Construction Management Plan

for

Meadow Side Plot 2 and 3

Manchester

Revision 0 Issued:

Construction Phase Plan

TEMPLATE DOCUMENT CONTROL

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Construction Phase Plan

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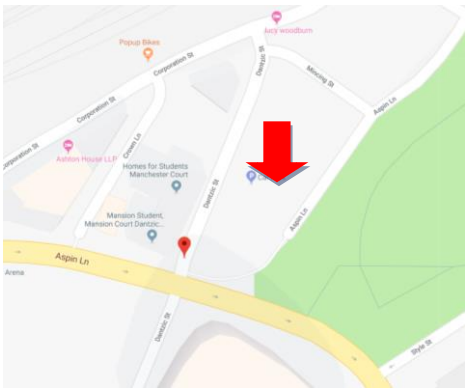
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1. DESCRIPTION OF PROJECT

1.1. Project Address

Existing land within and around the vicinity of Angel Meadows, NOMA district Manchester.

Meadow Side, Aspin Lane, Manchester, M4 4DP



1.2. Project description

2no. new build residential apartment blocks including 286 apartments, commercial units and associated public realm. Plot 2 is 22 storeys in height and plot 3 is 17. Both plots consists are supported on concrete piles located under key structural elements. There is a single storey concrete basement underneath each basement. The structural frame of the building is reinforcement concrete throughout consisting of an RC core, RC columns and a flat RC slab. Both buildings are clad in unitised curtain walling system and an inverted waterproof system to the terraces.

Each building has a single staircase and 2 lifts which are located in the RC core. There is a corridor running the length of each building with apartments feeding off from this. Each apartment typically consists of bathroom, kitchen/living area and bedrooms. The bathrooms are intended to be podded with all other elements being installed traditionally.

A system of risers run vertically throughout the building from the ground floor and basement plant rooms and service these apartments.

At level 2 of plot 3 is a gym and lounge area for use of the residents and at ground floor of each building is the lobby, retail units, sub-stations, cycle storage, bin stores and plant rooms,

1.3. Programme details including any key dates

Start date: 12th November 2018

Duration of Construction Phase: 126 weeks

Based on current programme logic the maximum number of contractor involved at any one time: 250 operatives

1.4. Client

Name: Angel Meadows (FEC) Limited

Address: Ground Floor, 12 Stanhope Gate, London, W1K 1AW

Contact: Gavin Taylor Tel: [Tel] Email: gavin.taylor@fecil.com.hk

1.5. Employers Agent

Name: Arcadis (UK) Ltd

Address: Three Picadilly Place, Manchester, M1 3BN

Contact: Nick Whitehouse Tel: 0161 240 1485 Email: nick.whitehouse@arcadis.com

1.6. Principal Designer

Name: Chapman Taylor

Address: Bass Warehouse, 4 Castle St, Manchester, M3 4LZ

Contact: Rachel Rogerson Tel: 0161 828 6500 Email: rrogerson@chapmantaylor.com

1.7. Principal Contractor

Name: Westfields Construction Ltd and China Zhejaing Construction Group (H.K.) Limited Joint Venture

Address: 1-3 Old Mill Road, Hunton Bridge, Hertfordshire WD4 8RD

Contact: James Varley Tel: 01923 270465 Email: james@westfieldsconstruction.com

1.8. Architect

Name: Chapman Taylor

Address: Bass Warehouse, 4 Castle St, Manchester, M3 4LZ

Contact: Rachel Rogerson Tel: 0161 828 6500 Email: rrogerson@chapmantaylor.com

1.9. Structural Engineer

Name: WSP (UK) Ltd

Address: The Victoria, 150-182 The Quays, Manchester, M50 3SP

Contact: Stephen Clare Tel: [tel] Email: Stephen.clare@wspgroup.com

1.10. Mechanical and Electrical Services Designers

Name: WSP (UK) Ltd

Address: The Victoria, 150-182 The Quays, Manchester, M50 3SP

Contact: Stephen Clare Tel: [tel] Email: Stephen.clare@wspgroup.com

1.11. Temporary Works Engineer

Name: Geoff Davies

Address: 1st Floor, Derbyshire House, St Chads Street, London, WC1H 8AG

Contact: [Contact] Tel: [Tel] Email: Geoff.d@rdgengineering.co.uk

1.12. Building Control Consultant

Name: Manchester City Council Building Control

Address: Building Control Department, Oldham Rd, Manchester, M60 2LA

Contact: [Contact] Tel: [Tel] Email: [Email]

1.13. Acoustic Consultant

Name: WSP (UK) Ltd

Address: The Victoria, 150-182 The Quays, Manchester, M50 3SP

Contact: Kiran Madhar Tel: [tel] Email: kiran.madhar@wspgroup.com

1.14. Fire Consultant

Name: WSP (UK) Ltd

Address: The Victoria, 150-182 The Quays, Manchester, M50 3SP

Contact: Maxime Rapenne Tel: [tel] Email: Maxime.rapenne@wspgroup.com

1.15. Landscape Architect

Name: Planit-I.E. Limited

Address: Manchester Studio, 2 Back Grafton St, Altrincham Cheshire, WA14 1DY

Contact: Kevin Redhead Tel: 0161 928 9281 Email: kr@planit-ie.com

1.16. Existing records and plans (delete where no existing structures on the site)

Copies of the information detailed below will be maintained in Site H&S File.

Information	Required	Available	Provided	Details / Reference / Notes
Underground drainage drawings	X	X	X	
Underground services drawings	X	X	X	
Construction drawings	X	X	X	Stage 3 Design only
Structural drawings	X	X	X	Stage 3 Design only
Mechanical services drawings	X	X	X	Stage 3 Design only
Electrical services drawings	X	X	X	Stage 3 Design only
Asbestos Surveys / Registers	X	X	X	

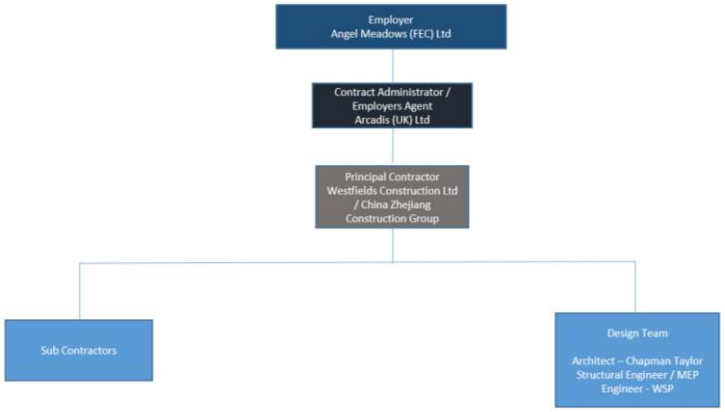
1.17. Surveys and Investigation Reports

Copies of the information detailed below will be maintained in Site H&S File.

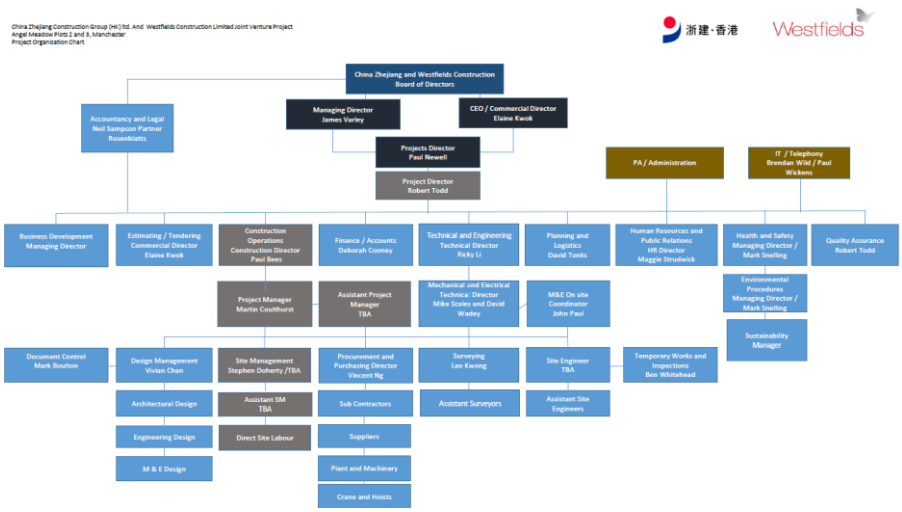
Information	Required	Available	Provided	Details / Reference / Notes
Demolition & Refurbishment Asbestos Survey (when demolishing or working on buildings constructed before 2000)				Not required as no existing buildings present
Geotechnical report	X	X	X	
Soil Contamination Report	X	X	X	Asbestos and heavy metals found in certain areas
U/G services investigation (desktop)	X	X	X	
U/G services investigation (physical)	X			To be conducted with an enabling works contractor
Electrical services investigation				Not required as no existing buildings present
Mechanical services investigation				Not required as no existing buildings present
Structural survey				Not required as no existing buildings present
Ordnance report	X	X	X	
Lead paint test (when redecorating existing wood or metalwork on buildings constructed before 1980)				Not required as no existing buildings present
Drainage Survey	X	X	X	
UXO Desk Study and Report	X	X	X	
Tree Survey	X	X	X	
Network Rail asset protection study and survey	X	X	X	

2. THE PROJECT TEAM

2.1. Project Organisation Structure



2.2. Westfields CZ Organisation Structure



INSERT PROJECT TEAM ORGANOGRAM

3. DUTY HOLDERS

Project Director

The Project Director is Robert Todd

Email: Robert.todd@westfieldsconstruction.com

Phone: 07470 783 022

Project Manager

The Project Manager is Martin Coulthurst

Email: martin.coulthurst@westfieldsconstruction.com

Phone: 07521 402 052

Site Manager

The Site Manager for the construction phase is Martin Coulthurst

The Responsible Person (Fire Safety)

The Responsible Person on this project is Martin Coulthurst

First Aiders

The site manager is the primary first aider.

The secondary first aider is Robert Todd

Temporary Works Coordinator

The Temporary Works Coordinator is Geoff Davies

The Appointed Person (Tower Cranes)

The Appointed Person (Tower Cranes) is N/A

Scaffold Inspection

The person responsible for scaffold inspection is Martin Coulthurst

4. RESPONSIBILITIES

In addition to the items listed below which mainly cover H&S related items, please see the 'Project Roles - Responsibilities Matrix' for a full break down of all roles and responsibilities for each discipline

4.1. Project Manager.

Is responsible for the overall effectiveness of this construction phase plan.

Shall monitor and review this construction phase plan during the course of the project.

Shall inspect the sites to ensure that the construction phase plan is being complied with and implement immediate remedial action if hazardous situations are discovered.

Shall review site health and safety audit reports with the Site Manager and shall ensure that actions are either completed by the due date. The Project Manager may agree revised closure dates where they believe this to be both appropriate and safe to do so.

Shall review and when they are suitable approve contractors Risk Assessments and Method Statements [RAMS].

Shall assist the Site Manager if required to produce or review risk assessments and shall ensure that training, equipment and facilities are available to comply with the findings of the assessments, and that once in place procedures laid down are complied with.

Shall seriously review any safety recommendations received.

Shall investigate all accidents and implement corrective action.

4.2. Site Manager

Reports to the Project Manager.

Is responsible for the day to day running of the project for which they have been appointed and is responsible at site level for ensuring that the construction phase plan is:

- implemented.
- reviewed monthly of following any incident or other situation where its effectiveness is call into question. The plan must be signed to confirm this review;
- updated when required.

Shall familiarise himself with the construction phase plan.

Shall ensure that operatives, trade contractors and other visitors to site are aware of and abide by all requirements of this construction phase plan and any risk assessments carried out for work to be carried out on their contract.

Shall ensure that contractors, and other personnel working on site, carry out their works in such a way that does not create for themselves or any other person, risk to health and safety so far as is reasonably practical.

May exclude from site any person who does not comply with any of the above requirements.

Shall ensure that suitable head protection to EN397:2012 is worn at all times during the construction work unless there is no risk of injury to the head from falling objects or hitting the head against something.

When work is undertaken by Westfields employees or Westfields appointed agency labour shall undertake a suitable and sufficient assessment of the health and safety risks involved in the activity, identify all controls required to control the risk and produce suitable written RAMS for the activities being undertaken.

Before any operation starts on site, will review all RAMS with the work supervisor to confirm that they both they and the supervisor understand the risks and controls and are satisfied that the RAMS identify and address the risks presented by the current site conditions

Shall set an example by always wearing the correct PPE;

Shall enforce the use of PPE where its use is required by law, this policy or its use is necessary to control a risk.

Shall ensure that all contractors working under the company's control provide and use personal protective equipment wherever it is required by law, a Director, this policy or its use indicated in statutory assessments;

Shall ensure that suitable hearing protection is worn by all personnel working for the company whenever there is a risk that they may be exposed to noise level at or above 85 dB(A),$L_{EP,d}$ or the 140 dB, peak action level;

Shall undertake site health and safety inspections on a weekly basis using form Form C040 Site Inspection Form. The current inspect report must be displayed in the SHE report section of the site notice board.

Shall ensure that there are adequate welfare and first aid facilities on site and that:

- all employees know the whereabouts of the facilities.
- the facilities are maintained, cleaned regularly and kept stocked as required.

Shall ensure that adequate supervision is available at all times, particularly where young and inexperienced workers are concerned.

Shall ensure that work areas are maintained in a safe and tidy condition.

Shall provide to all personnel who work on or visit their site with such information, instruction and training as is necessary to make them aware of any significant hazards, risk control measures, safe systems of work and the site health and safety rules (a site induction).

Shall ensure that relevant details of all accidents that occur on their project or that involve company employees/sub-contractors working under their control are reported as soon as it is safe to do so to a in accordance with the companies accident reporting procedures.

Shall ensure that any necessary remedial action identified by the company's Health and Safety Advisor during a formal safety inspection is implemented within the agreed timescale and when this is not reasonably practicable a revised completion date is agreed with and approved by the Project Manager.

Shall appoint a competent person with sufficient training to oversee current site operations to deputise for them when they are unable to be on site, shall ensure that deputy is aware of all site specific rules and method statements for the safe working of all trades and shall complete and post Form C011 Nominated Supervisor In Charge to confirm their appointment and duties.

4.3. The Temporary Work Coordinator

The Temporary Works Coordinator shall:

- co-ordinate all temporary works activities;
- ensure a temporary works register using Form C052 Temporary Works Register is established and

maintained;

- ensure that the various responsibilities for temporary works have been allocated and accepted;
- ensure on all temporary works that a design brief is prepared with full consultation, is adequate and is in accordance with the actual situation on site;
- ensure that any residual risks, identified at the design stage, assumed methods of construction, or loading constraints identified by the designer of the permanent works are included within the temporary works design brief;
- ensure that a satisfactory temporary works design is carried out
- ensure that a design check is carried out, where required, on temporary works by someone who was not involved in the original design; this should include:
    - concept;
    - structural adequacy;
    - compliance with the brief;
- where appropriate, ensure that the temporary works design is made available to other interested parties e.g. the Principal Designer or the designer of the permanent works;
- register or record the drawings calculations and other relevant documents relating to the final design
- ensure that those responsible for on-site supervision receive full details of the temporary works design, including, including any limitations and guidance notes associated with it and prepare a specific method statement

4.4. The Electrical Installation Coordinator

Shall ensure:

- Coordinate all permanent and temporary electrical installations and be main point of contact for commissioning
- Electrical supply installations, both temporary and permanent, are installed in accordance with the latest edition of BS 7671: Requirements for electrical installations and the Electricity at Work Regulations 1989;
- Temporary low voltage (110V) supply installations are installed in accordance with the Electrical Safety Council's Guidance on the management of electrical safety and safe isolation procedures for low voltage installations [http://www.electricalsafetyfirst.org.uk/mediafile/100370766/Best-Practice-Guide-2-Issue-3-.pdf];
- all electrical work is undertaken by a skilled electrician as defined in BS 7671: Requirements for electrical installations;
- Temporary electrical distribution installations and equipment are tested before use in accordance with BS 7671 "Requirements for Electrical Installations. IET Wiring Regulations" and a copy of the test certificate maintained in the site office;
- Installations (especially of a temporary nature) are inspected regularly and tested at intervals not greater than every three months, or when they have been altered and the results recorded in the register kept for the purpose;
- Electric cabling (especially of a temporary nature) is protected against damage from construction site activities in its vicinity;

4.5. The Appointed Person (Tower Cranes)

The Appointed Person (Tower Cranes) is in overall control of the lifting operations and the members of the lifting team. Their duties include ensuring:

- that lifting operations involving tower cranes are properly planned and carried out;
- a suitable and sufficient risk assessment is carried out to evaluate the hazards associated with the lifting operation and identify control measures;
- planning is recorded in a lift plan which is effectively communicated to all members of the lifting team;
- accurate weights, radii, heights, etc. are established;
- suitable tower cranes, lifting accessories and other equipment are selected ;
- suitable access is provided to unload and store materials within the operating area of the tower crane;
- competent, properly trained personnel are provided and that they are fully briefed;
- all tower cranes, lifting accessories and other equipment are properly maintained, inspected, examined and tested (when necessary);
- appropriate steps are taken to exclude persons not directly involved with the lift from the lifting zone using barricades etc.

