



- 4.4.2 London Best Practice Guidance for dust control will be implemented, including the following measures:
 - Locating machinery and dust causing activities away from sensitive receptors;
 - Erecting solid barriers around the Site boundary and ensuring these are kept clean at all times;
 - Vehicle engines switched off when not in use i.e. no idling vehicles;
 - No site runoff of silty water or mud allowed;
 - Stockpiles kept for the shortest time possible and if necessary, the use of sprinklers and hoses for dampening of exposed soil and materials employed;
 - Providing an adequate supply of water on site where sprinklers and hoses are used for dust suppression;
 - Using enclosed chutes and covering skips where possible;
 - Observation of wind speed and direction prior to conducting dust-generating activities to assess the potential for dust nuisance to occur, minimising potentially dust-generating activities during periods when wind direction may carry dust into sensitive areas and minimising dust-generating operations during periods of high or gusty winds;
 - Stockpiles of soils and materials located as far as possible from sensitive properties, taking account of prevailing wind directions and seasonal variations in the prevailing wind;
 - Completed earthworks will be covered or vegetated as soon as is practicable;
 - Regular inspection of local highways and site boundaries to check for dust deposits (and removal if necessary);
 - Visual inspection of site perimeter to check for dust deposition (evident as soiling and marking) on vegetation, cars and other objects and taking remedial measures if necessary;
 - Use of dust-suppressed tools where practicable;
 - All construction plant and equipment maintained in good working order;
 - Supply adequate equipment on site to clean any dry spillages;
 - Use registered waste carriers to remove waste from site using properly sheeted or covered vehicles; and
 - No unauthorised burning of any material anywhere on site.
 - Construction vehicles will be kept clean and sheeted when on public highways. Large-scale vehicle movements will be timed to avoid peak hours on the local road network if possible.

Monitoring

4.4.3 Liaison with LBRuT be maintained throughout the construction process, and any incidents which lead to excessive elevation of dust deposition and/or PM_{10}



concentrations at neighbouring sensitive receptors are reported to the Environmental Health Department. If complaints are received from local residents, these will be documented in a diary or log held on site by the Site Manager. A nominated member of the construction team (e.g. Site Manager) will also act as a point of contact for residents who may be concerned about elevated deposition of dust.

4.5 **GROUND CONDITIONS**

Mitigation Measures

Soil Chemical Contamination

- 4.5.1 The preferred mitigation measure for excavated contaminated material is treatment off site prior to the return of the recovered material for reuse on site. Contaminated material is defined as that which contains contaminants at levels above the appropriate assessment criteria. Such material is classified as waste by virtue of its contamination. It therefore cannot be re-deposited on site, nor used in construction on site or elsewhere (except under the provisions of the Environmental Permitting (England and Wales) Regulations 2010). The suitability of landfills to accept such material will be based on its classification according to the Landfill Regulations and the Environment Agency Waste Acceptance Criteria. Preliminary analysis indicates that while some contaminated excavated material could be disposed of at landfill permitted to accept inert waste, some may require disposal at non-hazardous and hazardous waste sites. Further Waste Acceptance Criteria testing of materials designated for disposal off site will be undertaken once works commence on the Site.
- 4.5.2 Areas affected by soil chemical contamination at levels above the relevant guideline values for the type of end use will require remediation. However, in view of the contamination present at several locations within the residential component of the site (**Figure 4.4**), associated mainly with made ground, all garden areas within the residential area will be remediated as a precaution by removing the made ground to a depth of at least 0.75 m and replacing it with clean sub-soil and topsoil from certified sources.
- 4.5.3 Wherever possible, contaminated soil that must be removed from site will be sent to an off-site treatment centre rather than to landfill. The quantities of such material likely to arise on the Site are so small that on site treatment is not a practical or economic possibility.
- 4.5.4 Potential impacts of contaminants in soil on groundwater and surface waters during construction will be mitigated by use of containment and prevention of run-off from stockpiled excavated contaminated materials entering controlled waters.





- 4.5.5 The above mitigation is required only where there is an ongoing risk of direct exposure to contaminants. Where contaminated material is to remain undisturbed on site potential health impacts will be mitigated where required by containment beneath a capping layer. This situation would apply where potentially contaminated material is situated under roads or car parks.
- 4.5.6 Mitigation of health impacts of contaminants in soil on construction workers will be through a safe system of work and if required, the use of appropriate protection (Personal Protective Equipment). The principal risk from PAHs arises from direct skin contact, although there is also a risk of exposure via inhalation. Therefore protection will include face masks and gloves for any personnel coming into direct contact with the material. In addition, where ground works are to take place in areas identified to be at risk of contamination there will be restrictions on access and measures will be taken to control dust during the works, thereby mitigating the inhalation risks.

Ground Gases

- 4.5.7 Since the HSE Occupational Exposure limits for carbon dioxide may be exceeded, a safe system of work for any personnel entering enclosed spaces or deep excavations will be implemented. This will involve risk assessments, gas testing prior to entry and provision of breathing equipment where appropriate.
- 4.5.8 According to the CIRIA guidance in CIRIA report C665, the appropriate mitigation for office/commercial/industrial development in areas affected by gas levels equivalent to Characteristic Situation 2 would be provision of either a 1,200 g damp proof membrane (DPM) with a cast *in situ* reinforced concrete slab or a 2,000 g DPM with a beam and block or pre-cast concrete slab, with possible additional venting.
- 4.5.9 The equivalent mitigation for the residential development will require either a reinforced concrete floor slab cast *in situ*, with at least a 1,200 g DPM and underfloor venting, or beam and block pre-cast concrete and a 2,000 DPM with underfloor venting.
- 4.5.10 All joints and penetrations will also be sealed against ingress of gas in both cases.
- 4.5.11 All of the above mitigation measures will be incorporated into the CEMP.

Ground Stability

4.5.12 Mitigation for ground stability will be included through specification for resistant materials.



Monitoring

- 4.5.13 A watching brief on contaminated land will be undertaken by members of the contractor's site team during site preparation and excavation in order to identify any unforeseen contamination that may arise during the works which was not identified as part of the site investigation work done to date.
- 4.5.14 Further testing of soil contaminants for the purposes of selecting the most appropriate treatment/disposal site will be required. Some preliminary testing was undertaken by Soiltechnics and this is provided in **Appendix 11.3** of the ES. This will require updating.
- 4.5.15 The ground gas risk assessment is based on limited monitoring and will be updated based on further *in situ* gas monitoring.

