WRRR standards	H	• Site rules ref WRRR to be instigated by project team to be included in contracts	L	
4.3	**Delivery restrictions**	Deliveries cannot be undertaken Mixing deliveries with vulnerable road users	H	• Delivery timings to complied with • Good communications with all stake holders ensuring correct information on DMS ref size of vehicle, correct equipment to unload etc. • Good management of access/egress minimal disruption for all 3rd parties	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
5.0	**Material distribution / Storage**				**Project specific**	
5.1	**Material Storage**	Material stored with the potential to cause harm	H	• Designated lay down areas for all subcontractors, • Clearly defined with signage and barriers • Minimise build-up of excess materials by good planning	L	Project lifting strategy
5.2	**Vehicle movements**	Vehicles unable to unload	M	• Practical Planning using DMS • Equipment availability- for vertical and horizontal unloading • Contractors fully briefed on the capabilities of the loading bay during tender and on site.	L	
5.3	**Unloading**	Unloading activity causing harm / damage	H	• Use of lifting gantry for unloading where possible • Information for all deliveries on lifting plans • Exclusion zones/warning Signage	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
6.0	**Interfaces**				**Project specific**	
6.1	**3rd parties**	3rd party activities impacted by logistics activities	H	• Revise traffic management plan as job progresses • Review signage at regular intervals –for effectiveness • Review vehicle and pedestrian routes as job progresses • Liaise with local authority and all stakeholders ref site wide developments on a regular basis • Regular checks of Cycle safety routes	L	
6.2	**Neighbours**	Project neighbours contacting enforcing authority	H	• Review current complaints procedure • Regular meetings with local tenants association reviewing changes to access roads, parking facilities etc. • Comply with local authority noise, dust and nuisance requirements	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
8.0	**Craneage / Hoist's**				**Project specific**	
8.1	**Lifting operations**	Unplanned lifting activities resulting in damage / harm	H	• All lifting operations to be planned- SSOW/ Lifting plans • All operatives involved in lifting operations -competent	L	Strategic lift plan
8.2	**Weather**	Inclement weather impacting lifting activities	H	• Regular weather checks for local areas • Flexibility in lifting programme /delivery schedule	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
9.0	**Site communications**				**Project specific**	
9.1	**Emergency procedures**	Lack of understanding of emergency procedures	H	• All operatives to carry out site induction training- refresher training • Emergency Information displayed on site notice boards –reviewed and updated regularly • Emergency procedures to be reviewed at regular intervals and communicated to all operatives	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
11.0	**Protection**				**Project specific**	
11.1	**Weather**	Damage to project	H	• Materials stored and secured safely • Winterisation process developed • Hoarding weekly checks completed	L	
11.2	**General damage**	Damage to finished / installed items	H	• Agreed protection methods in place • Process in place for hand overs of equipment and work areas • Permit to work in controlled areas	L	

Nr	Activity	Key Project-Specific Hazards	Risk rating	Key Project Specific Control Measures	Residual Risk	Additional comments / information
14.0	**Security arrangements**				**Project specific**	
14.1	**Trespassers**	Death / serious injury to trespasser	H	• 24 /7 security presence- trained in site specific emergency procedures • Warning signage prominently displayed • Security assessment reviewed as job progresses • External hoarding/barriers/gates and lighting inspection at regular intervals	L	
14.2	**Visitors**	Unauthorised visitors on site	H	• 24 /7 security presence - trained in site specific emergency procedures • Security assessment reviewed as job progresses • Warning signage prominently displayed • External hoarding/barriers/gates and lighting inspection at regular interval	L	
14.3	**Out of hours**	Unauthorised access to project	H	• 24 /7 security presence - trained in site specific emergency procedures • Warning signage prominently displayed • Security assessment reviewed as job progresses • External hoarding/barriers/gates and lighting inspection at regular intervals	L	