4.6. Company Employees

- Shall take reasonable care of their own health and safety whilst at work.
- Shall work in such a manner so as not to put at risk any person who is likely to be affected by their works.
- Shall not interfere or misuse anything provided in the interest of Health Safety and Welfare.
- Shall watch out for warning and hazard notices, and obey hazard warning given.
- Shall not attempt to operate plant and machinery unless trained and authorised to do so.
- Shall not interfere with ladders, alter scaffolding, or move boards unless trained properly authorised to do so.
- Shall not throw anything from scaffolding or any height.
- Shall assist in keeping the site tidy and safe.
- Shall observe all site safety rules, and act on all reasonable instructions given by the Project Manager and the Site Manager on matters of health and safety. Refusal to comply with a reasonable instruction will result in immediate expulsion from site. A second breach of any company safety rule may result in instant dismissal.
- Shall wear or use personal protective equipment where ever it is required by law, the company, the Site Manager, this construction phase plan or its use indicated in a risk assessments.
- Will report all accidents and damage to the Site Manager, whether persons are injured or not.
- Will immediately report any defects in protective equipment issued to the Site Manager.

4.7. All other persons legitimately on the Company premises

Shall observe the company safety rules and the instructions given by persons implementing this construction phase plan.

Shall not work on the premises until the relevant safety rules are read, understood and accepted.

Shall not work on the premises until covered by insurance against risk.

Shall observe the Company rules and regulations for contractors.

5. MANAGEMENT OF WORK

5.1. Health and safety goals for the project

The project team should establish that this project will:

- provide the agreed solution which fully matches the client's needs. Where possible be proactive in looking at alternatives that better match or enhance the client's needs;
- is robustly costed, affordable and has been designed to an acceptable quality standard for the benefit of those who will use the facilities provides;
- will meet all statutory requirements and as far as possible relevant non-mandatory standards;
- set health and safety standards which avoid and where this is not reasonably practicable minimise, through comprehensive risk assessment, risks for the client and their staff, constructors, others who may be affected by the works and end users.

5.2. Monitoring and review

Plan review and revision

The Site Manager shall ensure that this plan and all other ancillary plans is:

- reviewed monthly of following any incident or other situation where its effectiveness is call into question.
- updated when required.

The plan must be signed by the site to confirm this review and details of any changes referenced within the document history.

Ancillary plans which will created will include the following and will provide adequate details for constructing the project

- Construction Phase Plan
- Project Execuion Plan
- Fire Plan
- Electrical Management Plan
- Quality Plan
- Logistics Plan
- Lifting Strategy
- Temporary Works Strategy
- Working at Height Plan
- Environmental Plan
- Community Engagement Plan

Site audit / Inspections

The site will be audited / inspected by the following persons who will produce a report detailing their findings using form C040 Site Inspection Form.

Person	Regularity
Project Director	Monthly
Project Manager	Weekly
Site Manager	Weekly
H&S Advisor	Monthly

A copy of the report will be sent to the Site Manager for action with a copy sent to the Project Manager.

The Site Manager shall ensure that all items are remedied by the dates detailed on the report and no later than the date for the next site audit.

The current actioned audit report must be printed and stored in Site H&S File.

Site meetings

Compliance with this document will be discussed at the monthly site meetings. The Project Manager shall ensure all remedial action or recommendations discussed at these meetings are actioned where additional resources or a corporate decision is required.

The meeting matrix details the frequency, attendees and basic agenda for all meetings that will are required to effectively manage this project

The Project Manager is responsible for monitoring the procedures laid down in the company's health and safety policy and procedures and this construction phase plan, and is responsible for ensuring that breaches where relevant are reported to the Site Manager for action.

5.3. Liaison

Communication and liaison with the design team on this project is facilitated by a combination of:

- regular meetings with all parties including client progress meetings, design team meetings and monthly subcontractor meetings and,
- distribution of minutes.

The Site Manager is responsible for managing communication and liaison between on site and interfacing with the client and design team. The overriding principle guiding all parties to the process is their agreement to work together in a co-operative and collaborative manner to achieve the overriding objective acting in good faith and in the spirit of mutual trust and respect.

5.4. Consultation with the workforce

The company shall consult with the workforce by:

- involving workers in carrying out site-specific risk assessments;
- alerting the workforce to developments on site by the use of a site safety notice board;
- briefing sub-contractors regularly on the work programme;
- requiring regular briefings by front line supervisors to workers on the work programme and day-to-day risks on site;
- ensuring that issues raised are dealt with and feedback is provided to the workforce.

Forum	Requirement
Site Induction	All site personnel are required to attend the project operatives' health and safety induction course prior to accessing the site. Site security access control system rights are issued only on completion of the course.
Visitor Induction	All visitors to site are required to attend the basic site induction providing them with information regarding key risks and control measures on site at that time. All visitors will also be escorted by a fully inducted member of the site team, unless they attend the full site induction.
Supplier Induction	All suppliers are required to undertake their own thorough inductions on every project. The Contractors are also required to conduct health and safety method statement briefing meetings with their employees prior to commencing work on site, as well as daily (or nightly) task / activity briefings.
RAMS Briefings	Suppliers' shall undertake RAMS briefings to their workforce and any others affected by the work, these shall be recorded. Briefings will take place prior to commencement of the task and shall include an explanation of risks, agreed methods and precautions. Suppliers will undertake re-briefing following any changes to the work in hand, or for ongoing works at regular intervals defined within their RAMS
Safety Toolbox Talk Training	Weekly by the contractors' managers or health and safety managers Safety toolbox talks must be on a relevant H&S topic associated with the current or planned imminent works. Toolbox talks may further be instructed at any time to cover learning points from incidents.
Environmental Toolbox talks	Delivered on a monthly basis by suppliers on relevant environmental issues to raise awareness. When undertaken, attendance records are to be uploaded to Mace bespoke monitoring system to demonstrate good practice.
Quality Toolbox Talks	Undertaken by the suppliers' managers / suppliers or Mace Package Managers. Must be on a relevant topic associated with the current or planned imminent works. Toolbox talks may further be instructed at any time to cover learning points from issues identified through quality inspections
Daily Activity Briefings	DAB's undertaken daily by the contractors' supervisors prior to commencing shift. To communicate requirements regarding high risk activities impacting on planned activities and any key issues / lessons learnt from previous shifts. May also undertake NAB's for night shift working.
Worker consultation	List here any consultation meetings, project communication sessions, etc. aimed at consultation with the workforce: Operative Consultation – monthly Black Hat supervisors – monthly H&S Committee meetings – Monthly

	Project Stand Down (includes any wellbeing or H & S initiatives - Monthly

5.5. Exchange of design information

The company shall liaise with the Principal Designer on design carried out during the construction phase, including design by specialist contractors, and its implications for this construction phase plan.

The company shall invited the Principal Designer to all design team meetings with specialist contractors and provided them with copies of design information and other relevant communications between designers.

5.6. Handling design changes

The company recognises that with the ongoing development of new and improved designs and methods of working, changes are inevitable. Therefore, there will be a continuous need to amend and reissue safety documentation. These changes will be managed by the Site Manager who will ensure that all safety related information passed on by designers is communicated to all designers enabling them to take account of the overall scope of the works. The Site Manager will formally transmit all information and any resulting revisions.

The Principal Designers point of contact for the project on all matters pertaining to health and safety is the Site Manager who will ensure all such information is disseminated to the appropriate recipients. Equally relevant information with regards to the CDM Regulations will be formally transmitted to the Principal Designer.

No contractor shall be permitted to work for Westfields until the person placing the contract has satisfied themselves that the contractor has provided suitable documentary evidence that they have the skills, knowledge and experience, and, if they are an organisation, the organisational capability, necessary to fulfil the role that they are appointed to undertake, in a manner that secures the health and safety of any person affected by the project.

Competency assessments of organisations should be carried out as a two stage process:

Stage 1: An assessment of the company's organisation and arrangements for health and safety to determine whether these are sufficient to enable them to carry out the work safely and without risk to health.

Stage 2: An assessment of the company's experience and track record to establish that it is capable of doing the work; it recognises its limitations and how these should be overcome and it appreciates the risks from doing the work and how these should be tackled.

Stage 1 Assessments shall be made against the set of 'core criteria' have been agreed by industry and HSE and set out in PAS 91 Core Question Module C4 Health and safety policy and capability.

Surveyors shall ensure that contractors have been confirmed as competent before they are asked to tender.

Project Managers are responsible for reviewing contractors competence submission. They shall ensure that contractors are not appointed until the contractor has provided satisfactory evidence of their skills, knowledge and experience, and, if they are an organisation, the organisational capability.

Westfields will accept accreditation by any organisation within the SSIP Forum (www.ssip.org.uk) [CHAS, Safecontractor, etc.] as evidence of a contractors Stage 1 competence. Where there is any doubt about the contractors competence the matter may be referred to the Westfields Health & Safety Advisors.

Contractors that have not been use before by the company or who have not been used for a significant period of time shall prior to appointment be invited to a Pre Tender Interview. Interviews will be held with, so far as is reasonably practicable, both the surveyor and the Project Manager in attendance. Contractors will be asked to provide references to verify both their competent and their health and safety record. The purpose of the interview will be to verify that the contractor is competent to undertake the work that are contracted to execute on behalf of the company and will manage the risks associated with their work effectively.

Contractors shall only be appointed once both the surveyor and the Project Manager are satisfied that a contractor is competent to undertake the work and has made adequate provision to manage health and safety.

5.7. Exchange of health and safety information

Westfields sees the requirement to inform all contractors and any self employed persons on site as to the hazards associated with the operations involved, or the working environment, as a requisite to ensuring a safe place of work.

Relevant health and safety information contained in this construction phase plans will form part of contractual documentation. The communication of health and safety information is coordinated by the Project Surveyor and shall be passed to all relevant parties at pre-contract meetings and site meetings.

Any significant changes in any circumstances will be communicated to all affected contractors at a formal meeting or by toolbox training sessions, carried out on site by Site Manager and where it is thought necessary, by letter from the Project Manager to the contractor's management.

5.8. Site security

The Site Manager shall take reasonable steps to prevent access by unauthorised persons to the construction site. Only people who are explicitly authorised, individually or collectively, by the Site Manager are allowed access.

The site will be secured by the following means but further details can be found in the logistics plan

- Solid 2.4m high timber hoarding to the entire perimeter of the site excluding Angel Meadows side which will secured by Heras fence with debris netting
- Mesh gates at 2.4m to all vehicular entrances
- Padlocked personnel doors
- Security guard stationed at the main site entrance during site working hours
- Biometric turnstiles at the main site entrance which is linked to the induction system and the personnel logging system
- CCTV cameras monitored 24/7 with sensors to alert of persons having broken into the property. There will be sounders on the CCTV system enabling the external camera operative to communicate with the intruder and also to call a designated person from Westfields and the Police
- All site personnel and will have to be registered through an online logging system and will be recorded as entering or leaving the site through the biometric turnstile system
- All visitors are to report directly to site security and sign a logging in book upon entering and exiting the site. Visitors must be escorted around the site at all times. T.

5.9. Site induction

The Site Manager shall ensure that authorised people are not allowed access until they have relevant site rules explained to them and undertake any necessary site induction.

The Site Manager shall:

- develop a project specific site induction presentation using the Template C033 Site Induction Presentation;
- ensure that all personnel working on site and all visitors that will not be escorted by a member of the Westfields Site receive site induction using the project site induction presentation;
- ensure upon completion of the site induction that the Inductee shall complete the online induction form providing details of their CSCS Card number, where they have a CSCS card, and where relevant PASMA, IPAF, CPCS or CIRS Card Number.

Upon completion of the induction they will have their finger print taken for access to site which will also confirm that they have:

- been have delivered the site induction;
- explained the site rules;
- checked and taken a copy of any relevant competence cards; and
- have not been made aware verbally or on the form of any reason why they cannot safely undertake the work they have been employed to do.

Completed Induction Records will be stored in Site H&S File, in the folder or section of the contractor responsible for the person who has been inducted.

5.10. Toolbox Talks

The site manager shall:

- ensure that all contractors undertake at least two 'toolbox talks' (a short presentation to the workforce on a single aspect of health and safety) each month;
- identify the subject for the tool box talks each month and enter the details onto Westfields Form C032 Toolbox Talk Record and provide a copy to each contractor who must deliver the tool box talk;
- collect and store all toolbox talk records in Site H&S File, in the folder or section of the contractor responsible for the operative who have received the toolbox talk;
- instruct additional toolbox talks following any significant breach of site rules or safety arrangements and as often is necessary to make site operatives aware of any significant or unusual risks present on site.

Tool box talks shall be delivered using the CITB's Toolbox Talks (GT 700) or other equivalent and suitable formats.

5.11. Welfare facilities

Welfare facilities all in accordance with the requirements of Schedule 2 of the Construction (Design and Management) Regulations 2015 shall be provided and maintained. Further details can be found in the Logistics Plan

The welfare facility will be located within the Charter St Mission building opposite the site on Little Nelson St.

Welfare shall include:

- A toilet block with drying facilities and hot and cold running water

- A mess room with an area to prepare meals and drinks and an onsite catering service;
- A site office with meeting room area.
- Showers
- A suitable safe place to store bikes

The Project Manager shall ensure that:

- all personnel under their control have reasonable access to appropriate welfare facilities;
- all welfare facilities are maintained, cleaned regularly and kept stocked with soap, towels etc.

5.12. First aiders

The Site Manager shall ensure that there is adequate first aid cover on site at all times and shall ensure that the names of all first aiders are listed on the site notice board and communicated to all operatives at site induction.

	Numbers on site	**First aiders**
☐	5-50	At least two first-aiders trained in First Aid at Work [FAW]
■	More than 50	At least one first-aider trained in FAW for every 50 people employed (or part of 50)

The numbers of first aiders required on this site is 6 at peak personnel of the project

The site manager shall ensure that details of all other first aiders on site are recorded in the relevant section of the site information board displayed in the site accommodation.

Mobile numbers of all first aiders will be recorded so that they can be contacted in an emergency.

Copies of the certificates for all first aiders with be maintained in the Site H&S File and details recorded on the Site Health and Safety Training Matrix.

5.13. First aid facilities

A first aid box of the appropriate size and an eye wash station are located the site managers office.

	Numbers on site	**Size of First Aid Kit**
☐	Less than 25	1 Small Kit plus eye wash station
☐	25 to 100	1 Medium Kit plus eye wash station
■	More than 100	1 Large Kit per 100 operatives on site

Eye wash stations should contain at least:

- 10 x 20ml Eye Wash Pods containing 0.9% Saline solution for eye irrigation;
- 2 x Sterile Eye Dressings; and
- A mirror

If mains tap water is not readily available for eye irrigation, the eye wash station should contain:

- at least one litre of sterile water in the form of 2 x 500ml Eye Wash Bottles containing 0.9% Saline solution should be provided;
- 2 x Sterile Eye Dressings; and

- A mirror

Once the seal is broken on an Eye Wash Bottles has been broken the remaining contents and the bottle shall be disposed of. Eye Wash Bottles that are beyond their expiry date shall also be disposed of.

The Site Manager is responsible for ensuring that first aid kits and eye wash stations are kept fully stocked.

Records

Copies of all risk assessments, written systems of work and associated review will be will be stored in Site H&S File - Section 6, in the folder or section of the contractor responsible for the person who has been inducted.

5.14. Site rules

The Site Manager shall:

- develop a project specific site rules;
- ensure that the site rules are displayed in the mess room, induction room and site office;

ensure that the site rules are communicated as part of the site induction to all personnel working on site and all visitors that will not be escorted by a member of the Westfields site management team.