4.6 WASTE

Mitigation Measures

- 4.6.1 Mitigation measures to minimise environmental impacts from the storage, transportation and disposal of wastes will include:
 - Careful location of stockpiles and other storage areas;
 - Segregation of waste streams to maximise opportunities for reuse and recycling;
 - Use of on-site recycling plant, such as concrete crushing;
 - Use of good practice in the design of waste storage areas and the use of suitable waste containers;
 - Use of sheeting, screening, damping and seeding of stockpiles where appropriate and practicable;
 - Control and treatment of runoff from soil and waste soil stockpiles;
 - Minimising storage periods;
 - Minimising haulage distances; and
 - Sheeting of vehicles.
- 4.6.2 Such measures would help to mitigate the potential impacts remaining after waste minimisation, recycling and reuse have been optimised.
- 4.6.3 Details of the waste management and mitigation measures will be provided in the contractor's SWMP (see Section 3.17).

Monitoring

4.6.4 Quantities of waste leaving the site will be monitored and recorded under the SWMP.



4.7 WATER RESOURCES AND FLOOD RISK

Mitigation Measures

- 4.7.1 All site works will be carried out in accordance with best environmental working practices, such as Environment Agency Pollution Prevention Guidelines. Generic pollution control measures are also included in the outline Construction Logistics Plan (**Appendix 6.3** of the ES).
- 4.7.2 Measures to reduce the possibility of disturbing or damaging the existing drainage systems and water supply network will include:
 - Utilisation of signs to warn of the presence of utility infrastructure;
 - Immediate repair of any damage to the drainage network; and
 - Preparation of an emergency response plan to ensure that spillages and leakages are immediately contained.
- 4.7.3 Water saving measures will be adopted where possible, thereby reducing the magnitude of effect on the water supply network; including:
 - Selection and specification of equipment to reduce the amount of water required;
 - Implementation of staff-based initiatives such as turning off taps, plant and equipment when not in use both on-site and within Site offices; and
 - Use of a grey water recycling water systems where possible such as wheel washes.
- 4.7.4 Mitigation measures required in relation to flood risk and surface water drainage include:
 - Installation of sustainable drainage systems at the commencement of each construction phase, as recommended in the outline Sustainable Drainage Assessment;
 - Protection of any new SuDS features for long term operation and in particular from being compromised by demolition and construction activities in other construction phases;
 - Collection and diversion of surface water through temporary or permanent SuDs to prevent surface water flooding during each construction phase;
 - Provision of a temporary bund along the southern boundary of the College playing field development zone to prevent flooding during construction and to avoid any silt and sediment transfer into the River Crane; and
 - All necessary measures, actions and permits to deal with dewatering of excavation during construction (if required).



- 4.7.5 Additional mitigation measures to control site activities with potential to affect hydrology, flood risk, water quality and hydromorphology of surface waters will include:
 - Application of standard good practice such as those published by the Environment Agency A (e.g. Pollution Prevention Guidance series) or CIRIA publications;
 - Development of a Water Management Plan to accompany the CEMP, which describes the water pollution management measures and controls that the contractor will implement during the construction process, and details of all drainage systems including flow direction and outlet, pollution sources, methods of pollution prevention and potential receptors (e.g. watercourses and ground);
 - Colour coding of clean and foul drainage to minimise the risk of pollution;
 - General site controls including measures for bootwash, vehicle and plant cleaning, spill kits and storage of solvents and chemicals on site;
 - The storage of oils and fuels away from all watercourses with refuelling carried out in a designated bunded area. Any fuel oil tanks will be located within a secondary containment system and / or bunded, with a minimum bund capacity of 110% of the capacity of the tank. All tanks, pipework bunds and pollution prevention equipment will be checked regularly (including for build-up of any liquids in bunds);
 - Provision of a low bund around tanker delivery hardstandings, within which tankers can park whilst offloading fuel. The hard standing will be large enough to accommodate the full length of the tanker. Installation of a system to prevent any fuel spillages discharging into the drainage system, without suitable containment or treatment;
 - Daily inspection of the Site works to identify any potential run-off from the Site works. The watercourses adjacent to the Site will be protected to ensure that no runoff from the works can enter them. Where risks are identified, a range of settlement options and barriers such as settlement lagoons and French drains will be deployed to prevent silt and fine sediments from entering watercourses;
 - Prevention of surface runoff onto sediment generating surfaces such as excavation areas or exposed ground, by utilising the existing drainage system on other parts of the Site, by using or creating temporary drainage systems or cut-off ditches to divert water away, thus minimising the need for settlement and filtration;
 - Minimisation of areas of exposed earthworks and disturbed/compacted and loose soil, and covering of exposed ground and stockpiles, for example with geotextiles, to prevent rainwater generating sediment laden runoff. Stockpile sites will whenever possible be located away from the site boundary, sensitive

receptors and surface drains, and will have a self-contained drainage system to prevent untreated water release;

- Where groundwater is encountered in excavations, use of all necessary temporary works to ensure this does not cause surface water flooding. Appropriate measures will be adopted to undertake dewatering at each phase of construction. No discharge of any kind to watercourses or sewers will be permitted without the prior written consent of the appropriate authority and compliance with all their requirements;
- Provision of all necessary measures, including suitable pumps, machinery and equipment for temporary works, to enable surface water runoff to be controlled in both dry weather and wet weather conditions, and prevent flooding;
- Plant and road controls to prevent silt pollution, including wash out facilities for concrete wagons with adequate pollution prevention measures. Regular inspections will be carried out to ensure access roads edges and pathways are swept and damped down to prevent contaminant transfer. Regular removal of dust and mud from Site roads, plants and vehicles;
- Clear labelling of tanks describing their contents. Prompt removal of empty containers from the Site with appropriate disposal;
- Mixing and storage of cement in a contained area away from pathways, receptors and surface watercourses. Use of appropriate rapid setting concrete near drains and watercourses. Washing of concrete mixing equipment or lorries will be undertaken with cleaning equipment that uses a re-circulating system to avoid discharge of contaminated water;
- Provision and maintenance of spillage kits, typically containing oil-absorbent granules, floating booms, absorbent mats, polythene sheeting and polythene sacks, on Site with suitably trained persons appointed to deal with any spillages which may occur. Any spillage of diesel or petrol will be confined and removed as quickly as possible. All staff should receive spill procedure training at induction;
- Storage of spill kits should be stored in marked bag or wheelie bins in wellsignposted locations. Spill kits will be located adjacent to the fuel storage area, waste compound and fuel bowser. Buckets of sand, earth, straw bales or rags will also be provided for cleaning up small spillages; and
- Development of a contingency plan for the management of pollution incidents before construction commences.

Monitoring

4.7.6 Regular visual inspection of River Crane and the Duke of Northumberland River should be undertaken when works are in proximity, and water quality sampling undertaken in the event of any accidental discharge to surface waters.



4.8 ECOLOGY

Mitigation Measures

- 4.8.1 The working area should be clearly demarcated with barrier fencing to avoid the encroachment of works, both vehicular and contractor, into sensitive semi-natural habitats adjacent to the development site. Root protection zones for retained trees within or immediately adjacent to the Site should be demarcated to ensure construction activities to not result in severance or damage of significant tree roots. No dig construction methods will be used near root zones of retained trees, for example on the College playing fields on Craneford Way East for the installation of the artificial pitch surface.
- 4.8.2 All site works should be carried out in accordance with best environmental working practices, such as those described by the Environment Agency or in CIRIA publications. The site induction and toolbox talks should be held with contractors to ensure they are fully aware of their responsibilities with respect to nature conservation issues, including the nature and location of key sensitive receptors and how the works could affect them.

Vegetation Clearance

- 4.8.3 The removal of trees and scrub vegetation capable of supporting breeding birds will, where possible, be undertaken outside the breeding bird season (March to August inclusive). If this is not possible, then all vegetation should be checked by a suitably qualified ecologist prior to removal to confirm the absence of breeding birds. In the event that breeding birds are present, the vegetation will need to remain in place with an exclusion zone around the nest until the young have fledged (the typical breeding season is between March and August, inclusive).
- 4.8.4 The removal of scrub and thick shrub vegetation capable of concealing a hedgehog nest should be undertaken in a staged manner, avoiding the breeding season between May and October where possible. Vegetation should be cleared in a phased approach, removing vegetation to approximately 150mm from the ground. This will allow for the identification of possible nests prior to clearance to the ground. In the event a nest is discovered, works should stop and further ecological advice sought.
- 4.8.5 In order to avoid causing wall cotoneaster to spread, a management plan will be developed detailing how the arisings from the removal of the bushes, and the brash, roots and soil will be controlled and either effectively managed on-site or transported off-site for disposal.



Lighting Effects on Bats

4.8.6 Measures to minimise potential habitat fragmentation and deterioration impacts associated with inappropriate lighting are detailed in Section 3.11.

Monitoring

4.8.7 No specific monitoring requirements have been identified.

4.9 TOWNSCAPE AND VISUAL AMENITY

Mitigation Measures

- 4.9.1 The following measures will be incorporated to minimise townscape and visual effects:
 - Tree protection measures for trees to be retained within and adjoining the site including no dig zones, protective fencing and construction exclusion zones;
 - The phasing of demolition from the inside of the site outwards so peripheral buildings protect existing residents for part of the demolition works;
 - The phasing of the construction so that the first phase of development will screen the construction of later phases from residents on Egerton Road;
 - Erection of solid hoardings to the site perimeter;
 - Location of site offices outside the area designated as Metropolitan Open Land, i.e. not on the College playing fields on Craneford Way East, where possible; and
 - Location of site offices and storage to minimise the effects on adjacent residents.

Monitoring

4.9.2 No specific monitoring requirements have been identified.

4.10 CULTURAL HERITAGE

Mitigation Measures

4.10.1 Further evaluation of the archaeological potential of the site may be required in order to define the nature of the archaeological resource and facilitate the production of a mitigation strategy intended to remove or reduce any potential environmental effects. This will require discussion with Historic England during the determination period for the OPA. Potential mitigation measures will include excavation and recording of any significant archaeological deposits present or the implementation of an archaeological monitoring action (Watching Brief) during intrusive construction activities.



Monitoring

4.10.2 Subject to discussion with Historic England, a watching brief may required to be maintained during intrusive construction activities.

4.11 SOCIO-ECONOMICS

Mitigation Measures

- 4.11.1 The development programme has been formulated to minimise disruption for on-site activities and users and for local residents through a number of measures. In addition the measures detailed above which will minimise disruption from construction traffic and noise, the following additional measures will be adhered to:
- 4.11.2 Upgrading of the existing College playing fields on Craneford Way East will occur outside term time. This will allow for the release of the existing pitch adjacent to the A316 for new development and minimise disruption to the availability of sport and recreation facilities by ensuring that there are two fully operational grass pitches available during the construction phase.
- 4.11.3 Existing pedestrian routes and footpaths crossing will be maintained at all times during construction works.
- 4.11.4 Works on Langhorn Drive will be undertaken in sections to enable access for Harlequin FC and College users. To minimise the effects on these users, works will take place during the summer period which is outside term time and during the rugby off season.

Monitoring

4.11.5 No specific monitoring requirements have been identified.



Appendix 6.2: Outline Construction Management Plan

Richmond Education and Enterprise Campus

Richmond upon Thames College, Egerton Road, Twickenham TW2 7SJ OUTLINE CONSTRUCTION METHOD STATEMENT

Rev.01 June 2015



Contents

CONSTRUCTION MANAGEMENT PLAN Rev 0 - 3 Project Description 3 SITE LOGISTICS & PHASING 5 Working Hours 5 Area Quality Management Area 7 How Personal Get to the Site 7 Cycle Links 7 Parking 7 **Rail Services 7 Bus Services 7** Planned & Scheduled Deliveries 6 Scaffolding 7 Materials Handling 7 Mobile Cranes/Self Erecting Cranes 7 Material Storage & Distribution 8 The Fire Safe Plan 8 **Tree Protection 8 Environmental Materials Policy 8 Our Strategic Objectives 9** Waste Removal and the Demolition Protocol 9 Waste Actions 10 **Temporary Services 10** Personal Access & Security 11 Smoking 11 Health & Safety 11 **Behavioural Safety 11 Considerate Constructor Scheme 11** MINIMISING NUISANCE DURING CONSTRUCTION WORKS 13 External areas 13 Noise monitoring and control 13 Air Quality Management Area assessment & mitigation measures 14 Stockpiles & Storage Mounds 14 Cutting, grinding & sawing 14 Waste disposal 14 Dealing with spillage 15 Welding and soldering 15 Tarmac Laying 15 Plant Vehicles & not road mobile machinery 15 Fitting out 16 Planning and sanding 16 Protection of the finishes 16 **Temporary Works 17** Achieving Quality in Key Areas 17 Appendices 19

1.0 CONSTRUCTION MANAGEMENT PLAN (METHOD STATEMENT) Introduction and Description:

1.1 Richmond upon Thames College, Haymarket Media Group, Harlequins, Clarendon School, Waldegrave School, Richmond Council and Achieving for Children are working together to create an Education and Enterprise Campus on the College site on Egerton Road in Twickenham. The ambition is to redevelop the site to include new college buildings, a new secondary school, purpose-built accommodation for Clarendon Special Needs School, and Haymarket's new "tech hub" and digital media incubator – all on a single Campus. In addition to this residential accommodation will also be developed.