5.15. Logistics

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

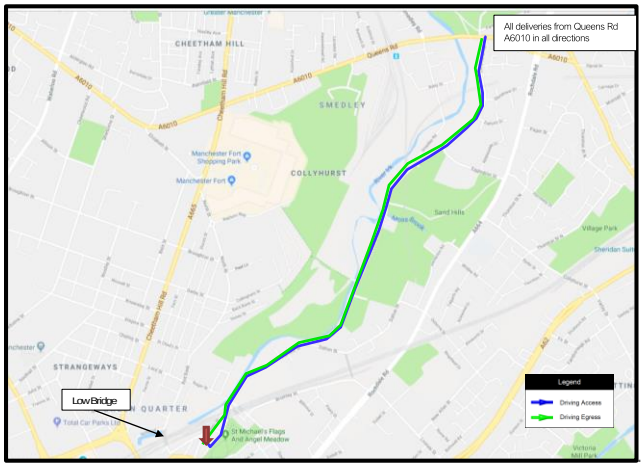


FIGURE 1 – HGV SITE ACCESS FROM ALL DIRECTIONS



FIGURE 1 - HGV DETAILED SITE ACCESS

5.16. 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

5.17. 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

5.18. 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

5.19. 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 1 - TYPICAL SPILL KIT

5.20. 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.

6. FIRE RISK ASSESSMENT

6.1. Introduction

Both the Regulatory Reform (Fire Safety) Order 2005 (FSO) and the Construction (Design and Management) Regulations 2015 (CDM2015) place duties on duty holders in relation to fire safety.

This section of the construction phase plan includes both an assessment of the fire risks and the general fire precautions that will or have been put in place to ensure, so far as is reasonably practicable, the safety of anybody who may be affected by the project during its construction phase.

6.2. Responsible Person

Westfields CZ as Principal Contractor for this project is the responsible person.

Westfields CZ shall:

- carry out, and keep up to date, a risk assessment and implement appropriate measures to minimise the risk to life and property from fire.
- take such general fire precautions as will ensure, so far as is reasonably practicable, the safety of his employees and, in relation to persons who are not in his employees, take such general fire precautions as may reasonably be required in the circumstances.

General fire precautions will include that:

- all procedures, precautionary measures and safety standards as laid down this site fire safety plan are clearly understood and complied with by all those on the project site(s);
- where necessary, the hot work permit system described in this plan will be used and compliance monitored;
- weekly testing of the fire alarm is carried out;
- where installed smoke and heat detectors on site are tested as determined by a risk assessment;
- weekly inspections are conducted of escape routes, fire and rescue service access, firefighting facilities, temporary emergency lighting, the routing of temporary electrical cables and work areas;
- Every 6 months a full evacuation fire drill will be conducted and monitored. Any findings are to be recorded and actions developed to improve fire safety
- the requirements laid down in this site fire safety plan are monitored;
- liaison is maintained with the local fire and rescue service and they are invited to undertake site inspections and familiarisation tours;
- liaison is maintained with site security personnel where they are employed;
- a proper maintenance regime for fire protection equipment is instigated, including the keeping of a written record of all checks, inspections and tests;
- a written record of fire safety training of site operatives and of all fire patrols and fire drill procedures is maintained;
- the detailed arrangements and actual procedures for calling the fire and rescue service are regularly monitored and checked.
- during an alarm, those duties required for the safe evacuation of the site are executed, and all staff and visitors report to the assembly points;
- a fire safe working culture is proactively promoted at all times; and
- one or more competent persons are appointed to assist the responsible person

6.3. Fire safety standards

The following fire safety standards apply to this project and have been taken into account when undertaking the risk assessment and preparing this plan.

Standard	Application	Applicable
HSG 168 Fire Safety in Construction	All projects	☒
The Joint Code of Practice on the Protection from Fire of Construction Sites and Building Undergoing Renovation 9th edition: October 2015 published by the Construction Confederation and the Fire Protection Association	Projects of £2.5m and above and where it is required by the clients or companies insurers	☒
Structural Timber Association (2011) 16 Steps to Fire Safety	Timber frame projects	☐
Structural Timber Association (2012) Design guide to separation distances during construction for timber frame buildings above 600m2 total floor area together with supporting documents	Timber frame buildings above 600m2 total floor area	☐

6.4. Fire risk assessment

The risk assessment below identifies all sources of fuel and ignition and establishes general fire precautions including, means of escape, warning and fighting fire.

When assessing risk the assessor shall follow the guidance set out in Part 1 of HSG168 Fire Safety in Construction (http://www.hse.gov.uk/pubns/priced/hsg168.pdf) Pages 8 to 17 and where appropriate The Joint Code of Practice on the Protection from Fire of Construction Sites and Building Undergoing Renovation 9th edition: October 2015 published by the Construction Confederation and the Fire Protection Association

6.5. Proximity to neighbouring properties

The property is situated within its own plot and there are no direct neighbouring properties. There is a school on the opposite side of Mincing St and a student accommodation on the opposite side of Dantzic St. Neither of these properties are in such proximity to require additional fire safety measures.

6.6. Is the site / structure deemed HIGH RISK?

Tick those applicable. (to tick box – double click on box and set default value to checked) A HIGH RISK site is defined as:

☒ **Site is high rise** (workforce is working outside a distance at which mechanical rescue is possible - currently 30m from position from of siting a fire appliance.)

☒ **A large project** (original value is £20 million or above)

☐ **A large timber frame structure** (timber frame of 3 storey or more)

☐ Project where there is a significant potential for loss of life or property

[The Fire Risk Assessment for a HIGH RISK project must be carried out by a fire engineer with suitable experience of the type of construction.]

6.7. Persons at Risk

Tick where at risk & provide maximum numbers present (to tick box – double click on box and set default value to checked)

	Site personnel	Numbers present
☒	Operatives	240
☒	Visitors	10
☒	Tower crane operators	3
☐	Lone workers	0
Immediate neighbours		
☐	Staff	
☐	Visitors	
☐	Persons with limited or no mobility	
☐	Persons with other disability	

6.8. Sources of ignition

- ☒ smokers' material, eg cigarettes, matches and lighters
- ☐ naked flames, eg gas- or liquid-fuelled open-flame equipment
- ☒ those deliberately introduced (arson)
- ☐ bonfires
- ☒ plant and equipment, eg fuel and vehicle exhausts
- ☒ electrical – faulty or misused electrical equipment;
- ☒ poor electrical installations, eg overloads, heating from bunched cables and/or damaged cable
- ☒ hot processes/hot work, eg welding by contractors
- ☒ light fittings and lighting equipment, eg temporary lighting, halogen lamps too close to stored products
- ☐ electrical, gas- or oil-fired heaters, room heaters in temporary office accommodation or welfare cabins
- ☒ heat sources, such as gas, electric, cooking equipment, microwaves
- ☐ friction-generated heat from mechanical equipment such as disc cutters
- ☐ static charge from mechanical equipment
- ☒ use of oxy-fuel equipment
- ☒ lightning and refracted sunlight

6.9. Sources of fuel

- ☒ components of the structure itself such as some composite panels and timber
- ☒ stored/in-use building products such as composite panels and timber
- ☒ rubbish
- ☒ flammable liquids such as paints and varnishes
- ☐ protective coverings
- ☐ scaffold sheeting
- ☒ volatile flammable substances such as paints, thinners
- ☐ fuel for portable equipment
- ☒ liquefied petroleum gas (LPG), eg bitumen boilers, temporary site accommodation and similar areas
- ☒ acetylene

- ☒ packaging materials
- ☒ petrol disc cutters and other portable equipment
- ☐ fall-arrest bags

6.10. Sources of oxygen

- ☒ Air / atmosphere
- ☐ 02 enriched atmospheres
- ☒ Oxygen cylinders
- ☐ oxygen used in welding processes
- ☐ oxidising agents

6.11. Remove or reduce sources of ignition

Arson

There is a risk of arson however the risk is not believed to be significant.

The site is fully locked down and secure over night to minimise the risk of breaking and entering.

Where the building envelope forms the site perimeter, all accessible openings such as ground floor windows and doors and vulnerable higher level windows shall be secured against unauthorised entry. This may be achieved through the early installation of doors and windows or temporarily boarding such apertures with 18mm plywood or proprietary steel shuttering. Doors and windows shall be fitted with locks, and secured when the building is vacant. Access to upper levels via scaffolding shall be prevented.

Contracted security guards shall be licenced under the Private Security Industry Act 2001.

Smoking

Smoking is not permitted on site.

Where a smoking shelter is provided it shall be:

- included specifically in this project fire risk assessment;
- constructed of non-combustible materials;
- situated as far as reasonably practical from any building or structure, but at least 20m on a high fire risk site, where possible;
- provided with suitable metal ashtrays and a separate metal waste bin with a fitted metal lid; and
- provided with a suitable fire extinguisher.

Hot Work

All hot processes and hot work shall be strictly controlled by a permit-to-work.

Hot work permits shall be issued by the Site Manager

The following information shall be recorded on the permit to work:

- the location and nature of the hot work intended;
- the proposed time and duration of the work;
- the limits of time for which the permit is valid; and
- the person in direct control of the work.

Precautions to be taken and reflected in the PTW before, during and after the work include:

- clearing the surrounding area of all loose combustible material;
- checking for combustible material on both sides of a wall or partition, where work takes place only on one side;
- having suitable extinguishers at hand and a careful watch maintained for fire during the work and following completion;
- protecting combustible material which cannot be cleared;
- examining the hot work area thoroughly for some time after the work has finished (this will be for at least 1 hour, but ignition can sometimes occur much later than this – inform the night security guards where hot work has been going on and ask them to check these areas); and

In view of the potential risk, it is a sensible precaution for all hot work to stop by a safe period before the end of the day.

[Further information and legal obligations on Systems of Work and Permits-to-Work are detailed in DSEAR ACOP L137 and HSE leaflet INDG98 Permit-to-work systems]

Site burning of vegetation or rubbish

The burning of any vegetation or rubbish on site is prohibited.

Electricity

Electrical supply installations, both temporary and permanent, shall be installed in accordance with the latest edition of BS 7671: Requirements for electrical installations and the Electricity at Work Regulations 1989

All electrical work should be undertaken by a skilled electrician as defined in BS 7671: Requirements for electrical installations.

Installations (especially of a temporary nature) shall be inspected regularly and tested at intervals not greater than every three months, or when they have been altered. The results shall be recorded in a register kept for the purpose.

Electric cabling (especially of a temporary nature) should be protected against damage from construction site activities in its vicinity.

Temporary lighting

Where portable or temporary lights are required, these shall be located well away from combustible materials.

Low voltage festoon lighting shall be used where ever practicable. Where this cannot be used, sealed fluorescent light tubes shall be used.

Unprotected quartz halogen lights shall not be used on site.

Where possible, main switches - other than those controlling fire protection, security and life safety systems - should be turned off when work ceases, and all equipment unplugged when not in use.

Photovoltaic panels

Photovoltaic panels shall be installed in accordance with the manufacturer's instructions.

Where photovoltaic panels are being installed, signs must be displayed at the earliest opportunity to warn site staff and firefighters of the presence of live DC power supplies and the location of the isolators.

Following their installation, photovoltaic panels shall be isolated and not be used to produce power for site use during the construction phase.

Gas supplies

All permanent gas supplies must be installed by a registered Gassafe gas installer.

Gas supply to appliances should be by fixed piping or armoured flexible tubing. Gas cylinders should be located outside buildings, secured and protected from unauthorised interference. Gas appliances should be fitted with control taps.

LPG connected to an appliance by a flexible link should only be installed by a competent person

Plant and vehicles

Stationary plant powered by internal combustion engines, such as compressors and generators, shall be positioned in the open air or in a well-ventilated non-combustible enclosure. They shall be sited so that exhaust pipes and exhaust gases are kept clear of combustible materials and shall, wherever reasonably practicable, be separated from working areas and other buildings.

Where plant and vehicles are refuelled on site:

- fuel tanks must not be filled whilst engines are running or hot;
- vehicles should only be fuelled in designated areas; and
- fuel should be stored in accordance with the standards set out in this plan.

The long-term parking of vehicles within 10m of the building under construction shall be avoided. When equipment and materials are being unloaded from or reloaded onto contractors' and sub-contractors' vehicles, such vehicles may be permitted to park on site within 10m of the building for no longer than the duration of unloading or reloading.

Under no circumstances shall long-term parking be permitted within the building without a suitable and sufficient fire risk assessment being undertaken.

6.12. Remove or reduce sources of fuel

Stored Materials

Where it is reasonably practicable to do so, combustible materials shall be stored outside the building under construction or undergoing refurbishment, and shall not be so close to it that fire is able to spread from the materials to the building.

Where combustible materials are stored inside the building, the area used for storage shall:

Site Storage of Flammable Liquids and LPG

Flammable liquids and gases used and stored on site shall be subject to a periodic assessment in compliance with the Dangerous Substances and Explosive Atmospheres Regulations 2002.

Containers of flammable liquids and LPG cylinders shall preferably be stored in open compounds which are securely fenced, shaded from the sun and remote from pits, drains and low lying areas.

Stores of liquid fuels must be surrounded by an imperforate bund sufficient to contain the maximum contents of the largest drum stored, plus 10 percent. The bund must not be allowed to accumulate water or waste material.

Flammable liquids and LPG shall not be stored together.

Storage areas should be sited as far as reasonably practical from permanent and temporary buildings. Where practical, given the constraints of the site, containers and drums of flammable liquid or gas cylinders must not be stored within 10m of any building or boundary fence (and in no circumstance closer than 4m) unless the boundary is a wall at least 2m high and constructed to provide a minimum of 30 minutes fire resistance. In the latter case, containers and drums should be at least 1m below the top of the wall.

Products which could add to the intensity of a fire, such as acetylene or oxygen, shall not be stored in the same compound as flammable liquids and LPG.

Appropriately worded warning signs, eg 'HIGHLY FLAMMABLE LIQUIDS', 'NO SMOKING' and 'NO NAKED LIGHTS' shall be displayed prominently at the entrances to stores.

The floors of flammable liquid or LPG cylinder stores should be paved or compacted level, with a suitable hard-standing provided for the delivery and dispatch of cylinders. The area must be kept clear of all combustible materials, weeds and rubbish.

Adequate numbers of extinguishers appropriate to the hazard shall be sited at entrances to storage areas.

There should, where possible, be designated areas for fuelling plant and vehicles. The use of petrol generators in high risk structures shall be avoided.

Acetylene

The use of acetylene on construction sites should be eliminated wherever reasonably practicable and alternative methods of cutting and welding be adopted.

Where the use of acetylene is unavoidable, the number of spare cylinders stored on site should be kept to the absolute minimum.

Acetylene cylinders should be removed from the workplace and returned to the storage area as soon as the period of work has been completed.

Acetylene cylinders should be removed from the site as soon as their use is complete.

Waste management

All non-essential combustible wrapping and packaging shall be removed to a safe place away from the working area and be disposed of at the earliest opportunity, and in any case not less than once per day.

Separate metal bins, with close-fitting metal lids, shall be provided for combustible materials such as oily rags.

Where practicable, rubbish chutes shall be constructed outside the building and be of fire- resisting construction. They shall be situated so as not to obstruct escape routes.

Unwanted materials from open areas of a site shall be collected at regular intervals.

All recycling collection points and other combustible waste materials awaiting disposal shall be kept in an area as far as reasonably practical away from the building under construction, temporary buildings, smoking shelters, stores and equipment.

All dry vegetation must be cleared regularly.

Temporary Protective Covering Materials

Finished surfaces, fittings or expensive items of plant and machinery incorporated into a building should be temporarily protected during construction or refurbishment. When selecting a temporary protective covering material, regard must always be paid to the relative fire load and the potential for fire growth and spread.

Where flexible protective covering materials are used, these shall conform to the requirements of the LPCB's Loss Prevention Standard LPS 1207: Fire requirements for protective covering materials or equivalent standard.

When flexible materials are used to clad scaffolding, these materials shall conform to the requirements of LPS 1215: Flammability requirements and tests for LPCB approval of scaffolding materials or equivalent standard.

All protective materials shall be manufactured in accordance with a quality assurance and certification programme, and the scaffolding covering material shall be approved by a third-party certification body accredited by the United Kingdom Accreditation Service. The relevant approval mark shall be printed on the material.

Overprinting of materials with 'advertising or images does must not detrimentally affect their fire performance. Confirmation of this shall be sought through testing of the printed material by the certification body.

Flame retardant protective covering material can still burn; therefore at least one fire escape stairway should be kept free of all protective coverings.