The site fronts onto the A316 and is adjacent to Harlequin Football Club . It is also bound by residential properties, playing fields and a local authority depot within London Borough of Richmond.

This statement sets out proposed measures to ensure safety and minimise disruption to local residents, businesses, the general public and the workforce employed during the construction and demolition process.

The site logistics and management strategy including open and on-going communication with all stakeholders including site neighbours, will be critical to the success of the project noting the interface of our proposed works within a live / occupational environment.

Phasing of Works: (Please read in conjunction with our proposing phasing and sequencing layouts – Appendix 001 and our Programme Appendix 002)

1.2 Enabling Works - Phasing 1a + 1b:

This consists of creation of a haul road and preparation of access off Langhorn Drive and Egerton Road, internal refurbishment and demolition of a number of existing buildings. Also carry out pitch markings located on playing field.

1.3 Phase 1c:

This represents a larger phase of the overall project and includes the construction of the main college building, Secondary and Special School. Removal of hardstanding's and seeding to playing fields.

1.4 Phase 1d + 1e:

Phased move of college departments and facilities into the new college building including provision of temporary changing rooms. This is followed by the demolition of the remaining elements of Blk A Refectory, and E Blk together with outbuildings and pumping station.

1.5 Phase 2a:

Construction of Sports and Stem building and completion of schools external area. Construction of 3G Pitched during summer holiday and upgrade of Marsh Lane Crossing point.

1.6 Phase 2b:

Phase 1 of residential development.

1.7 Phase 2c + 2d:

Decant into completed Sports and Stem Building followed by the demolition of the existing sports building and removal of temporary changing rooms. Demolition of remaining college workshops / teaching buildings.

1.8 Phase 3a:

Construction of Tech Hub, amendments to the A316 junction, realignment of Langhorn Drive and Marsh Farm Lane access to Stem and Sports Building. Provision of MUGA and Sports Car Park.

1.9 Phase 3b + 3c:

Construction of the 2nd Phase of residential development. Marsh Farm Lane (playing fields to Sports Centre)

1.6 Demolition and new Construction Activities:

These represent the largest part of the project and consist of the following main elements

- Decommissioning of existing college facilities, including making safe services
- Refurbishment & Demolition Asbestos Surveys
- Asbestos Removal where applicable.
- Demolition including the onsite crushing of concrete and brick for reuse in new substructures and hard landscaped circulation areas (subject to correct grading)
- Possible Piling (dependent upon existing ground conditions and proposed design), consider the use of quite techniques such as CFA Piling.
- RC Sub and Superstructures (design tbc)
- Structural Steel Frames (design tbc)
- External Envelope consisting of various types of Cladding including Curtain walling, Rainscreen, Brickwork, Render etc. (tbc)
- Roofing including the possibility Photovoltaic Panels (tbc)
- Fit Out internally consisting of Building Services, Blockwork, Drylining, Tiling, Ceilings, Floor and Wall Finishes, FFE etc.
- Externally planting / Landscaping and final road and car park surfacing and white lining.

1.7 Decommissioning, Asbestos Surveys and Removal:

These activities will be undertaken inside the existing buildings in a controlled manner using only licenced and approved specialists who will also serve the relevant notices to HSE if applicable.

1.8 Demolition

Once the buildings has been cleared (and tested) of asbestos where applicable, demolition will commence subject to notices being in place; with internal soft strip which will be carried out generally using hand tools, scaffolding and mobile towers.

Materials will be sorted and separated into skips and removed for recycling wherever possible.

Main demolition will be carried out using high reach 360deg back acting machines utilising a variety of breakers, grab shears and other attachments to carefully deconstruct the existing structure and brickwork.

This material will be crusher and graded where possible for reuse in the new scheme. It is important to note we will only use approved and NFDC Member Contractors who understand noise and dust suppression requirements and have the type of equipment which operates within the limits. They will use Dustbusters and other damping / dust suppression specialist equipment.

All demolition activities will be carried out using methods which minimise dust and noise with regard to the impact on the local community.

Close liaison with REEC, Richmond College, Richmond Borough and site neighbours will also take place prior to commencement of any works.

1.9 Piling

The demolition contractor will if necessary (see Section 1.6) provide an engineered piling mat at levels to suit the new building; CFA Rigs will then operate constructing the first element of the substructures.

1.10 RC Frame & Substructures

Once Piling has sufficiently advanced construction of RC Sub and Superstructures will commence, main plant will include cranes, 360deg Machines, Dumpers, and Formwork etc.

1.11 Structural Steel frame

Once the RC Structures are complete to Steel Frame erection will be undertaken using craneage and cherry pickers for access to beam and column connections.

1.12 Building Envelope (Roofing and Wall Cladding Systems)

Safety netting, perimeter guard rails and Haki Stair access will be put in place with roofing materials loaded out by mobile crane in bundles evenly distributed over the roofs.

There are likely to be a number of cladding types which will be constructed using a combination of scaffolding, scissors lifts and cherry pickers.

1.13 Fit – Out (Internally)

This consists broadly of Blockwork, Drylining, Building Services, Tiling, Carpentry, Wall Floor and Ceiling Finishes and will be access via scaffolding, scissor lifts and mobile towers. Delivery will be planned and agreed in advance in order to minimise the impact on site and the local area.

2.0 SITE LOGISTICS

2.1 Working Hours – Subject to Planning Decision Conditions (tbc)

Nominally permissible construction working hours will be: Monday to Friday from (8:00-18:00),

Saturday from (8:00-13:00)

No working Sundays and Bank Holidays

If a specific requirement arises to work outside this then we will contact Richmond EHO in order to discuss and confirm their agreement (e.g. Plant breakdown or power switchover) Due to the location of the site next door to 'The Stoop' and close to Twickenham Rugby Stadium no deliveries and works will be undertaken on match days.

2.2 Site Set Up & Accommodation:

The Site entrances will be controlled at all times and ply hoarding will be used, all other boundaries will be fenced (all in accordance with HSE requirements) Accommodation will consist of modular site accommodation.

Note: All hoarding and fencing will be inspected on a daily basis by our site management to ensure security is maintained and also that these remain in a presentable condition at all times.

Note: External Illumination of the Site to walkways and working areas will be controlled and located such that neighbours are not inconvenienced outside working hours. Time clocks and PIR sensors will be used in addition to site management checking at the end of each working day.

Note: Mechanical Wheel Washing Equipment will be set up close to the site entrances and will be manned; should a breakdown or incident occur we will also have a call off order with a road sweeping company who can supply plant at short notice in the unlikely event this is required.

Note: Dust suppression measures; only plant modern demolition plant equipped with water spray nozzles located on the back acting booms will be used. Stockpiles will also be damped down as necessary. Dustbuster spray equipment will also be used. We will also carry out air quality monitoring see details below.