7. OUTLINE CONSTRUCTION METHOD & WORKING SEQUENCE

7.1. General Sequence of Works

Sequence and programme of works are elaborated in the Outline Construction Programme of this tender submission. A brief of work sequence is simplified as follows:

Site Possession
Site Survey
Site Mobilisation
Hoarding Erection

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Piling Works
Sheet Pile Works
Excavation Works
Pile Cap Works
Tower Crane Installation
Basement Construction
Tower Construction

⇩

Curtain Wall Works
Cladding Works
Architectural Finishes Works
Mechanical & Electrical Installation Works
Utilities Connection
External Works

⇩

Statutory Inspection
System Final Adjustment, Testing & Commissioning
General Cleaning
Handover Inspection

7.2. General Works

Design and detailed method statement will be prepared and agreed prior to work commencement on site. The temporary works design must ensure the integrity and stability of adjacent structures and roads.

7.3. Piling Works (CFA Piles)

A 800mm thick piling mat will be formed on site which allows the free access of the rig and excavator whilst avoiding damage to the installed piles. Two 110T piling rigs and two 20T excavator will be set up on site to carry out the works.

As the pile design has used the geotechnical data provided at tender as a base, there is a possibility that the actual ground condition is at variance. After the first bored pile has been constructed, the design will be reviewed to ascertain the accuracy of the geotechnical data.

Should the piles designed to exceed the factor of safety of 2.5, on-site pile load tests will not be required. Integrity tests to piles will be carried out after concrete has reached 7 days' strength and the pile has been trimmed to expose the pile head.

7.4. Excavation and Lateral Support Works

Two sheet piling machines, one crawler crane and two excavators will be set up on site to carry out the sheet piling, excavation and lateral support work.

The maximum excavation level is 7.95m below ground level for basement area.

Excavation will be carried out by the use of excavators and excavated material will be disposed of off-site. During excavation, attention will be paid for unidentified services and UXO. The groundwater level has been identified below basement level. Localised dewatering measures will be put in place if necessary.

7.5. Pile Cap Works

Pile cap works will be constructed after the site has reached its excavated level.

The tower crane will be erected at this time. Temporary design will be approved by the structural engineer before work commences.

7.6. Basement Construction

Basement structure will be constructed after pile cap works. Particular attention will be paid to ensure water tightness of the basement structure.

Once the basement structure has been completed, backfilling and removal of ELS will be carried out in a safe and systematic manner.

7.7. Superstructure Construction

Tower typical floors are planned to be constructed with table formwork and falsework system. The detailed design of our proposed formwork and falsework system for each structural element will be submitted for review and approval prior to site execution.

Stationary concrete pump and vertical delivery pipe lines will be set up for placing of concrete to the required work fronts. The casting of concrete is planned to cover the wall, column, beam and slab in each pour. Typical floors are planned to be cast in 1 pour of maximum 260m^3 each. Transfer floor (L21) of Plot 2 is planned to be cast in 2 pours with approximate 170m^3 each. The tower typical floors are planned to be constructed in a 9-working day cycle.

For a typical bay, construction sequence will be :

- Setting out

- 1st fixing of formwork to wall and column
- Fixing of rebar to wall and column
- 2nd fixing to formwork to wall and column
- Erection of falsework for beam and slab
- Fixing of formwork to beam and slab
- Fixing of rebar to beam and slab
- Concrete cast to wall, column, beam and slab

Embeds or inserts for cladding, curtain wall and the like, concealed conduits and accessories of building services installation will be installed at the same pace to suit the progress of the RC structure. Scaffold with catch fan will be erected to enclose the building during construction stage as a protective measure against falling objects and serves as working platform for external wall finishing works. The scaffold will be sheeted to minimize dust egress from the site.

7.8. Bathroom pod installation

The precast bathroom pod will be fabricated according to approved drawings in factory and transported to site. The precast unit will be checked before installation. All temporary propping / supports will be fixed in position before the actual installation. The pod will be delivered to the designated position and will be installed to the permanent structure. Inspections with site resident staffs will be followed to ensure the works have been carried out properly.

~~7.1.~~7.9. Cladding

External wall cladding with be unitised and will follow on from bathroom pod installation. The hoists will be used to transport the unitised cladding panels up the building to the relevant floor, they will be extended to the outside of the building using specialist tables and lifted into position using spider cranes.Edge protection will be modified on each elevation basis to suit the installation of external wall cladding with provision of appropriate protection and fall arrest system to safeguard working at height. Water test will proceed and be signed off before dismantling external scaffolding. Removal of edge protection will then be progressed to meet the target statutory inspection schedule.

7.10. Prototype Apartment

One no. apartment will be fully fitted out as prototype benchmark apartment. The apartment will be completed with all finishes, furniture, fittings and equipment, sanitary appliances and mechanical and electrical services.

7.11. Internal Fitout

Fit out works will only start when the floor is water tight and an dry condition has been achieved on each floor. The prototype apartment as specified will be well coordinated, planned ahead and completed in line with the programme. Protection of works will be implemented immediately after each finishing trade is completed. The stud walls will be formed of metal frame and then insulated and covered with plasterboard. Once M&E first fix has been conducted as detailed below then the ceiling can be installed. Tape and jointing can then be conducted followed on by the finishes such as flooring, carpets, painting, kitchen install etc.

7.12. Mechanical & Electrical Services Installation

Mechanical and electrical services subcontractswill be awarded immediately after the award of the main contract so that the combined services installation routes can be immediately coordinated and identified. This will ensure efective coordinated builder's works for construction of the building structure.

Materials and equipment will be submitted for approval according to requirements of the master programme, with due consideration of their lead time required for approval and procurement. There will be substantial amount of bulky equipment to be delivered into the building e.g. lifts, generator set, transformer, switch boards, pumps, etc., with limited access and restricted site logistics. Therefore, special attention and concerted effort is required to co-ordinate and agree the feasible delivery / hoisting routes. Provision will be made for any temporary openings required to the R.C. structure and/or temporary left-out panels to the external facade to facilitate future delivery.

Detailed sub programming exercises will be completed to efectively manage key M&E installations critical for the timely completion of the project: eg

1. DNO Sub-station Room
2. Generator Room
3. Main Switch / Meter Room
4. Domestic Water Supply Room
5. LV Switch Room

1st fixing of M&E services will start as soon as the floor is available in advance of internal finishes. 2nd fixing will be carried out concurrently with internal finishes and fitting out work. Final fix will only be carried out when most internal finishes and fitting out work are completed. Finally, a time period of about 1 to 2 months will be provided for testing and commissioning based on the requirements of each individual system upon completion of the installation. Permanent power is expected to be available few months before the scheduled statutory inspections to provide sufficient power and time for testing and commissioning of lift and other M&E system installed.

7.13. Electrical & ELV Installation

A thorough understanding of the electrical distribution system and electrical power provisions allowed for other specialist sub-contractors including power rating, cable size, type and setting-out of electrical connection points is required.information shall be obtained from specialist sub-contractors/suppliers at early stage of project. Loading calculations for all the connected loads shall be coordinated and submitted for confirmation. A power requirement schedule will be compiled for the planning, coordination and monitoring of power supply provision for all services trades.

The electrical specialist sub-contractor will be responsible for providing cable containment with draw wires and outlets for the systems installed by other specialist sub-contractors, e.g. telephone system (FTNS). Coordination meetings among relevant specialist sub-contractors will be arranged at early stage of the project to ascertain the requirements including quantity, size and setting-out so as to facilitate the concealed cable containment installation.

For other ELV systems, location, and setting out of the equipment must be established at early stage of the project to facilitate the concealed cable containment installation.

For security CCTV system, location and setting out of the CCTV must be established at early stage of the project to facilitate the concealed cable containment installation.

Power Main :

- Plot 2 : Electricity supply to be obtained from new installation of 2 nos. 800kVA utility transformers at the DNO Sub-station located at Ground Floor. ENWL (Electricity North West Limited) Incoming HV Cable from Dantzic Street. Provision of 28 nos. 200mm dia. Cable ducts in accordance with ENWL's requirements from Dantzic Street will be made.
- Plot 3 : Electricity supply to be obtained from new installation of 1 no. 800kVA utility transformer at the DNO Sub-station located at Ground Floor. ENWL (Electricity North West Limited) Incoming HV Cable from Dantzic Street. Install cable ducts for ENWL's construction from Dantzic Street.

Major EE and ELV installation :

- Plot 2 : 500kVA emergency standby generator installation at G/F
- Plot 3 : 250kVA emergency standby generator installation at G/F



7.14. Fire Services Installation

The location of fire alarm flashing lights shall be coordinated with the architectural layout so that no visual obstruction is incurred during operation. The layout and direction of directional signs shall be fine-tuned based on the latest architectural layout and submitted to the Project Team for approval prior to installation. Coordination on the interface signals with other systems and equipment provided by other specialist sub-contractors shall be carried out. Fire Services Signal Interfacing Schedule would be compiled to manage the coordination process.

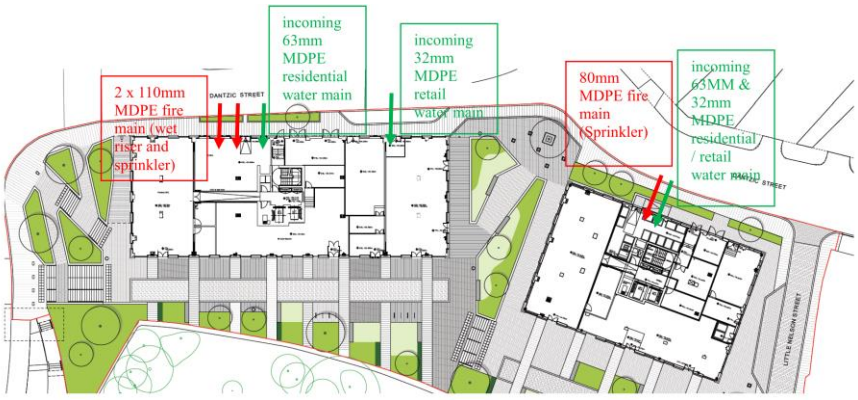
7.15. Plumbing and Drainage Installation

Coordination with relevant sub-contractors on the interface details especially the setting out of the water supply point and drainage point will be carried out at an early stage. Also, submission of the sanitary fittings shall be carried out at early stage in order to finalise the setting out of the sanitary fittings so as to facilitate the concealed pipe work.

Site inspection to check the location and invert levels of the existing public drain and water main to be connected will be carried out once the site is possessed and any conflict to the design will be reported to Architect immediately. All underground drain pipes will be tested and checked prior to covering up.

Water Connection point:

- Plot 2
  - New incoming 63 MDPE residential water main from city main located at Dantzic Street
  - New incoming 32mm MDPE retail water main from city main located at Dantzic Street
  - New incoming 110mm MDPE fire main (sprinkler and wet riser) from city main located at Dantzic Street
- Plot 3
  - New incoming 63 MDPE residential water main from city main located at Dantzic Street
  - New incoming 32mm MDPE retail water main from city main located at Dantzic Street
  - New incoming 80mm MDPE fire main (sprinkler) from city main located at Dantzic Street



Drainage Connection point:

- Plot 2: Connect foul / storm water pipe from terminal manhole, SWMH 10 to existing access chamber at Dantzic Street
- Plot 3: Connect foul / storm water pipe from terminal manhole, FWMH 04 to existing access chamber at Dantzic Street



7.16. MVAC Installation

Submission of the major items including split type AC system, ventilation air control system, and noise control equipment will be carried out at early stage. Coordination with other specialist sub-contractors on setting out of installation, power supply, drain point, signal interfacing, etc. will be carried out. Layout, setting out and loading of plinths for installation of bulky equipment such as Outdoor Unit on concrete slab will be coordinated and submitted for approval prior to concreting.

The installation of MVAC system shall be arranged such that the air-side systems will be functional and the VAC control will be completed prior to statutory inspection.

7.17. Lift Installation

Drawing submissions including builder's work requirements from the Lift sub-contractor shall be submitted and approved by the Project Team. All builder's work requirements including the lift shaft size, lift pit depth, machine room size, lift pit detail etc, will be counter-checked against the contract drawing and requirements will be incorporated during the construction of the lift shafts.

In addition, the following activities will be coordinated in the lift installation:

(i.) Exhaust air duct inside the lift machine room must be checked to avoid clashing with the provision for lift maintenance.

(ii.) Power supply for the lifts installation including type of supply source, switchgears, cable routing and mounting location shall be checked and coordinated with the Electrical sub-contractor to ensure the provisions are fit to use.

(iii.) The provision of cable containment for power supply, control wiring and signal interfacing shall be coordinated to suit the wiring work by Lift sub-contractor for the supervisory system and signal interfacing work.

(iv.) The coordination with the Electrical sub-contractor for the installation of CCTV inside lift cars.

(v.) The provision of fire signal by Fire Services specialist sub-contractor and Generator running signal by Electrical specialist sub-contractor shall be checked and coordinated so that proper NO or NC signal will be connected for homing purpose in case of fire.

Major Lift installation :

- Plot 2 : 2 nos. services lift
- Plot 3 : 2 nos. services lift

7.18. Underground Drainage & External Works

Underground drainage works and external works would be carefully planned and phased to ensure unobstructed site access is maintained at all times. Hard landscaping works will then be sequenced followed by soft landscaping works.

TTM for works outside site boundary would be submitted to the Authorities for approval at the early stage of the Contract if necessary. Installation of utilities shall be planned to minimize the nuisance to the Public.

After installation of the underground drainage and other utilities, sump pits and gully pits will be cast at a later stage concurrent with the run in/out construction. Soft landscape works includes planting tree and shrubs etc. will be carried out in the later stage of the project before handover of the building.

7.19. Power Company

To enable the Power On connections to the building according to the Master Programme, regular meetings and site inspection with ENWL engineers will be instigated. These meetings will ensure ENWL's work arrangement outside site boundary remain on programme and the equipment including transformers and LV switchgear and power cable on site are delivered to suit the progress.

The handover of DNO Sub-station Rooms should strictly adhere to target dates. Time and delivery route of transformers will be planned in advance so that any temporary works such as site hoarding outside the DNO Sub-station Rooms can be modified to suit. Builder work arrangement inside DNO Sub-station Rooms will be counter-checked against the architectural drawings, structural drawings as well as the design drawings issued by ENWL for this particular project.

Early submission of meter application form will enable the communication between the Electrical specialist sub-contractor and Power Company at early stage of the project ensuring any requirement from ENWL can be incorporated during construction stage.

7.20. Water Authority

Early submission of the floor layout plans, plumbing services design, fire services design as well as all technical information of the water-using apparatus and equipment/material will be submitted to the Water Authority. Regular site inspection with engineer/inspector of Water Authority will be arranged to ensure the installation and material follow the approved drawings and meet with the requirements in terms of workmanship.

Separate site inspection with Water Authority to locate the water main connection point is required. All concealed piping and underground water piping should be tested and inspected by Water Authority prior to covering up.

7.21. Drainage Authority

Submission to the Drainage Authority for the application of drainage connection will be carried out at early stage. Meetings and site inspections will be arranged to coordinate on the installation programme, site arrangement and detail of the installation work.

7.22. Fixed Telecommunications Network Services (FTNS) Provider

The services provision inside the TBE Room will be discussed with the FTNS coordinator and will be counter-checked carefully against the contract provisions so as to identify any additional requirements as early as possible.

Usually, the coordinator of FTNS providers will collect all information from others and forward the requirements to the Architect for incorporation before tender stage. Early coordination with the coordinator of the FTNS providers on the precise setting out of the power points and air-conditioning equipment will be carried out to avoid any conflicts that may arise during the equipment installation. Regular meeting and site inspection with engineers from FTNS providers will be arranged to ensure the installation tidy and timely. Besides, coordination between the FTNS providers and the electrical specialist sub-contractor on the provision of direct telephone points with cable containment will be carried out.

Also, if there is diversion work/ demolition of the existing underground installation, cable duct and manholes; early coordination by meeting and site inspection with the related FTNS providers will be arranged to ensure the work will be complete in time.

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8. ARRANGEMENTS FOR CONTROLLING SIGNIFICANT SAFETY RISKS

8.1. Access and Egress

See Logistics plan

8.2. Traffic Management

See logistics plan for further details

Vehicles will be able to turn within the site and exit in a forward direction.

Suitable pedestrian routes will be set up to allow safe access to and around the site.

Access gates will be secured when not in use in order to prevent unauthorised access to the site.

Suitably qualified (CPCS or similar) Plant and Traffic Marshall will be provided at all times when vehicles are manoeuvring.

Deliveries and collections for the majority of the work shall, so far as is reasonably practicable, be restricted to between 8.30 am and 4.30pm. Where necessary to ensure continuity of concrete pours an earlier start and later finish may be required.

There will not be any deliveries outside normal working hours (8am - 6pm on Monday to Friday, and 8am - 1pm on Saturday). But during the week we will make sure with the correct planning will allow very little disruption during peak times

Hard standing for delivery and muck away vehicles has been to ensure that mud / detritus originating from the site is not deposited on the public highway.

Parking is available on site.

All engines will be switched off to control noise on delivery and waste away vehicles

We will spray and dampen down dusty material and make sure that any dusty material leaving site will be watered down.

Waste removal vehicles will be, where required, sheeting down before leaving site.

A wheel wash station will be provided if required.

Where necessary vehicles will be washed down before leaving site.

After washing a vehicle down the Traffic Marshall must check that no mud or debris has been left on cross over's or road.

Any mud or debris that reaches the public highway will be cleaned immediately by the Traffic Marshall.

Under no circumstances should concrete residue or other detritus be washed into the public drainage system.

Horns will not be sounded on site.

Delivery vehicles and waste carriers will be prevented from extending outriggers on the footpath. Where outriggers must be extended on the roadway suitable timber sleepers will be used to spread the load and prevent damage.

Deliveries shall, so far as is reasonably practicable, be given times to arrive. Delivery instructions will be sent to all suppliers and contractors with orders.

Trained Traffic Marshalls will assist when delivery vehicles are accessing the site, or parking on the highway adjacent to the site.

We will use temporary barriers when needed for pedestrian safety along with barriers to close off pedestrian routes on site.

Banksmen shall ensure the safe passage of pedestrians and vehicular traffic when vehicles are being loaded or unloaded.

Vehicles will not, so far as is reasonably practicable, wait or stack on local roads. An appropriate location will be identified and communicated to delivery companies, if a large number of delivery vehicles are expected.

The Site Manager and Traffic Marshalls are responsible for supervising, controlling and monitoring vehicle movements to and from the site and will coordinate and allocate time slots.

Suppliers will be asked to call the Site Manager and Traffic Marshalls at least 20mins before their vehicle arrives at site this must work inside the time slot allocated

8.3. Demolition

No demolition works on this project

8.4. Electrical Installations

Electrical supply installations, both temporary and permanent, shall be installed in accordance with the latest edition of BS 7671: Requirements for electrical installations and the Electricity at Work Regulations 1989.

Temporary low voltage (110V) supply installations shall be installed in accordance with the Electrical Safety Council's Guidance on the management of electrical safety and safe isolation procedures for low voltage installations
[http://www.electricalsafetyfirst.org.uk/mediafile/100370766/Best-Practice-Guide-2-Issue-3-.pdf]

All electrical work should be undertaken by a skilled electrician as defined in BS 7671: Requirements for electrical installations.

Temporary electrical distribution installations and equipment shall be tested before use in accordance with BS 7671 "Requirements for Electrical Installations. IET Wiring Regulations" and a copy of the test certificate maintained in the site office.

Installations (especially of a temporary nature) shall be inspected regularly and tested at intervals not greater than every three months, or when they have been altered. The results shall be recorded in a register kept for the purpose.

Electric cabling (especially of a temporary nature) should be protected against damage from construction site activities in its vicinity.

8.5. Identification and Isolation of Services

Before starting work in any area the Site Manager shall in consultation with the relevant specialist establish the location of all existing services (including foul and surface water drainage) that may be disturbed by the work.

Identification of services shall include the inspection of services records and both a physical survey and electronic scanning survey of all areas that may be affected by the work.

Except for testing when no disconnections or connections are to be made, no one shall work on electrical equipment unless all supplies to it are dead.

In all situations where services are shutdown for work to be carried out, a competent person shall verify that they are effectively isolated and safe to work on. This shall include the placing of notices, and physically securing valves and switches.

8.6. Underground Services

Any excavation carried shall be carried out by a competent person with care and in accordance with the procedures laid down in the Health and Safety Executives guidance HS(G)47 - Avoiding danger from underground services.

8.7. Overhead power lines

Work should be avoided in any area where there is a risk of contact with, or close approach to, the overhead power lines.

Where work cannot be avoided and there is a risk of contact or close approach to the wires, the Site Manager must consult the line owner to find out if:

- to find out if the line can be permanently diverted away from the work area or replaced with underground cables; and if this cannot be done;
- to find out if the overhead line can be temporarily switched off while the work is being done.

In all cases where there is a risk of contact with, or close approach to, the overhead power lines the work will be planned and managed in accordance with the guidance given in the HSE's Guidance Note GS6 Avoiding Danger from Overhead power lines (http://www.hse.gov.uk/pubns/gs6.pdf)

8.8. Accommodating adjacent land use

[Description of any local environmental hazards, such as schools, children in the house being worked on, etc. that will need to be managed along with the controls required to manage the risks].

8.9. Temporary works / stability of structures

Temporary works is defined by BS 5975 as "An 'engineered solution' used to:

- Support or protect an existing structure or the permanent works during construction
- Support an item of plant or equipment
- Support an excavation
- Provide access

Temporary works includes:

- Access;
- Cranes, hoists and crane bases;
- Demolition;
- Excavation, earthworks, cofferdams, trench boxes and trench sheeting;
- Falls restraint, fall arrest and safety netting systems;
- Falsework and Formwork;
- Hoardings;
- Hydraulic struts, jacking, tensioning and lifting beams;
- Loading bays and platforms;

- Permanent works in a temporary condition;
- Piling and piling platforms;
- Propping;
- Site accommodation;
- Scaffolding, mast climbers and edge protection;
- Temporary roadways and haul roads.

Appointment of a Temporary Works Co-ordinator (TWC)

Westfields's Designated Individual [DI] shall on all projects where temporary works will be carried out appoint a person who is competent and has relevant up to date training and both qualification and experience appropriate to the complexity of the above project to be the Temporary Works Co-ordinator (TWC).

The key attributes of a competent TWC are in order of priority,

- relevant experience,
- formal TWC training and
- professional qualifications.

TWCs must have the competence and authority to be effective.

The appointment shall be made in writing using Form C054 Temporary Works Coordinator Appointment.

The appointment is not made until the DI has signed the form to make the appointment and the person appointed has signed the form to accept the appointment.

Temporary Works Co-ordinator roles and responsibilities

The TWC is the first point of contact between the designer and the site team and is responsible:

- to the DI for implementation of the design in accordance with the drawings and specification;
- for ensuring that the Westfields procedure for the control of temporary works is implemented on site;
- for the provision of formal permission to load, which when signed certifies that all appropriate steps have been taken.

The TWC shall:

- coordinate all temporary works activities;
- ensure that the various responsibilities have been allocated and accepted;
- ensure that a design brief is prepared with full consultation, is adequate, and is in accordance with the actual situation on site;
- ensure that any residual risks, identified at the design stage, assumed methods of construction or loading constraints identified by the designer of the permanent works are included in the design brief;
- ensure that a satisfactory Temporary Works design is carried out;
- ensure that a design check is carried out by someone who was not involved in the original design. This should include checking for:
    - concept;
    - structural adequacy;
    - compliance with the brief;

- where appropriate, ensure that the design is made available to other interested parties, e.g. the Principal Designer or the designer of the permanent works;
- register or record the drawings, calculations and other relevant documents relating to the final design;
- ensure that those responsible for on-site supervision receive full details of the design, including any limitations and guidance notes associated with it and prepare a specific method statement;
- ensure that checks are made at appropriate stages;
- ensure that any agreed changes, or corrections of faults, are correctly carried out on site;
- ensure that during use of all temporary works all appropriate maintenance is carried out;
- after a final check, which is satisfactory, ensure that a permit to load (bring into use) is issued;
- when it has been confirmed that the permanent structure has adequate strength and / or stability, ensure a permit to unload (take out of use) the temporary works is issued;
- ensure that a documented safe system of work is in place and implemented for the erection and dismantling of any temporary works;
- ensure that any relevant information for the health and safety file is transferred to the Principal Designer;
- in all cases, ensure that Temporary Works Supervisors [TWS] are operating in accordance with the approved procedures;
- shall hold daily briefing meetings with those undertaking any temporary works to review all aspects of the temporary works;
- at all stages check that the work is being carried out as designed, taking reference to any sequencing required in the design.
- check that materials and equipment are adequate for their purpose and are in accordance with the requirements of the Working Drawings, taking particular care to inspect materials that have been previously used.

Temporary Works Supervisor (TWS) roles and responsibilities

On larger sites, or where a number of subcontractors are involved, it may be appropriate for one or more Temporary Works Supervisors (TWS) to be appointed. The TWS must be appointed in writing by their employers DI.

A TWS shall:

- be responsible to the TWC and assist them in their duties;
- be in direct control of operatives;
- ensure that the temporary works are executed in accordance with the design and method statement;
- supervise and check the erection, use, maintenance, alteration, loading, installation of supporting works prior to dismantling and dismantling of the temporary works which have been delegated under their authority;
- check that materials and equipment are adequate for their purpose and are in accordance with the requirements of the Working Drawings, taking particular care to inspect materials that have been previously used; and
- liaise with the TWC to ensure that the works are executed correctly.

The TWS must understand the scheme that they are responsible for and be in possession of the design.

Temporary works design brief

A design brief shall be prepared using Form C055 Temporary Works Brief for each item of temporary works. It shall include all data relevant to the design of the temporary works and shall be prepared in good time to allow for all subsequent activities. The TWC shall ensure that an adequate design brief is provided to the designer and design checker of the temporary works.

Temporary Works Register

The TWC shall create and maintain a register of temporary works using Form C056 Temporary Works Register. The register must contain an up to date list of all identified temporary works items associated with the project.

The category of design check of all temporary works entered onto the register shall be recorded on the register.

Temporary works design

The design of the temporary works shall be based on the agreed design brief. Any proposed alteration or modification of the design brief by the designer shall be referred back to the TWC. The temporary works should be designed in accordance with recognised engineering principles. The preparation of design calculations, drawings and specification should be undertaken with similar rigour to the procedures applied to the design of the permanent works.

When selecting a temporary works system it is vital to fully risk assess the assembly, instruction and removal sequences. Understanding how the systems are safely assembled and at which stage of installation they are safe to load, enter or strike (remove) is therefore essential.

Designs can where appropriate be standard solutions. A “standard solution” is an arrangement for which the basic design work has already been carried out and is presented in a tabular or similar form, and for which no further calculations are required.

Temporary works design checks

Before erection commences, the temporary works design should be checked for:

- Design concept
- Strength and structural adequacy (including foundations and lateral stability)
- Compliance with the design brief.

The design check should be carried out by an independent competent person(s). The ability and independence of the checker should be greater where the temporary works are more complex or where new ideas are incorporated.

Recommendations for various categories of design check are given in Table 1 of BS5975:2008, reproduced below:

Category	Scope	Comment	Independence of checker
0	Restricted to standard solutions only, to ensure the site conditions do not conflict with the scope or limitations of the chosen standard solution	This applies to the use of standard solutions and not the original design, which will require both structural calculation and checking to category 1, 2 or 3, as appropriate.	Because this is a site issue, the check may be carried out by another member of the site team
1	For simple designs. These may include: formwork; falsework (where top restraint is not assumed); needling and propping to brickwork openings in single storey construction.	Such designs would be undertaken using simple methods of analysis and be in accordance with the relevant standards or other reference publications.	The check may be carried out by another member of the design team
2	On more complex or involved designs. Designs for excavations, for foundations, for structural steelwork connections, for reinforced concrete or where the designer is relatively inexperienced would be included.	Category 2 checks would include designs where a considerable degree of interpretation of soils' information is required before the design of the foundation or excavation support or slope.	The check should be carried out by an individual not involved in the design and not consulted by the designer
3	For complex or innovative designs, which result in complex sequences of moving and/or construction of either the Temporary Works or Permanent Works	These designs include unusual designs or where significant departures from standards, novel methods of analysis or considerable exercise of engineering judgement are involved.	The check should be carried out by another organization.

Temporary Works permit to load

A permit to load using Form C057 Temporary Works Permit to Load / Dismantle shall be issued by the TWC before the temporary works structure or elements are allowed to be loaded. The TWC shall only issue a permit to load one they have checked the temporary works and verified that the structure or element has been erected in accordance with the working drawings and specification and is safe to load.

Temporary Works permit to dismantle

Upon completion of the permanent works, a permit to dismantle using Form C057 Temporary Works Permit to Load / Dismantle shall be issued to the contractor responsible for dismantling the works by the TWC before the Temporary Works is dismantled.

The TWC shall ensure the temporary works is dismantled to either an approved method statement or in accordance with the manufacturer's instruction.

Temporary Works inspection

The TWC shall ensure that all necessary statutory checks and any periodic checks, maintenance and public risk checks required by the working drawings or specification, are carried out for the lifetime of the temporary works and are recorded on the relevant statutory register of Form C058 Temporary Works Inspection Form.

Alterations and Changes

Under no circumstances must any alterations or changes be undertaken to the temporary works design or installation without being checked and approved by the TW Designer and discussed with the TWC prior to implementing.

8.10. Hoardings

Guidance on the design and installation is given in 'Hoardings – A guide to good practice published by the Temporary Works Forum and available to download from http://www.twforum.org.uk/media/39110/twf2012_01_hoardings_good_practice_01.pdf

Site hoardings shall be designed by a competent person and installed in accordance with the guidance given in the above document.

The condition of all hoardings, particularly where they run adjacent to public areas, must be checked weekly by the Site Manager as part of their Weekly Health and Safety Inspection.

8.11. Work involving the assembly or dismantling of heavy prefabricated components.

No prefabricated components require dismantling

8.12. Preventing falls

To prevent or minimise risk when planning for work at height, a sensible risk-based approach to identify suitable precautions shall be taken. Control measures for determining how to work at height safely shall be taken following the hierarchy set out below. The hierarchy shall be followed systematically and only when one level is not reasonably practicable may the next level be considered. Where it is reasonably practicable to prevent a fall, precautions shall be taken to do so. It is not acceptable to select work equipment from lower down the hierarchy (e.g. personal fall arrest systems such as harnesses and lanyards) in the first instance.

The company shall in controlling work:

- avoid work at height where they can;
- use work equipment to prevent falls where work at height cannot be avoided;
- where the risk of a fall cannot be eliminated, use work equipment to minimise the distance and consequences of a fall should one occur;
- always consider measures that protect all those at risk, i.e. collective protection measures (scaffolds, nets, soft landing systems) before measures that only protect the individual, i.e. personal protection measures (a harness);
- ensure work is carried out only when weather conditions do not jeopardise the health and safety of the workers.

Safe working platforms

A working platform is virtually any surface from which work is carried out, such as a roof, scaffold, MEWP, tower scaffold, trestle etc. It becomes a safe working platform when you can't fall off it or through it or when measures have been taken to mitigate a fall from it.

Working platforms shall be:

- capable of supporting the weight of the workers using it and any materials and equipment they are likely to use or store on it;
- stable and will not overturn. For example, scaffolds usually need to be tied to a supporting structure and MEWPs should not be operated on sloping or uneven ground;
- wide enough to allow people to pass back and forth safely and use any equipment or material necessary for their work at that place;
- kept clear of loose materials and constructed to prevent materials from falling. As well as toe boards

or similar protection at the edge of the platform, the platform itself should be constructed to prevent any object that may be used on the platform from falling through gaps or holes, causing injury to people working below. For scaffolds, a close-boarded platform would suffice, although for work over public areas, a double-boarded platform sandwiching a polythene sheet, fans or protected walkways may also be needed. If MEWPs or cradles are used and they have meshed platform floors, the mesh should be fine enough to prevent materials, especially nails and bolts, from slipping through;

- free of openings and traps through which people's feet could pass, causing them to trip, fall or be injured in any other way; and
- kept free of tripping and slipping hazards. Keep platforms clean and tidy and do not allow materials or waste to build up on them.

Inspections and reports

The Site Manager shall ensure that all scaffolding and working platform is inspected by a competent person:

- after installation or assembly in any position;
- after any event likely to have affected its stability, e.g. following strong winds or substantial alteration; and
- at regular intervals if the working platform is below 2 m or at intervals not exceeding seven days if the working platform is at 2 m or above.

Inspections shall be undertaken by the Site Manager if they are competent to do so. Where the Site Manager does not have the relevant training and experience to undertake the inspection they shall arrange for a competent person to inspect.

Scaffold inspections shall reports shall be recorded using a Reports of Inspection for Scaffolding Book [Construction Industry Publications ISBN: 9781852639624 http://www.cip-books.com/] or Form C050 Scaffold Inspection Form.

Completed forms and report books will be stored in Site H&S File - Section 9.