Note: Planned and Scheduled Deliveries:

Site Management will hold a weekly delivery coordination meeting which will plan out deliveries over a rolling fortnightly period in order to avoid congestion the agreed information will be entered into a site schedule and issued to all subcontractors. It will also be clearly displayed at the Site Gatehouse and Site Office.

Traffic Marshall / Gateman

Will be located in the gatehouse in order to ensure vehicle movements in Langhorn Drive are safely marshalled in and out of site.

We have identified a Holding Area (see enclosed map) located approx. 10mins from site where vehicles of all sizes can park. It will be made a condition of contract that the Logistics Foreman will be contacted by phone and / or text whereby he will advise as to whether the vehicle will need to wait or can proceed directly to site.

Should a driver fail to comply he will be sent away and called back once the onsite unloading area is free. If this happens again the vehicle will be sent away and delivery not accepted on that day. Given that this is a condition of their supply order this will act as a deterrent. However in the first instance positive cooperation will be encouraged.

On limited occasions there will be the requirement to deliver and remove large specialist plant and equipment. Any large vehicles will be subject to police approval and will be required to be undertaken outside normal hours in order to alleviate traffic issues. In these instances advance notice will be given and we will liaise with the site neighbours (eg. Letter drop) and Richmond's EHO to ensure any inconvenience is kept to a minimum.

Loading and Unloading:

There will be designated areas on site inside the access gates which will be prepared and will be used as a wheel wash area. It will be determined in advance which vehicles are self-unload (Hiab or similar) or require unloading by Forklift or Crane. Likewise Skip Lorries will use an adjacent area on site.

Initially during demolition and bulk excavation there will be high frequency of muckaway loads (covered trucks only) by vehicles on 'turn around', this will be loaded on site and controlled by the Logistics Foreman / Traffic Marshall.

2.3 Site Personnel Travel

There will be No General Parking on site and personal will be encouraged to use public Transport. Twickenham Railway Station is located within 10 - 15 minutes from site on foot. All contractors must be mindful of the need to work in harmony with the local community and observe local traffic restrictions which must be adhered to at all times.

How Personal Get to the Site

Cycle Links & Trains

The Richmond cycle map demonstrates that project is located close to the local cycle network which conveniently links to all the nearby railways station (Twickenham. Strawberry Hill and Whitton) well as the wider local area generally.

Twickenham station (Southwest Trains) links to Clapham Junction and Waterloo as main hubs.

2.4 Air Quality Management Area assessment & mitigation measures.

The development is within an Air Quality Management Area and is designated as a low to medium risk development.

Suitable measures are to be taken to mitigate the impacts of dust and fine particles generated by the construction in order to comply with the 'Air Quality Action Plan' (to be developed by the Principle Contractor) and are covered under the 'Minimising Nuisance during construction works' section).

2.5 Explosive Ordinance Threat Assessment

Explosive ordnance threat assessment will be carried out to assess the risk of encountering unexploded ordnance during the proposed works on site.

From our experience on similar projects, if ordinance is likely to be present the following risk mitigation measures will be adopted:

Site Specific Explosive Ordnance Safety and Awareness Briefings are given to all personnel conducting intrusive works.

The Provision of Unexploded Ordnance Site Safety Instructions to be provided for the site. A ground penetrating radar survey will also take place, to identify any other services or obstructions within the ground which may require parking up offsite to avoid congestion within the roads adjacent to the site.

2.6 Scaffolding

The Principle Contractor will be providing common access scaffolding to the buildings, to provide safe access to the different sub-contractors to perform their work in accordance with TG20:13.

2.7 Materials Handling

Mobile Cranes/Self Erecting Cranes/Tower Cranes

Cranes will be required to erect the structural elements. They will also be used to distribute materials and position large items of Plant, bulk materials and waste removal

2.8 Material Storage & Distribution

Distribution of material is the responsibility of the subcontractor. Due cognisance must be paid to the environment in which the works are being carried out. Storage will only be permitted within the allotted area for each sub-contractor. Storage areas allocated. The use of mobile racking systems for pipe work, electrical containment, loose long length

items etc. will be actively pursued.

The storage of flammable materials (e.g. gas containers) will be outside the building using suitable cages.

All materials delivered to site must be unloaded & where possible taken to the agreed storage locations.

Wherever possible, materials should be delivered on pallets to facilitate distribution by use of pallet trucks, however pallets must be collected and returned when they have been finished with and then removed form site.

The minimum requirement for storage of flammable fuels (diesel etc.) will be within a covered, bunded bowser. Where petrol is required this should be contained in a steel jerry can with the maximum of 5 gallons allowed to be on site at any one time. The container

should be clearly labelled with its contents, highly flammable signage, and a fire proof cabinet should be provided for it to be stored in when not in use.

2.9 The Fire Safe Plan

The Fire Plan will be developed in accordance with Fire Prevention on Construction Sites 8th ed, The Joint Code of Practice on the protection from fire of construction sites and buildings undergoing renovation.

2.10 Tree Protection

Damage to trees during the construction phase should be prevented by the erection of the protective fencing forming Tree protection zones. All personnel should be made aware of the limitations that apply to these.

It is anticipated that the arboriculturalist will produce a report prior to commencement scheduling trees requiring protection including their root zones.

Any defects or damage to trees during construction should be brought to the attention of the Arboriculturalist immediately, in order that any remedial works that may be required can be arranged.

A protective fence will be erected prior to the commencement of any site works. Protective fences must ideally be constructed in line with BS 5837: 2005 and be fit for the purpose of excluding any construction activity. Any other fence/barrier used must be fit for the purpose. Should there be a requirement for excavation, haul roads or other works, methods of working will be agreed with the arboriculturalist eg.the use of air spades and cellweb for vehicle and pedestrian routes.

2.11 Environmental Materials Policy

The Principal Contractor accepts its duty to reduce the adverse, and increase the beneficial, environmental impacts of our purchasing and supply of materials in recognition and support of:

- The UK Government's Strategy for Sustainable Construction
- Regional Government Initiatives, such as Scotland's Zero Waste Plan
- LBRuT requirements
- The key and influential role of purchasing and supply activities in environmentalmanagement
- Our Group commitment to WRAP's Halving Waste to Landfill initiative.

Our aim is to ensure that the goods, works and services we purchase under BREEAM Compliant projects are manufactured, delivered, used and have the potential to be managed at end-of-life in a safe and socially and environmentally responsible manner.

Associated risks will be appropriately managed through our Business Processes including Purchasing, and in accordance with our Environmental and Quality Management Systems which are certified respectively to BS EN ISO 14001:2004 and BS EN ISO 9001:2008.