Scaffolding

It is a requirement of the Work at Height Regulations 2005 that unless a scaffold is assembled to a generally recognised standard configuration, eg NASC Technical Guidance TG20 for tube and fitting scaffolds or similar guidance from manufacturers of system scaffolds, the scaffold should be designed by bespoke calculation, by a competent person, to ensure it will have adequate strength, rigidity and stability while it is erected, used and dismantled.

Tower Scaffolds

Tower scaffolds delivered to site without a current inspection and maintenance certificate or with parts missing will not be accepted or used.

Towers shall be erected by trained and competent people who are following one of the two approved methods recommended by the Prefabricated Access Suppliers' and Manufacturers' Association (PASMA) and developed in consultation with the HSE.

Ladders and Steps

Ladders and stepladder shall not be used, even for short-duration work, unless there is no safer means of access. An assessment shall always be undertaken before choosing to use ladders or stepladders. If the assessment indicates that more suitable equipment is not justified, a ladder or stepladder may be used:

- for short-duration work (15-30 minutes in one position depending on the risk assessment);
- for light work (they are not suitable for strenuous tasks which may involve carrying materials or

supporting components, eg guttering); and

- if a secure handhold is available.

8.13. Fragile roofs

The terms 'fragility' and 'fragile surfaces' are used to describe roof assemblies that will not safely support the weight of a person and any materials they may be carrying.

Site Managers shall ensure that no one working under the company's control goes onto or near a fragile surface unless that is the only reasonably practicable way for the worker to carry out the work safely, having regard to the demands of the task, equipment, or working environment.

If anyone does work on or near a fragile surface the company shall:

- Ensure, so far as it is reasonably practicable, that suitable platforms, coverings, guard rails, and the like are provided and used to minimise the risk;
- do all that is reasonably practicable, if any risk of a fall remains, to minimise the distance and effect of a fall.

If anyone working under the company's control may go onto or near a fragile surface, the company shall do all that is reasonably practicable to make them aware of the danger.

The hierarchy for work on fragile roofs is:

- work from underneath the roof using a suitable work platform;
- where this is not possible, consider using a MEWP that allows people to work from within the MEWP basket without standing on the roof itself;
- if access onto the fragile roof cannot be avoided, perimeter edge protection should be installed and staging used to spread the load. Unless all the work and access is on staging or platforms that are fitted with guard rails, safety nets should be installed underneath the roof or a harness system used;
- where harnesses are used they need adequate anchorage points. They also rely on discipline, training and supervision to make sure that they are used consistently and correctly.

Identification of fragile surfaces

Whatever roofing assembly has been specified, all non-fragile roofs will deteriorate with time and at some point the assembly will become fragile. All roofs, once fixed, should be treated as fragile until a competent person has confirmed that they are non-fragile.

8.14. Fragile materials

No fragile materials have been specified for use on this project

8.15. Control of lifting operations

The Site Manager shall not permit a lifting operation to be undertaken on his site until a safe system of work has been laid down and effectively communicated to all those involved in a lifting operation.

A safe system of work for a lifting operation must include:

- thorough planning of the operation, along with the selection, provision and use of suitable cranes and equipment
- the maintenance, testing and examination of all equipment
- supervision by trained and competent personnel, with all necessary authority to progress or stop a job as necessary

- the provision of all test certificates and other documentation relevant to the equipment being used
- the prevention of unauthorised use or movement of equipment, both by workers or members of the public who may be trespassing
- the safety of all persons, both those involved in the lift as well as those not involved in the lift but who may be affected by the lifting operation.

Particular attention must be paid to any factors that may affect the stability of the lifting equipment and the safety of others who may be affected by the lifting operations.

The Site Manager will review the lifting plan prior to the commencement of the lifting operation with the lifting coordinator to ensure that identifies and addresses all risks associated with the lift.

One person shall be appointed to take responsibility for the organisation and control of any lifting operations. They shall be adequately trained and have the necessary experience to be deemed to be competent.

The appointed person must:

- assess the proposed lift to provide for planning, selection of equipment,
- instruction and supervision to enable the work to be carried out safely
- ensure that all tests, inspections, examinations and maintenance have been carried out, and that there is a procedure for reporting defects and taking whatever corrective action is necessary
- have the authority to carry out their duties and to stop the operations if they think there is a danger.

The appointed person's duties, but not their responsibilities, may be delegated to another competent person.

Drivers of cranes and other lifting appliances and others involved in lifting operations, including signallers, must be adequately trained and experienced and aged 18 years or over, unless under the direct supervision of a competent person for the purpose of training.

If a driver cannot see the load during the whole lifting operation, they must have one or more trained signallers or some other signalling system (e.g. radio) to enable them to handle the load safely. Signals must be clear and distinct. Mechanical or electrical signals should be kept in good order and safeguarded against accidental operation.

Copies of all Lifting Plans and Lifting Equipment Examination and Inspection Records shall be stored in Site H&S File - Section 11.

Lifting equipment and accessories for lifting must:

- be properly maintained
- as far as its construction permits, be inspected regularly at least once every week by the driver or other competent person.

Weekly and regular inspections of all lifting equipment shall cover:

- the soundness of materials, attachments, fittings, outriggers, jibs, ropes and hooks, etc.
- the testing of the automatic safe load indicator, the correct settings of cams, linkages and switches and the correct working of audio-visual warning signals
- the mechanical condition of the lifting equipment

A record shall be kept of all lifting equipment inspections.

8.16. Tower Cranes

Top Slew Tower Cranes [TSTC] shall generally be installed, used, dismantled and removed from site in accordance with the guidance given in Safe Use of Top Slew Tower Cranes - CPA Best Practice Guide.

Self Erecting Tower Cranes [SETC] shall generally be installed, used, dismantled and removed from site in accordance with the guidance given in CPA Best Practice Guide - Safe Use of Self Erecting Tower Cranes.

Both guidance documents can be downloaded at http://www.cpa.uk.net/tower-crane-interest-group-tcig-publications/ .

There are a wide variety of contractual arrangements used in the construction industry and it is important to ensure that the planning, organisation, control and management of lifting operations is not compromised. In general, any organisation requiring a load to be moved by crane, which does not own its cranes, has two basic options:

- Hiring a crane (Hired Crane) or
- Employing a contractor to carry out the lifting operation (Contract Lift).

Hired Crane

Where a crane in Hired the Westfields Project Manager must ensure that:

- all work is carried out in accordance with BS 7121 Code of practice for safe use of cranes;
- a person with the required skills, knowledge and experience is appointed as “Appointed Person” to plan, manage, monitor and review the siting, setting up, use, dismantling and removal from site of the tower crane;
- the appointed person plans the lifts and operate a safe system of work;
- the crane hired is of a suitable type and capacity;
- the credentials of the crane hire company and certification supplied are checked and suitable.

Where a crane in Hired the crane hire company (the owner) has a duty to:

- provide a crane that is properly maintained, tested and certified;
- provide a competent operator.

Contract Lift

Where Westfields employ a contractor to carry out the lifting operation (Contract Lift) the Westfields Project Manager must ensure that:

- all work is carried out in accordance with BS 7121 Code of practice for safe use of cranes;
- the contractor supplies a person with the required skills, knowledge and experience as “Appointed Person” to plan, manage, monitor and review the siting, setting up, use, dismantling and removal from site of the tower crane;
- they specify what information and/or services will be provided to the Contractor by Westfields Homes.

On Contract Lifts the Contractor is responsible for:

- supplying the Appointed Person;
- planning the lift, and operation of a safe system of work;
- organisation and control of the lifting operation.
- providing a crane that is properly maintained, tested and certified;

- providing a competent operator.

Appointed Persons

The Project Manager shall ensure that an "Appointed Person" is appointed with the necessary skills, knowledge and experience is appointed to plan, manage, monitor and review the siting, setting up, use, dismantling and removal from site of a tower crane.

The appointment shall be made using Form C065 Appointed Person Appointment Form.

In practice there may be separate "Appointed Persons" for:

- siting, setting up, use, dismantling and removal from site (This will generally be carried out by the crane owner or supplier, who will carry out the planning in conjunction with the hirer and occupier of the site); and
- use of the crane (This will normally be carried out by the hirer (user) who is responsible for the planning, supervision and execution of each lift.).

The Appointed Person should be:

- notified formally in writing of their appointment.
- given authority to carry out the duties involved, including consulting others with specialist knowledge and experience, and
- able to delegate duties and tasks for any part of the Safe System of Work to suitably qualified individuals.

Westfields Homes as occupier of the site will generally be responsible for ensuring that both access and tower crane base foundations are adequate for the tower crane before it is brought on to site and erected.

Where Westfields Homes does not have expertise in lifting operations they should not hire in cranes and manage the lifting operation, but should opt for a contract lift.

Before entering into a contract, the Project Manager must satisfy themselves that the contractor has the necessary skills, knowledge and experience to carry out the work. The responsibilities for insurance of the crane, personnel, the load and third parties must be clarified.

The normal form of contract conditions used when hiring a crane are the Construction Plant-hire Association's Model Conditions for the Hiring of Plant (July 2001). The Project Manager shall ensure that they are fully aware of Westfields Homes liabilities under these conditions, including ground conditions, and arrange for adequate insurance cover for all risks including possible loss of or damage to the crane and make adequate provision for addressing complying with all conditions.

On construction sites where lifting operations are carried out by various subcontractors, including the crane supplier, Westfields Homes should appoint the Appointed Person for the site. Each of the sub-contractors on site may employ individuals who have undergone appointed person training but they should remain subservient to the Westfields Home's appointed person.

Both the Westfields Home's (hirer's) appointed person and the crane supplier's appointed person must ensure that the planning for each task includes the following :-

- Identifying the task to be undertaken;
- Identifying the hazards associated with the task;
- Carrying out a risk assessment;
- Identifying control measures;
- Developing the method to be used;
- Recording the planning in a Method Statement (including any contingency activities for rescue);

- Communicating the plan to all persons involved;
- Reviewing the plan before the tasks starts and incorporating any changing circumstances.

Site surveys

The planning of delivery to site, erection, alteration and dismantling of a tower crane will require a site survey, carried out by a representative of the crane owner. This involves visiting the location where the task is to be carried out, preferably with a representative of the hirer, so that both the task and any hazards involved can be identified. For simple tasks the remainder of the planning process may be completed at the same time, whilst for more complicated jobs the site surveyor may need to complete the process off site.

Identifying the hazards associated with the task

The hazards associated with the task should be identified. These might be associated with the location where the work is to be carried out, the nature of the tower crane, load to be lifted or the people associated with the task or located in the vicinity.

Carrying out a risk assessment

Having identified the hazards associated with the task, a risk assessment should be carried out to identify who might be harmed, the chance of them being harmed and the consequences of any harm. This assessment should be recorded.

Identifying control measures

Once the risk assessment has highlighted the risks involved in the task, the procedures and measures required to control them should be identified.

Developing the method to be used

Having identified the hazards, evaluated the risks and worked out the control measures required to carry out the task safely, these components should be developed into a coherent plan. Any contingency measures and rescue procedures should be included in the plan.

Recording the planning in a Method Statement

Once the plan has been developed it should be recorded in a Method Statement. The length and detail of this document depends on the complexity of the task to be undertaken and on the risks involved. A simple low risk job such as a routine lift of dry lining sheets might only require the use of a brief generic method statement, whilst a more complex and high risk job such installation of a TSTC on site would require a more detailed job specific method statement. The method statement covering all planned lifting on a site is often referred to as the “lift plan”. The method statement should include a “lifting schedule” listing each type of item to be lifted together with the following information:

- Item description;
- Weight;
- Dimensions;
- Lifting points/method;
- Type of lifting accessories to be used and configuration;
- Pick up and landing locations referenced to the site plan;
- Height and maximum radius.

Communicating the plan to all persons involved

One of the most important aspects of successful planning is to ensure that the contents of the plan are communicated effectively to, and between, all parties involved taking account of language differences. Arrangements should be made to ensure that copies of any method statements are given to the appropriate people (including the Site Manager) and that others involved in the job are fully briefed. Similarly any changes to the plan should be communicated to all parties.

Reviewing the plan before the job starts

Immediately before a job starts the risk assessment and method should be reviewed to check if any aspect of the job has changed and the effect that these changes could have on the safety of the operation. If any modifications to the plan are required these should be communicated to all those involved. The appointed person should amend the method statement (lift plan) and initial any significant changes.

The Duties of the Appointed Person

The duties of the Appointed Person include ensuring that:

- the lifting operation is properly planned and carried out;
- a suitable and sufficient risk assessment is carried out to evaluate the hazards associated with the lifting operation and identify control measures;
- planning is recorded in a lift plan which is effectively communicated to all members of the lifting team;
- accurate weights, radii, heights, etc are established;
- suitable tower cranes, lifting accessories and other equipment are selected ;
- suitable access is provided to unload and store materials within the operating area of the tower crane;
- competent, properly trained personnel are provided and that they are fully briefed;
- all tower cranes, lifting accessories and other equipment are properly maintained, inspected, examined and tested (when necessary);
- appropriate steps are taken to exclude persons not directly involved with the lift from the lifting zone using barricades etc.

The appointed person must ensure that a tower crane supervisor is appointed and present throughout the lifting operation in order to control it and ensure that it is carried out in accordance with the planning. The appointed person may choose to act as the tower crane supervisor. The tower crane operator must know who the tower crane supervisor is and, if they have any problems whilst on site, they should consult him.

The appointed person retains overall responsibility for the lifting operation and has the authority to stop the lifting operation at any time if it is considered that there is a risk to safety. If the appointed person is not present, then this authority passes to the tower crane supervisor.

It is not appropriate for the tower crane operator, to be in control of the lifting operation because he has to concentrate on the control of the tower crane during lifting.

On multi-crane sites the appointed person should appoint a crane co-ordinator for the site and a crane supervisor for each crane.

Composition of a TSTC Lifting Team (minimum)

The lifting team shall include as a minimum a:

- Crane Supervisor (See duties below);
- Crane Operator (See duties below);

- Slinger Signaller (See duties below);

Note- All personnel must be either over 18 years of age or under the direct supervision of a person competent for the purpose of training

Composition of a SETC Lifting Team (minimum)

In certain circumstances it may be possible to combine some of the roles of members of the lifting team. The table below illustrates where this may take place, however the table should not be taken as definitive for every circumstance. Role combination should only take place following review of the lifting operation by the appointed person.

It should be noted that an appointed person is required to plan all lifting operations but need not be present during the lifting operation, except for complex lifts.

<table>
<tr><th rowspan="2">Activity</th><th rowspan="2">Role</th><th colspan="3">Lift Category</th></tr>
<tr><th>Basic</th><th>Intermediate</th><th>Complex</th></tr>
<tr><td>Planning</td><td>Appointed Person</td><td>Required</td><td>Required</td><td>Required</td></tr>
<tr><td>Site Visit</td><td>Appointed Person</td><td>Not essential</td><td>May be required</td><td>Required</td></tr>
<tr><td rowspan="4">Lifting Operation</td><td>Appointed Person</td><td>Not essential</td><td>May be required</td><td>Required</td></tr>
<tr><td>Crane Supervisor</td><td rowspan="3">Roles may be combined in one person</td><td rowspan="2">Roles may be combined in one person</td><td>Required</td></tr>
<tr><td>Operator</td><td>Required</td></tr>
<tr><td>Slinger/ Signaller</td><td>Required</td><td>Required</td></tr>
</table>

Basic Lift: A lifting operation where the weight of the load(s) can be simply established, and there are no hazards or obstructions within the area of the operation

Intermediate Lift: A lifting operation where there are hazards, either within the working area of the crane or on the access route to the working area, but no multiple crane lifting is required

Complex Lift: A lifting operation which requires more than one crane to lift the load, or cranes using load enhancement equipment, lifting of persons or when the lifting operation is at a location with exceptional hazards

Tower Crane Supervisor Duties

The tower crane supervisor's duties include:

- ensuring that the tower crane and other equipment are in accordance with the lifting plan prepared by the appointed person;
- ensuring that sufficient personnel are available to safely carry out the lifting operation;
- ensuring that the conditions on site are the same as those identified by the lifting plan;
- reporting back to the appointed person if there are any problems;
- briefing the personnel before the lifting operation begins;
- supervising and directing the slinger, signaller and tower crane operator;
- only lifting items that have been detailed in the lifting plan;
- stopping the operation in the event of any risk to safety.

For some basic lifting operations the slinger/signaller may, with appropriate authority and training, act as the crane supervisor. Crane supervisors should not act as a slinger/signaller unless they are trained and competent to do so. (This generally means holding a CPCS slinger/signaller qualification).

Crane Coordinator Duties

Where required the Crane Co-Ordinator's duties include the planning and directing of the sequence of operations of cranes to ensure that they do not collide with other cranes, loads and other equipment (e.g. concrete placing booms, telehandlers, piling rigs).

TSTC Operator Duties

The tower crane operator's duties include:

- establishing who is in charge of the lifting operation and the other members of the team and their roles;
- establishing which signalling system is to be used and following instructions from only one nominated signaller at a time;
- stopping operations if given any instructions that would take the tower crane outside its permitted duties;
- informing the crane supervisor if any problems arise which would affect the lifting operation;
- carrying out the daily checks and weekly inspections;
- carrying out specified maintenance in accordance with the manufacturers and employer's instruction and training;
- using the tower crane to lift only the loads that are identified in the lift plan.

If the tower crane operator believes that the operation they are being asked to carry out is unsafe, they should initially speak to the crane supervisor or appointed person. In the event that there is a disagreement between the operator and the crane supervisor or appointed person the operator should notify his employer.

SETC Operator Duties

The SETC operator's duties include:

- establishing who is in charge of the lifting operation and the other members of the team and their roles;
- establishing which signalling system is to be used and following instructions from only one nominated signaller at a time;
- stopping operations if given any instructions that would take the SETC outside its permitted duties;
- informing the crane supervisor if any problems arise which would affect the lifting operation;
- carrying out the daily checks and weekly inspections;
- carrying out specified maintenance in accordance with the manufacturers and employer's instruction and training;
- using the SETC to lift only the loads that are identified in the lift plan.

If the SETC operator believes that the operation they are being asked to carry out is unsafe, they should initially speak to the crane supervisor or appointed person. In the event that there is a disagreement between the operator and the crane supervisor or appointed person the operator should notify his employer.

Slinger Duties

The slinger's duties include:

- attaching and detaching the load to and from the tower crane;
- using the correct lifting gear in accordance with the lifting plan or procedure;
- visually checking the lifting gear for damage before use;
- initiating and directing the movement of the load by giving the appropriate signals;
- to place the load safely.

On some occasions the appointed person may ask the slinger to act as the signaller.

Signaller Duties

The signaller's duties include relaying signals from the slinger to the tower crane operator. The roles of slinger and signaller are generally combined in one person.

Training

The Site Manager shall ensure that all persons involved in the installation and operation of a TSTC are adequately trained and assessed as competent. The current standards are set out below:

Activity	Provided by	Qualification
Slinger	CPCS Accredited Training Provider	CPCS Scheme Category A40
Signaller	CPCS Accredited Training Provider	CPCS Scheme Category A40
TSTC Operator	CPCS Accredited Training Provider	CPCS Scheme Category A04A or A0-4B
SETC Operators	CPCS Accredited Training Provider	CPCS Scheme Category A63
	Additional training required for operating from cab	CPCS Scheme Category A04A or A04B
SETC Configuration (erect & dismantle) and partial reconfiguration on site (folding jib and/or mast)	Crane manufacturer to crane owner for each model of SETC	In-house assessment by a competent assessor
TSTC Erect, alteration and dismantling	Crane manufacture to crane owner for each model of TSTC CPA/Construction Skills Tower Crane Erection Training Scheme	In-house assessment by a competent assessor NVQ Level 2 and 3 Plant Installation (Tower Cranes)
Maintenance	Crane manufacture to crane owner for each model of TSTC / SETC	In-house assessment by a competent assessor
Operator familiarisation	Crane owner to operator for each model of TSTC	In-house assessment by a competent assessor
Appointed Person	CPCS Accredited Training Provider	CPCS Scheme Category A61
Crane Supervisor	CPCS Accredited Training Provider	CPCS Scheme Category A62
Site survey - fundamental	Crane owner to representative	In-house assessment by a competent assessor
Site survey - familiarisation	Crane owner to representative for each model of TSTC	In-house assessment by a competent assessor

In addition to initial assessment on appointment/employment, arrangements should be made to reassess/review the competence of personnel at periodic intervals.

The Site Manager shall obtain and check the qualifications of all personnel involved in the erection, use, maintenance, inspection and dismantling of a TSTC and ensure that copies of training certificates and qualifications are kept in Section 11 of the Site Health and Safety File.

Written plan (method statement or lifting plan)

After completion of the survey the Appointed Person should prepare, or have drawn up under his direction, a scale drawing of the site. The drawing should include the following information:

- Plan and side elevation views;
- Outline envelope of the building under construction;
- The planned location of the crane with dimensions to reference points to aid location;
- The make and model of crane selected;
- The radius that the crane can reach;
- SWL at max radius;
- Height under hook;
- Proximity hazards and delivery vehicle unloading areas.

The Site Manager shall ensure that a copy of the written plan is kept in Section 11 of the Site Health and Safety File.

Maintenance

The supplier (owner) of a tower crane has a responsibility to provide a crane that is in good condition, free of defects and safe to use, when the crane goes out on hire. The Project Manager shall verify that the tower crane is in good condition, free of defects and safe to use by obtaining from the owner and reviewing the:

- pre-delivery inspection records carried out by the crane owner in their yard (See Clause 7.2 of BS 7121-2-5:2012);
- post delivery check records (See Clause 7.3 of BS 7212-2-5:2012);

The effective maintenance of a TSTC is an essential part of safe operation. As with all lifting machines the TSTC wears and deteriorates over time and the maintenance process, including checks and inspections, both monitors, prevents and rectifies this deterioration. It is important that the personnel asked to carry out these tasks have the necessary machine-specific training, experience and competence in both periodic and breakdown maintenance.

Both the user and owner of the tower crane have a responsibility to ensure that the tower crane is maintained in a safe working condition. In practice the maintenance is normally undertaken by the tower crane owner.

Maintenance and Inspection should be carried out in accordance with the guidance given in the:

- CPA Best Practice Guide - Maintenance, Inspection and Thorough Examination of Tower Cranes http://www.cpa.uk.net/tower-crane-interest-group-tcig-publications/ ;
- the tower crane owner's instructions;
- the manufacturer's recommendations, and
- shall be recorded:

In particular:

- pre-use checks shall be carried out by the crane operator at the start of each shift to ensure that the crane has not suffered any damage or failure and is safe to be used;
- in-service inspections are to be carried out by the crane operator, generally at weekly intervals, and

records kept of these inspections;

- a properly planned maintenance system is established and used. Competent people should undertake this maintenance at intervals specified by the manufacturer and records kept of the work completed including any parts that have been replaced. In general the original manufacturers parts should be used. Where parts are sourced from suppliers other than the original manufacturer a competent engineer should assess that the parts selected meet the original manufacturers specification and are fit for purpose. Any parts replaced should be installed in accordance with the manufacturer's instructions;
- further thorough examinations are carried out by a competent person at specified intervals, after major alterations or repair or after the occurrence of exceptional circumstances which are liable to jeopardise the safety of the crane.

It is essential that the crane owner is informed of any breakdowns and faults, together with exceptional events such as jib clashes, overloading and shock loads; so that the appropriate action can be taken.

If there is a defect that affects the safe operation of the tower crane it must be reported to the owner and repaired immediately.

If it does not affect the immediate safe operation of the tower crane the defect should be reported as required by the tower crane owner's procedures.

Thorough Examination

All lifting equipment, including TSTCs, must be thoroughly examined by a competent person:

- After erection on a new site and before it is taken into use;
- when any alteration is made to the crane's structure or configuration
- At regular intervals (a period not exceeding 12 months, if persons are not lifted, or 6 months if persons are lifted);
- After any major alteration or damage (event).

Thorough Examination should be carried out in accordance with the guidance given in the CPA Best Practice Guide - Maintenance, Inspection and Thorough Examination of Tower Cranes http://www.cpa.uk.net/tower-crane-interest-group-tcig-publications/ .

Reports of thorough examination should contain the details required by Schedule 1 of LOLER including details when testing was last carried out on the tower crane, (this may include: non destructive testing, overload testing, testing of the rated capacity indicator with loads).

Thorough examinations should be carried out by persons who are sufficiently independent and impartial, and are separate from the erection team.

Lifting accessories shall be thoroughly examined at intervals not exceeding six months.

The Site Manager shall ensure that Thorough Examination records for the crane and lifting appliances are kept in Section 11 of the Site Health and Safety File.

Tower crane rescue

The Project Manager shall ensure that there is a suitable plan in place prior to the erection or use of a tower crane for carrying out rescue from a height of persons on a tower crane.

The plan shall be developed in accordance with the guidance given in CPA TIN 013 Rescue of Personnel From Height on Tower Cranes and must be written down.

The Site Manager shall ensure that a copy of the rescue plan is kept in Section 11 of the Site Health and Safety File.

8.17. Tele-handlers

Where Westfields operate a telehandler on site the Project Manager shall ensure that an "Appointed Person" is appointed with the necessary skills, knowledge and experience is appointed to plan, manage, monitor and review all lifting operations undertaken using the telehandler.

The appointment shall be made using Form C065 Appointed Person Appointment Form.

Best practice guidance on the safe use of telehandlers is given in 'Safe Use of Telehandlers in Construction' published by the Strategic Forum for Construction Plant Safety Group and available on the Construction Plant-hire Associations website http://www.cpa.uk.net/sfpsg/ .

The Strategic Forum for Construction Plant Safety Group have also published a Good Practice Guide for Lifting and Travelling with Suspended Loads using Telehandlers with is also available on the CPA website.

The standards set out in these document will be those enforced on Westfields sites.

The Site Manager shall not authorise the use of a telehandler until:

- they have seen, checked and filed a copy of the record of thorough test and examination for the tele-handler;
- a risk assessment has been undertaken by an Authorised Person with the necessary skills knowledge and experience using Form C062 Telehandler Lifting Plan - Standard;
- the telehandler operator has provided proof of competence, which should include proof of training (CPCS card or similar), proof of familiarisation on the telehandler to be used and adequate experience of the task to be undertaken; and
- the telehandler operator has read and signed the risk assessment to confirm they understand and will comply with the controls set out in the risk assessment.

Where a telehandler is to be used as a crane for lifting suspended loads, additional planning shall be undertaken by a person competent to undertake the task and the operators competence to undertake such tasks must be verified. Form C063 Telehandler Lifting Plan – Suspended Loads should be used to record and communicate the lifting plan.

Telehandlers shall be inspected daily and Form C064 Telehandler Daily Inspection Record used to record the inspection.

Copies of all Lifting Plans and Tele-handler Examination and Inspection Records can be found in Site H&S File - Section 11.

8.18. Work equipment

All work equipment for use on Westfields sites will be fit for use and must be examined, inspected and maintained in accordance with the relevant statutory requirements and manufactures recommendations.

Defective work equipment shall be taken out of action and either disposed of or clearly labelled and not used until a suitable repair has been undertaken.

Contractors Work Equipment

Contractors shall provide the Site Manager:

- with, where relevant, certificates of examination and/or inspection and evidence of operator training prior to putting the plant, machinery or equipment into use on site for the first time;
- every week, with a register detailing all work equipment they have on site that confirms examination, test or inspection in accordance with the relevant statutory requirements and manufactures

recommendations.

The Site Manager shall ensure that all examination certificates are current and all operators have with them adequate certificates of training, i.e. CPCS / CTA for the plant they intend to operate.

Copies of Contractors registers and all certificates will be taken by the Site Manager and stored in Site H&S File - Section 6, in the file or section relating to the contractor who is using the equipment. Operator training certificates will be appended to the operator's induction record.

The Site Manager has the authority to prevent/stop an operator from using plant on site if in their opinion the item of plant is not being operated safely.

Westfields Work Equipment

The Site Manager shall keep a record of all work equipment owned or hired by the Company for use on the site along with details and frequency of any inspection, testing or maintenance required. Where inspection, testing or maintenance is required the site manager shall ensure that this is undertaken or returned to the hire company for them to undertake.

Records shall be held in a Record of Inspection Provision & Use of Work Equipment Book [Construction Industry Publications ISBN: 9781852638917 http://www.cip-books.com/] or using Form C060 Work Equipment Register.

Copies of Westfields Work Equipment registers and all certificates will be stored in Site H&S File.

Portable Appliances

Portable electrical appliances will be checked, inspected and tested to the standards set out in HSG107 Maintaining portable electrical equipment and repeated in the table below.

The site manager shall ensure that all contractors provide a record of all checks, inspections and tests and will maintain a copy in Site H&S File, in the file or section relating to the contractor who is using the equipment.

Equipment / Location	User checks	Formal visual inspection	Combined inspection and test
110V	Weekly	Monthly	Before 1st use on site and then 3 monthly
230V	Daily	Weekly	Before 1st use on site and then monthly
Fixed RCDs	Daily	Weekly	Before 1st use on site and then 3 monthly (portable RCDs monthly
Site Office	Monthly	6 Monthly	Before 1st use on site and then yearly

Form C061 PAT Inspection Log can be used to record checks, inspections and tests of Westfields owned or hired equipment. Copies of completed forms shall be stored in Site H&S File - Section 12

8.19. Work on excavations

Permit to Dig

A Permit to Dig is required before undertaking any excavation. Permits shall be issued by the Site Manager using Form C072 Permit to Dig. The Site Manager shall not issue a permit to Dig until he is satisfied that all relegate requirements of HSG47 have been complied with and suitable RAMS have been produced for the operation.

Closed Permits shall be stored in Site H&S File.

Temporary Support

Before digging any trenches, pits, tunnels, or other excavations, a decision shall be made about what temporary support will be required and what precautions that are going to be taken against:

- collapse of the sides;
- people and vehicles falling into the excavation;
- materials falling onto people working in the excavation;
- undermining nearby structures;
- underground and overhead services; and
- the inflow of ground and surface water.

No temporary works shall commence until the temporary works coordinator is satisfied that:

- the temporary works have been appropriately designed by a competent designers;
- the temporary works design has been checked as indicated in the table below;
- there a suitable risk assessment and method statement in place for the construction of the temporary works; and
- a suitable inspection regime has been agreed.
- all equipment and precautions needed (such as trench sheets, props, baulks etc) is available on site

A copy of the geotechnical survey is included in Site H&S File.

Inspections and reports

Construction work shall not be carried out in an excavation where any supports or battering have been provided unless the excavation and any work equipment and materials which affect its safety, have been inspected by a competent person:

- at the start of the shift in which the work is to be carried out,
- after any event likely to have affected the strength or stability of the excavation, and
- after any material unintentionally falls or is dislodged; and

the person who carried out the inspection is satisfied that the work can be carried out there safely.

Inspections of excavations shall be recorded using Form C051 Excavation Inspection Register or a Reports of Inspection for Excavation Book [Construction Industry Publications ISBN : 9781852639624 http://www.cip-books.com/] or Form C073.

Copies of all completed excavation inspection reports shall be stored in Site H&S File.

8.20. Storage of materials

A drawing detailing traffic routes, pedestrian segregation, welfare, storage and fire safety arrangements will be maintained on the Westfields Site Traffic and Environmental Plan on the wall of the site office.

The Site Traffic and Environmental Plan must be reviewed and updated by the Site Manager monthly and before making any changes to the arrangements show on the plan.

Unless authorized by the Site Manager materials shall only be stored in dedicated storage areas.

Materials not already programmed into the works, or delivery schedule, will not be allowed onto site without the Site Managers permission.

8.21. Confined Spaces

[Details of any confined spaces and the arrangements for managing the risk]

All manholes into which an adult or child may enter shall be considered a confined space and shall be adequately secured. Security will either involve the early fixing of the manhole cover or the use of a road plate that cannot be easily removed or dislodged.

Under the Confined Spaces Regulations 1997, a 'confined space' can be either:

- a place which is substantially, though not always entirely, enclosed; or
- a place where there is a reasonably foreseeable risk of serious injury from hazardous substances or conditions within the space or nearby.

Some confined spaces are easy to identify, such as closed tanks, vessels, ducts and sewers. Other are less obvious, such as basement rooms, toilets, building voids, vats, deep excavations and open-topped tanks. A confined space may not necessarily be enclosed on all sides or may only become a confined space because of a change in the conditions inside.

The Site Manager shall ensure that all potential confined spaces are identified, clearly signed and site personnel warned of their locations.

Before entering a confined space a full and detailed risk assessment shall be carried out by a competent person and all relevant control measures implemented.

No work shall be carried out in a confined space without a permit to work issued by a competent person. Permits to work shall be issued using Form C073 Confined Space Permit.

Closed permits shall be stored in Site H&S File.

A rescue plan will be developed and implemented for any confined space working and appropriate rescue equipment made available.

Emergency arrangements shall be planned, recorded, communicated and implemented before any person enters a confined space. Emergency measures shall include a safe means of rescue from the confined space.