2.12 Our Strategic Objectives

Where possible we shall implement the following strategic objectives:

• Use of local materials

- Use of responsibly sourced materials (demonstrated through auditable third party certification schemes including BES 6001:2008; Environmental Management System certification; Chain of Custody certification)
- Reuse of materials
- Use of materials with a high recycled content
- Waste minimisation through design, procurement and on-site management
- Identification and implementation of opportunities for recycling
- Use of non-toxic materials and refrigerants with a low global warming potential
- Use of materials with a low embodied impact
- Use of durable materials
- All timber to be legally sourced (as defined in the CPET 2nd edition report on UK Government Timber Procurement Policy)
- Reused timber to have originated from legal sources initially

2.13 Waste Removal and the Demolition Protocol

Have formulated a site waste management plan; the principles contained within the site waste management plan are to be followed at all times.

The current target for Waste diverted from landfill (excluding soils & stones) is 96%. The Principal Contractor will provide segregated waste skips for use by all subcontractors for, Metal, Timber, Plasterboard as well as general / municipal waste as well as other relevant waste streams. Wheelie bins will be required within the building for ease of transportation & segregation. All skips will be covered when possible & at least overnight. It is the responsibility of each sub-contractor to segregate their waste into the appropriate bins. All sub-contractors will be responsible for maintaining the cleanliness of their work areas and disposal of their waste (to the designated skips on the ground floor) as it is generated and not when it has become a safety hazard, or impeding other works.

All of the demolition works will be carried out by others after the construction works commencing on site. The demolition works will have followed the demolition protocol set up by the ICE (Institution of Civil Engineers), and any temporary works independently checked by a structural eng.

This protocol provides best practice on aspects such as building audits and use of recycled materials to be reused on site or elsewhere. The demolition crush material will be certified 6F or similar enable re-use on site. Where possible targets set within the protocol will be incorporated into the site waste management plan.

Disposal of hazardous or specialist waste (for example fluorescent tubes) is the responsibility of the subcontractor. The subcontractor must comply with the Principal Contractors Environmental policy.

The subcontractor is to provide suitable means to transport the waste to the skips. The site will be registered with the environment agency as a waste producer. Areas on site will be set aside for recycling various materials for reuse on site, i.e. timber, metals

2.14 Waste Actions

Type of Waste Action Material / Waste Action Taken Action owner Waste Prevention Inert - mixture of concrete, bricks, tiles etc.

Demo contractor to crush material under the WRAP QP Waste Management & Recovery Mixed C&D waste Ensure that all waste is recycled above 80% Waste Prevention Inert - Soil & stones where possible designs will balance cut/fill quantities Design team Waste Management and Recovery Action Mixed C&D waste Where possible designs will use PFA and GGBS as cement replacement materials Where possible designs will use plastic and/or metal components such as pipes, with high recycled content Design team Where possible designs will use recycled aggregates and/or HBM for working platforms/piling mat and Recovery Action Inert - mixture of concrete, bricks, tiles etc. Demolition contractor to crush material under the WRAP Quality Protocol for re use on site. **RC Frame Contractor** Waste Management and Recovery Action Timber off cuts & struck formwork Timber set aside in a designated storage area for potential re-use

Waste Management and Recovery Action

Large plasterboard off cuts

Plasterboard set aside in a designated storage area for potential re-use

2.15 Temporary Services

110v power transformers will be provided at each level. The sub-contractor must provide a suitable means of cabling to the work face without causing a trip hazard, by the use of hooks or other means.

As the works progress the 10Kva temporary transformers will need to be removed to allow the works to progress, the subcontractor will be responsible for providing suitable step down transformers (240/110v) as necessary.

Background / Safety Lighting will be provided throughout the building, including emergency lighting where necessary. Flood lighting to the external site entrance will be provided for safety and security. However consideration will be given to the effect of this lighting on the local environment. Internal & External Task lighting is to be provided by the sub-contractor. Sub-contractors must provide their own task lighting to a level necessary to achieve the requirement to minimise off site spillage.

The lights provided by sub-contractors must conform to the Principal Contractors fire safety requirements, including no halogen lighting.

Temporary water points will be located at strategic points around the site.

2.16 Personal Access & Security

A 2.4m high hoarding will be erected around the entrance area as indicated in the attached. Within the hoarding vehicles gates will be located at the entry points to each phase. Pedestrians will enter via a controlled turn style located in the hoarding at the entry point of each phase. Prior to attending site, the names of operatives attending must be provided to Principal Contractors security / logistics manager.

Visitors must sign in and out every time they are on site.

Sub-contractors remain fully responsible for their own materials and equipment.

All sub-contractors are to wear their own sub-contractor branded Hi-Vis at all times on site.

Smoking

Smoking will only be permitted in the designated area adjacent to the welfare compound. Any person found smoking outside the permitted area will be removed from site.

2.17 HEALTH & SAFETY

The Principal Contractor is committed to achieving industry-leading performance in Health, Safety and

Environmental Management across the Organisation, and recognises that achieving the highest standards is an integral part of our business, and will take all reasonable steps to minimise Heath, Safety and Environmental risk to all of our Stakeholders.

Safety is at the forefront of everything that we do and is the over-riding precedent for delivery.

We will not compromise safety to achieve a programme date or to reduce cost.

From the outset of employment with the Principal Contractor's employees undergo extensive safety training, which can be best demonstrated by the level of competency of our staff and accident statistics we have achieved.

Minimum PPE requirement on site will include Safety Helmets, Company branded HI vests, Safety Boots, gloves & goggles / glasses (which must be risk assessed for specific tasks) which must be provided by Sub-contract Company and worn by the labour force at all times while on site.

Behavioural Safety

The Behavioural Safety strategy is a behavioural tool the Principal Contractor is continuing to promote. This enables operatives and subcontractors to openly engage, participate in safety forums and have a direct impact on site. The Team consists of subcontractors and operatives and will be supported by the local Health and Safety Advisor. The Safe Team will meet regularly to debate the standards expected on site. Agreement will be sought to ensure that all Safe members agree to engage with all operatives, regardless of the direct management chain to encourage safe behaviour. This approach aims to empower the workforce in determining the behaviours expected on site and encourage ownership of site safety by all persons on site.