8.22. Control and disposal of waste

Where the site has sufficient space and it is practicable to do so waste segregation will take place.

On all sites plasterboard waste will be segregated.

Waste shall only be removed from site by licenced waste carriers.

When any waste is removed the Site Manager shall keep a record of:

- the identity of the waste carrier removing the waste;
- the waste carrier's registration number of the carrier;
- copy of, or reference to, the written description of the waste required by section 34 of the Environmental Protection Act 1990; and
- the site that the waste is being taken to and whether the operator of that site holds a permit under the Environmental Permitting (England and Wales) Regulations 2007 or is registered under those Regulations as a waste operation exempt from the need for such a permit.

8.23. Other significant safety risks

None identified.

9. ARRANGEMENTS FOR CONTROLLING SIGNIFICANT HEALTH RISKS

9.1. Asbestos

Details of all available asbestos surveys are recorded in Section 1.9 and 1.10 of this plan.

Copies of referenced information can be found in Site H&S File.

During the works

Should during the course of the works any material be identified that is suspected to contain asbestos and is not specifically detailed in the asbestos survey report, work that may present a risk of exposure to asbestos must stop, those who may be affected must be evacuated from the area, the Contract Administrator and the Principal Designer notified and the material tested by a competent organisation.

Were the material suspected to contain asbestos is damaged or may present a risk of exposure to asbestos the affected area shall be evacuated and where necessary sealed. Work shall not start in any area where materials suspected or known to contain asbestos may be disturbed or there is a risk of exposure to asbestos until appropriate tests have been carried out and the material in question has either been declared not to be asbestos, has been adequately protected or it has been removed by a competent and where appropriated licensed contractor.

Removal of Asbestos

Any asbestos removal shall be performed in compliance with the Control of Asbestos Regulations 2012 and associated Approved Codes of Practice. When required the Principal Contractor shall be responsible for ensuring that the asbestos removal contractor notifies the local officer of the Health and Safety Executive prior to any removal of asbestos.

Accidental Exposure

In the event of unforeseen or accidental exposure of asbestos material, the Principal Contractor shall immediately cover up and seal airtight the exposure with polythene sheeting or the like, remove all workpeople from the area of exposure and inform the Contract Administrator and Principal Designer.

Communication of Information

The results of any surveys or tests shall be reported to the Contract Administrator and a copy of survey and test reports provided to be Principal Designer for inclusion in the health and safety file.

9.2. Dealing with contaminated land

[Details and findings of any surveys and arrangements for dealing with contaminated land]

9.3. Hazardous and Dangerous Substances

Contractors will notify the Site Manager, in advance, of any hazardous or dangerous substances they intend to bring onto site. A written assessment of the hazards and subsequent risks associated with the substances, and the controls needed in order to eliminate, or reduce to an acceptable level, those risks, must be provided by the Site Manager. Any such assessments will be of a standard to comply with the requirement of the Control of Substances Hazardous to Health Regulations (COSHH)

All materials purchased and delivered to an Westfields site arrive with the appropriate “Safety Data Sheet”.

Site Managers are responsible for ensuring that suppliers/manufacturers Safety Data Sheets are obtained if they are not received with the delivery.

The Site Manager shall ensure that contractors produce suitable assessments of hazardous substances to be used during their operations on site.

Hazardous and Dangerous Substances Assessments shall be carried out using Form C022 Hazardous / Dangerous Substances Assessment Form.

Copies of all completed risk assessments shall be stored in Site H&S File, in the file of folder of the contractor who will be using the substance.

9.4. Control of Dust

Construction dust can seriously damage workers health and some types can eventually even kill. Regularly breathing these dusts over a long time can therefore cause life-changing lung diseases.

Construction dust is a general term used to describe different dusts that you may find on a construction site. There are three main types:

- silica dust – created when working on silica-containing materials like concrete, mortar and sandstone (also known as respirable crystalline silica or RCS);
- wood dust – created when working on softwood, hardwood and wood-based products like MDF and plywood;
- lower toxicity dusts – created when working on materials containing very little or no silica. The most common include gypsum (eg in plasterboard), limestone, marble and dolomite.

Dust control will be undertaken strictly in accordance with the guidance given in:

- CIS 36 Construction Dust http://www.hse.gov.uk/pubns/cis36.pdf; and
- CIS 69 Controlling construction dust with on-tool extraction http://www.hse.gov.uk/pubns/cis69.pdf

All operations where there is a risk of exposure to construction dust shall be assessed and where practicable avoided.

Where the operation cannot be avoided controls must be implemented that stop or reduce the dust.

Controlling the dust shall be undertaken either by suppression (usually with water) or extraction (the use of vacuums, on tool extraction etc.)

In addition to the controls described above operatives at risk of exposure shall wear face fitted respiratory protection equipment with a FFP 3 filter.

The site manager shall inspect and maintain a copy of face fit certificates for all operatives on site who need to wear RPE in Site H&S File - Section 6, in the file of folder of the contractor who will be using the substance.

The required controls for common high-risk tasks are given below.

Cutting concrete kerbs, blocks and paving with a cut-off saw

You should limiting the number of cuts during design/layout, use lower energy equipment like block splitters and get material cut off site and delivered.

Cut off saws will be used strictly in accordance with the guidance given in CIS 54 Dust control on cut-off saws used for stone or concrete cutting. http://www.hse.gov.uk/pubns/cis54.pdf

You must control the dust by using Water suppression and face fitted RPE with a FFP3 Filter

Chasing concrete and raking mortar

You should limiting the need for chasing at the design/layout stage or use a work method that limits or does not need chasing, like over-covering cables.

You must control the dust with on-tool extraction using an H or M Class extraction unit and operatives must wear face fitted RPE with a FFP3 Filter. You must consider powered RPE for longer duration work.

Cutting roofing tiles with a cut-off saw

You should hand cut natural/fibre cement slates and other tiles where possible, use ½ and 1½ tiles, correctly design and set out to avoid the need for cutting, minimise valleys and avoid using dry valleys.

You must control the dust with water suppression, a dedicated cutting area with scaffold board protection and operatives must wear face fitted RPE with a FFP3 Filter

Scabbling or grinding with hand-held tools

You should specifying architectural finishes that do not need scabbling. When scabbling or grinding is unavoidable you should use (ultra) high-pressure water jetting, chemical retarders and pressure washing or cast in proprietary joint formers, e.g. mesh formwork.

You must control the dust with, where possible, the use on-tool extraction using an H or M Class extraction unit. Operatives must wear face fitted with a RPE with a FFP3 Filter.

Short-duration drilling totalling 15–30 minutes with hand-held rotary power tools

You should limit the number of holes during design and planning and use direct fastening or screws.

You must control the dust with, where possible the use of equipment that stops dust getting into the air. The larger the holes the better this needs to be. Options range from:

- drilling through a dust ‘collector’ or using cordless extraction attached to the drill (for smaller drill bits) or
- on-tool extraction using an H or M Class extraction unit

Otherwise operatives must wear face fitted RPE with a FFP3 Filter.

Drilling holes with hand- held rotary power tools as a ‘main activity’

You should limit the number of holes during design and planning and use direct fastening or screws.

You must control the dust with, where possible on-tool extraction using an H or M Class extraction unit and operatives must wear face fitted RPE FFP3 Filter.

Dry coring

You should limit the number of holes during design and planning.

You must control the dust with on-tool extraction using an H or M Class extraction unit. For longer duration work (i.e. over 15–30 minutes accumulated time over the day) operatives will also need to wear Face fitted RPE with a FFP3 Filter.

Wet coring

You should limit the number of holes during design and planning.

You must control the dust with water suppression. For long periods of wet coring in enclosed spaces operatives will also need Face fitted RPE with a FFP3 Filter.

Using a hand-held breaker in enclosed spaces with limited ventilation

You should limit the amount of breaking during design and planning stage and where practicable use bursting, crushing, cutting, sawing or other techniques, remote controlled demolition or hydrodemolition.

You must control the dust with on-tool extraction using an H or M Class extraction unit and operatives will need Face fitted RPE with a FFP3 Filter.

Soft strip demolition

You should carefully plan the work to limit the number of people that need to be in the work area.

You must control the dust by screening off areas to prevent dust spreading, using water suppression or on-tool extraction for those tasks where it is possible. Operatives must wear face fitted RPE with an FFP3 Filter. You should consider powered RPE for longer duration work. Enclosed spaces may also need general mechanical ventilation to remove dusty air.

Removing small rubble, dust and debris

You should limit waste materials during design and planning. When planning operations you must consider where waste material is created and how frequently it needs removing.

You must control the dust by using use the correct dust controls when making rubble/debris. Only damp down and use a brush, shovel and bucket for minor/small 'one-off' amounts. For regular removal and site cleaning you must use:

- water spray for damping down;
- a rake, shovel and bucket / wheelbarrow to remove larger pieces;
- covered chutes and skips where needed;
- vacuum attachments fitted to an H or M Class extraction unit

Operatives must wear face fitted RPE with a FFP3 Filter.

Cutting wood with power tools

You should, where possible, use a less toxic wood and order pre-cut materials.

You must control the dust by using a dedicated cutting areas to minimise spread and on-tool extraction using an H or M Class extraction unit.

Longer duration work (ie over 15–30 minutes accumulated time over the day) Operatives will also need RPE suitable for the wood dust – particularly in enclosed spaces (Face fitted RPE with an FFP3 Filter).

Sanding wood with power tools

You should, where possible, use a less toxic wood and order 'pre-finished' materials

You must control the dust by using a dedicated cutting areas to minimise spread and on-tool extraction using an H or M Class extraction unit and operatives must wear face fitted RPE with an FFP3 Filter.

Sanding plasterboard jointing

You should, where possible, use other finishes and systems.

You must control the dust by using on-tool extraction using an H, M, or L Class extraction unit.

9.5. Control of Fumes

Work that produces noxious, harmful, flammable or explosive fumes shall be assessed before any work is carried out the controls communicated to those involved, resourced, and implemented.

Work that produces noxious, harmful, flammable or explosive fumes shall be undertaken:

- using either an alternative method that does not produce fumes, or
- off site in controlled conditions; or
- with suitable ventilation and/or fumes extraction facilities provided; and
- by operatives wearing appropriate respiratory protection equipment

9.6. Soil Drains and Wastes

When working on drainage systems operatives are at significant risk of contact with infected body fluids. There is therefore a significant risk of infection. Where there is a risk of operatives being splashed by the contents of the foul waste system they must:

- Cover all cuts and abrasions with a waterproof occlusive plaster or dressing;
- Always wash hands and any other part of the body that may be contaminated with soap and water after completing work;
- If accidental exposure to an infection is suspected contact their GP;
- Wear protective eyewear if splashing is likely;
- Wear fluid impermeable face mask;
- Wear fluid impermeable protective gauntlet;
- Wear disposable protective overalls if splashing is likely;
- Wash all contaminated clothing before next work shift;
- be immunised against Hepatitis B and Tuberculosis by their GP

9.7. Reducing vibration

All operations where there is a risk of exposure to vibration shall be assessed and where practicable eliminated at source.

Where it is not reasonably practicable to eliminate risk at source and an exposure action value is likely to be reached or exceeded, exposure shall be reduced to as low a level as is reasonably practicable by establishing and implementing a programme of organisational and technical measures which is appropriate to the activity including:

- look for ways of working that avoid or reduce the need to hold vibrating equipment or work-pieces;
- avoiding types of equipment with high vibration when there are suitable lower vibration alternatives;
- keeping an inventory of equipment and its vibration emission;
- maintaining equipment in accordance with its manufacturer's instructions;
- planning work schedules to minimise vibration exposures and make sure exposures are below the Exposure Limit Value [ELV];
- organising work to avoid uncomfortable postures and the need for high manual effort to grip, push or pull equipment;
- helping employees maintain good blood circulation, for example, by providing clothing to help them keep warm and dry.

The exposure action and limit values are a daily EAV of:

- 2.5 m/s2 A(8) that represents a clear risk requiring management; and
- 5 m/s2 A(8) that represents a high risk above which employees should not be exposed.

Hand Arm Vibration (HAV)

Hand Arm Vibration assessments must be for the tool being used and should be undertaken using the HSE's Hand-arm vibration exposure calculator which is free to download at http://www.hse.gov.uk/vibration/hav/calculator.htm .

Where the task involves HAV exposure that may exceed an exposure limit, exposures (trigger times) must be recorded using Form C053 HAV Exposure Record or a similar form provided by the contractor. Copies of all completed exposure records shall be stored in Site H&S File - Section 6, in the file of folder of the contractor who will be using the substance.

Pile Head Breaking

According to HSE enforcement guidance "Pile cap removal using hand operated breakers is not acceptable." http://www.hse.gov.uk/foi/internalops/og/og-00050-appendix-3.pdf Alternatives solutions eg pile head removal using bursters/crushers, Elliot method, Recipieux method or use hydraulic pile croppers and design pile spacing and pile re-bar for mechanised cropping must be used. A limited amount of dressing of the pile cap with hand held breakers may still be required is acceptable is managed in accordance with the HAV guidance set out above.

9.8. Reducing noise

Environmental Noise Control

The works shall, as far is reasonably practicable, be conducted with the minimum of noise.

Where possible work methods will be employed that will minimise disturbance to neighbouring properties and the buildings users. Where noisy work cannot be avoided, all necessary steps will be taken to limit the effect of the noise on others.

Unless prior consent has been given by the Local Authority under Section 61 of the Control of Pollution Act 1974 work, works that will produce noise that can be heard outside the site boundary, will be limited to the following hours.

Monday to Friday	8.00am to 6.00pm
Saturday	8.00am to 1.00pm

Hearing Protection

The Site Manager shall ensure:

- when either they or a contractor are planning an operation which is liable to expose any person to noise at or above a lower exposure action value that a suitable and sufficient assessment of the risks is undertaken by a competent person to determine the measures which need to be taken to meet the requirements of the Regulations;
- when risk is assessed that attention is paid to other contractors and members of the public who may also be affected by the noise;
- that action is taken to reduce the noise exposure that produces those risks;
- that those affected are provided with and wear hearing protection where noise exposure cannot be reduced enough by using other methods;
- the legal limits on noise exposure are not exceeded;

- that those undertaking the work are provided with information, instruction and training on noise risks and control;
- where any person entering an area on site is likely to be exposed to noise at or above an upper exposure action value that:
    - the area is designated a Hearing Protection Zone;
    - the area is demarcated and identified by means of the sign specified for the purpose of indicating that ear protection must be worn ; and
    - access to the area is restricted where this is practicable and the risk from exposure justifies it;
    - so far as is reasonably practicable that no person enters the Hearing Protection Zone unless they are wearing personal hearing protectors.

9.9. Manual handling

All manual handling operations that carry a risk of injury to the participants shall, wherever reasonably practicable, be avoided by:

- removing the need for the operation to be carried out;
- automating or mechanising the operation.

Where Manual Handling operations cannot be avoided, they shall be assessed by the site manager.

Manual Handling Assessments shall be carried out using C023 Manual Handling Assessment Form.

No person working for, or on behalf of Westfields shall carry out Manual Handling Operations that involve a risk of being injured, unless:

- they are competent and able to carry out the work;
- they have received Manual Handling Training from a person competent to give such training;
- the works have been subject to a Manual Handling Assessment, and a safe system of work documented and implemented that reduces the risk of injury to an absolute minimum;
- they have received information on the load to be carried.

Copies of all completed manual handling assessments shall be stored in Site H&S File, in the file of folder of the contractor who will be using the substance.

9.10. Work with ionising radiation

The Site Manager shall ensure that:

- guidance is obtained from the company safety advisors when reviewing or authorising the risk assessment and method statement for any work with ionising radiation; and
- all work with ionising radiation is undertaken in accordance with the guidance given in L121 Work with ionising radiation;

9.11. Exposure to UV radiation (from the sun)

During summer months induction shall include sun protection advice.

In addition tool box talks will be provided on the risk from UV radiation (from the sun) and the action that can be taken to reduce the risk.

Sunscreen will be made available in the welfare facilities at appropriate times.

Training shall encourage workers to:

- keep covered up during the summer months - especially at lunch time when the sun is at its hottest. (They can cover up with a long-sleeved shirt, and a hat with a brim or flap that protects the ears and neck.)
- use sunscreen of at least SPF (Sun Protection Factor) 15 on any part of the body they can't cover up and to apply it as directed on the product.
- take their breaks in the shade, if possible, rather than staying out in the sun.
- drink plenty of water to avoid dehydration.
- check their skin regularly for unusual spots or moles that change size, shape or colour and to seek medical advice promptly if they find anything that causes them concern.