Key Health, Safety & Environmental Issues include:

 $\hfill\square$ Site security including access for site personnel

- $\hfill\square$ Site access and delivery strategy
- $\hfill\square$ Materials lifting and hoisting
- □ Interface with neighbours, road users and pedestrians
- $\hfill\square$ Access for piling rig and access equipment (if required)
- □ Deep excavations (if required)
- $\hfill\square$ Installation of concrete frame
- □ Temporary works
- □ Installation of the structural steelwork

- □ Roof works & cladding
- □ Noise and vibration, with particular reference to Neighbours
- Dust and fumes (Air Quality Management Area)
- □ Fire safety management & means of escape
- □ Housekeeping and site storage and delivery on a 'Just in time' basis

2.18 Considerate Constructor Scheme

Community engagement / Good neighbour

As noted below, the site will be registered with the Considerate Constructor's Scheme, of which the Principal Contractor will be an associate member. However, we aim to go above and beyond the requirements of the Considerate Contractors Scheme.

Information regarding the construction works will be provided for all neighbours affected by the work via information mail drops, micro website, Facebook, presentations, feedback etc. with contact details of the Principal Contractor's appointed community liaison manager.

Contact details will be posted on external facing hoardings for contacting the site team.

Full and regular updates will be provided throughout the project regarding programming and site activities would be maintained through to completion.

Wherever possible, consideration will be given to pre fabrication of components off site prior to delivery to minimise potential disturbance caused by construction traffic.

The working site is to be kept clean and in good order at all times. Surplus materials and rubbish should not be allowed to accumulate on the site or spill over into the surroundings. Respectable and safe standards of dress will be maintained at all times. Lewd or derogatory behaviour and language should not be tolerated under threat of severe disciplinary action.

The Principal Contractor will employ a Traffic Marshal/ Logistic Manager who will manage all deliveries to site.

A detailed traffic management plan will be implemented & issued to all sub-contractors & managed by our Traffic Marshall / Logistic Manager, whose duties will include:

□ Give priority to local residents & traffic.

□ Managing / collating the delivery booking in process

□ Approved deliveries to site will contact the logistic manager in advance of their arrival to allow the site to prepare the delivery area & advise the driver of any issues.

□ Ensure vehicle engines are switched off while parking.

□ Banking & reversing vehicles where necessary.

□ Ensuring vehicle wheels are clean prior to leaving the construction area during ground works phase.

□ Ensuring vehicles are only using designated routes and not causing nuisance parking.

2.19 MINIMISING NUISANCE DURING CONSTRUCTION WORKS External areas

The external areas to the site will be monitored for litter, detritus, graffiti & fly posting by the logistics / security manager and inspections will be recorded daily. The criteria will be based

on

the ENCAMS Local Environmental Quality Survey of England (LEQSE) which uses the Environmental Protection Act (EPA) litter and detritus A, B, C and D guideline to grade the condition of the area. ENCAMS have developed the EPA litter and detritus guidelines further, to incorporate graffiti and fly posting on the same basis.

The site intends to maintain the following Grading standards for the following:-

- □ Litter Grade B
- Detritus Grade B
- Graffiti Grade B
- □ Flyposting Grade B

A mechanical road sweeper will also be used utilised for on & off site when necessary. To be monitored by the logistics manager.

Noise

As the site is within a residential and commercial area, noise break out from the sites construction activities should be significantly reduced.

The following techniques in minimising the residual nuisance noise for the adjacent properties during the construction works are as follows:-

Working hour restrictions will be in place as follows:-

□ No working on Sunday or Bank Holidays unless otherwise agreed with the LB of Richmond.

□ No noisy working before 0800 hours on Monday to Saturday (inclusive)

□ No noisy working after 1800 hours on Monday to Friday (inclusive)

□ No noisy working after 1300 hours on each Saturday.

However there may be times when extended working will be required to complete large concrete pours, etc. These incidences will be notified to the neighbouring properties & agreed with Richmond Borough.

Works on site will follow the Code of Practice BS 5228: 1997 Noise Control on Construction and Open Sites which provides specific detail on suitable noise mitigation measures.

The best practicable means, as defined in section 72 of the Control of Pollution Act 1974, to reduce noise to a minimum shall be employed at all times.

□ Where practical electrically powered Plant / tools will be used.

□ All vehicles and mechanical plant used for the purpose of the Works shall be fitted with effective exhaust silencers.

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

□ Machines in intermittent use shall be shut down in the intervening periods between work or, where this is impractical, shall be throttled to a minimum.

□ All plant and machinery shall be maintained in good and efficient working order.

 $\hfill\square$ No plant shall be left running when not in use.

Air Quality Management Area assessment & mitigation measures

The development is within an Air Quality Management Area and is designated as a low to medium risk development.

□ Excavations are contained within the site boundary. The soil is to be confirmed.

□ Stock piling of soils would be minimal & not generally above 3m as the soils will be

removed from site when excavated.

 $\hfill\square$ There is no burning allowed on site

 $\hfill\square$ There is no concrete batching on site

□ A 6F2 Mat will be laid over the site during the main excavation & frame works to minimise dirt / dust becoming airborne. This would be inspected & damped down regularly. The intention is for this base to be utilised as the permanent

□ The site will have a temporary electrical supply for the welfare, offices, site & tower crane. A generator may be required on a short term basis.

□ All operatives on site will be competent & be required to hold a CSCS competency card relevant to their trade

□ All operatives on site will receive on-site training through site induction, method statement briefings, tool box talks etc. to cover health safety & environment, best practice methods, site housekeeping, reporting procedures and communication

□ The site will have a solid screen / hoarding to the perimeter which has the added advantage of providing shelter from the wind, which reduces the likelihood of dust resuspension from the ground and provides a degree of noise screening.

□ Scaffolds will be screened with Monaflex where required

□ Include details of wheel wash

2.20 Stockpiles & Storage Mounds

During the initial stages of the project stockpiling of materials will be necessary, the following measures will be utilised:-

□ Stockpile exists for the shortest possible time.

□ Do not build steep sided stockpiles or mound or these that have sharp changes in shape.

□ Whenever possible keep stockpiles or mounds away from the site boundary, sensitive receptors, and surface drains.

 $\hfill\square$ Re-use hard core materials where possible, enclose stockpile or keep

Cutting, grinding & Sawing

Ideally these activates should not be conducted on site and pre-fabricated materials should be brought in where possible. In cases, where such work must take place, then the following techniques should be followed:

□ All these activities will require hot permits to ensure the safety of the operative carrying the work.

□ All the equipment should use water to suppressant or suitable local exhaust ventilation systems.

□ Use dust extraction techniques where available.

□ Cutting and grinding to take place in screed area only

□ Service all fan and filters regularly to ensure that they properly maintained.

Scabbing

- $\hfill\square$ Pre-wash work surface before starting the scrabbling activity
- Screen off work area
- □ Vacuum up all dusty residue rather than sweeping away.

Waste disposal / burning

□ No burning of any materials is permitted on site.

□ All excess materials should not be wasted, but used or safely removed from site according to appropriate legislation.

□ Full implantations of the Contractor site waste management plan.

□ Securely cover skip when not required

□ Label all waste storage and skips, detailing the type of waste.

□ Employ a just on time policy to deliver materials in order to reduce the storage on site.

□ Consider using recycle materials and recycle any materials used on site rather than disposing of them (including concrete, timber, aggregate, soil) temporary storage area set up for reclamation.

Dealing with spillage

□ Spillage kit must be available at all time and in a well known location for the site operatives.

□ Use bunded area.

- □ Regularly inspect the site area for spillages.
- □ Clean spillages using agrees wet handed methods.

Welding and soldering

Follow control measures in HSE guidance notes EH54 & EH55

Tarmac Laying and use of bitumen

 $\hfill\square$ Do not overheat bitumen and cover pots.

□ Use great care in all processes to prevent spillages and extinguish any accidental burning. **Plant Vehicles & not road mobile machinery (NRMM)**

□ All non-road mobile machinery NRMM should use fuel equivalent to ultra low sulphur diesel (ULSD). This measure will automatically reduce particulate emissions.

□ We will actively encourage the use of an appropriate exhaust after-t treatment from the approved list for the non road mobile machinery

□ No vehicles or plant will be left idling unnecessarily.

□ NRMM (vehicles and plant) should be well maintained. Should any emissions of dark smoke

occur (except during start up) then the relevant machinery should be stopped immediately and any problem rectified before being used.

□ Engines and exhaust systems should be regularly serviced according to manufacturers recommendations and maintained to meet statutory limits/opacity tests.

□ All vehicles should hold current MOT certificates where required.

□ Vehicle exhausts should be directed away from the ground and positioned so they are not directed at site entrances.

□ Locate plant away from the boundaries close to residential areas.

 \Box Speed limit on site is to be set a 5mph.

□ Control queuing or parking of vehicles outside the site, both during and before the site opens, utilising the approved delivery strategy.

□ Avoid use of diesel or petrol powered generators by using mains electricity or battery powered equipment where possible.

 $\hfill\square$ Wash or clean all vehicles effectively before leaving the site

□ NRMM (vehicles and plant) should be fitted with appropriate warning lights and reversing

alarm.

Fitting out

□ Fit all machinery for activities such as plastering, sanding or rendering with dust suppression/collection equipment.

□ Vacuum all waste material.

□ Erect / utilise screens when mixing.

Planning and sanding

□ Use fans and/or filters, dust suppression techniques and water sprays.

Site monitoring protocols

A operative will be on site at all times will be responsible for the following:

- □ Carrying out site inspections, as well as monitoring the site & boundary.
- □ Coordinate & manage all deliveries to site, including booking in procedure.
- □ Manage entry & exit to site of all deliveries & vehicles.

□ Ensure all delivery drivers are aware of site rules, re deliveries, speed limits & reversing etc.

- □ Ensure all drivers sign in & advise of mileage etc. for monitoring
- □ Check / inspect external site boundaries & areas daily
- □ Check / inspect wheel wash & haul road
- □ Monitor site noise & record
- □ maintaining logbooks
- □ Keep an accurate log of complaints from the public.
- □ Ensure that all plant & equipment is to be inspected weekly rfb recorded

Protection of the finishes

Protection of the finished surfaces will be developed and agreed with the relevant trade sub contractors before the works progress In order to achieve the desired level of quality finishes throughout.

Critical finished elements include the following:-

- □ Exposed Concrete surfaces, floors & walls
- □ Mechanical & Electrical services
- □ Curtain walling & cladding
- Doors & Joinery
- □ Floor finishes
- □ Architectural metal works

2.21 Temporary Works

To ensure that Temporary Works needs are identified and that safe and practical designs are produced and then correctly and safely constructed, loaded and dismantled. The successful control of Temporary Works requires a systematic and methodical approach including the appointment of competent individuals for all roles, effective communication between all parties and the maintenance of comprehensive records.

Temporary works for this site include support for the ground excavations, ground dewatering (if required), false work, formwork, existing structures, or scaffolding. Subcontractors will be required to comply with the Principal Contractor's specific procedures for controlling temporary works including the Health & Safety Standard TW01 Temporary Works as well as the Control of Temporary Works

The Principal Contractor will formally appoint a project Temporary Works Coordinator [TWC] who acts as a single point of responsibility for the co-ordination of all temporary works requirements for the project. If the sub-contractor works involves temporary works classified as Normal (N), i.e.

Temporary Works that are considered to be medium/high risk or have an interface with the public, then the subcontractor must also provide a full time temporary works supervisor [TWS] for the duration of that activity.

The subcontractor TWS appointed by the Subcontractor is to be responsible for site supervision and checking of Temporary Works during erection, use & dismantling as well as assisting the TWC, in collection & collation of temporary works information.

2.22 Achieving Quality in Key Areas

We have identified the following key packages for enhanced Quality Assurance measures.

- Piling (if required)
- RC Frame & Groundworks
- Structural steel works
- Curtain Walling
- Roof finishes
- Cladding
- Architectural Metal work
- M&E services & setting out

The Principal Contractor will produce a Project Quality Plan (PQP) that will be updated and further developed with the specialist contractors and the design team during the project. The Project Quality Plan will be implemented to ensure construction procedures are performed in compliance with the plans and specifications under this contract and will form part of the Project Execution Plan(PEP).

Overall management of the PEP will be the responsibility of the Principal Contractor. The design Team & the Principal Contractor will regularly inspect & review the works, outside of the planned inspection & hand over regime. An action list will be generated, and all sub-contractors notified; The sub-contractors must complete the required action by the date specified & confirm to the Principal Contractor when the actions are complete. This will be monitored and updated continually throughout the project.

Major non-compliance with Quality or specifications will be notified to the sub-contractor via a Non-conformance notice or Quality Improvement report. These must be completed & returned to the Principle Contractor when closed out.

It should be noted that all defects / snagging must be completed & signed off prior to practical completion where ever at all possible as access to complete the defective works will be unlikely.

The Principle Contractor is committed to targeting practical completion with "ZERO" defects.

APPENDIX

- 1. Master Programme
- 2. Phasing Diagrams (1a Completion)
- 3. Vehicle Holding Location
- 4. Route to nearest railway station
- 5. Environmental & Community Code of Practice (ECCoP)
- 6. Control of Noise
- 7. Environmental Management Standard
- 8. Protection of Controlled Water Resources Standard
- 9. Control of Noise, Dust, Ecology & Archaeological Issues
- 10. Demolition Management Standard
- 11. Dust Control Management Standard
- 12. Public Safety Management Standard
- 13. Pollution Control Management Standard
- 14. Management of Asbestos
- 15. Risk Identification and Management
- 16. Site Waste Management Plan