DEMOLITION MANAGEMENT STRATEGY

For the Demolition and Associated Works

For

Twickenham Sorting Office, 109 London Road, Twickenham, TW1 9BE



Compiled by

Wooldridge Ecotec Limited



Unit 17, Hallgrove Farm London Road Bagshot Essex GU19 5HP

> Revision 1 MAY 2013

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GENERAL STATEMENT OF HEALTH AND SAFETY FOR THIS PROJECT

The safety and health of our employees' demands the same degree of attention and emphasis as that placed on our mainstream activity which encompasses quality, proficiency, efficiency, environmental and financial awareness. We also recognise our responsibilities for the health and safety of others that may be affected by our activities.

It is our main aim to achieve a working environment in all construction projects that is free of all work-related accidents, dangerous occurrences and ill health. To this end we will pursue continuing improvements from year to year.

We undertake to discharge our statutory duties by;

- 1. Identifying hazards on construction sites, assessing the risks related to them and implementing appropriate preventative and protective measures.
- 2. Providing and maintaining safe plant and work environment.
- 3. Establishing and enforcing safe methods of work.
- 4. Recruiting and appointing personnel who have the skills, abilities and competence commensurate with their level of responsibility.
- 5. Ensuring that technical competence is maintained through the provision of refresher training as appropriate.
- 6. Promoting awareness of health and safety and of good practice through effective communication of relevant information.
- 7. Furnishing the resources needed to meet these objectives.
- 8. Identifying who could be affected by our operations outside of the site boundary and implementing procedures and techniques to minimise any disruption.

All employees, contractors and designers on their part, are encouraged to give their fullest cooperation and to contribute actively towards achieving a work environment that is free of accidents, dangerous occurrences and ill health.

Our health and safety policy is reviewed at suitable intervals to monitor its effectiveness and to ensure that it reflects our company's aspirations.

Signed for and on behalf Of Wooldridge Ecotec Limited

...... Date: ...7th March 2013.

Nick Anderson - Director

INTRODUCTION

- 1. This Demolition Management Strategy incorporating method statements and risk assessments has been developed in response to the pre-construction information pack and the full suite of contract documents supplied by St James in accordance with the CDM 2007 Regulations. This document describes the Demolition Contractor's site organisation and arrangements for managing both health and safety and environmental matters. It provides information and procedures for all site personnel (and visitors) on health safety and welfare matters.
- 2. The following Demolition Management Strategy refers to the demolition and associated works at Twickenham Sorting Office, 109 London Road, Twickenham, TW1 9BE. This document is not definitive and may vary to ensure the safety of all those directly involved or otherwise. Any variation from the described method of works and associated arrangements will be discussed with St James and the CDM Co-ordinator for approval and before any of the revised work starts. This document will be amended to suite the approved revisions.
- 3. The works, in principal, will be divided into two phases, a setup phase and a work phase.
 - 3.1. Phase one Ensuring the site is secure on all boundaries. The delivery of the site welfare and the implementation of the traffic management setup. The collection, removal and the correct disposal of all hazardous substances, items and objects around the site including all accumulated debris.
 - 3.2. Phase two The controlled removal of all ACM's in accordance with the regulations followed by the demolition of all buildings down to and including the ground slab and foundations to a maximum depth of two metres. Selected hard standings and foundations may not be removed due to the proximity of the water course. All the demolition arisings will be crushed to BS 6F2 and stockpiled on site for St James re-use. All waste will be removed from site to recycling centres or licensed waste transfer sites.

1. Safety standards on the project will be as required by the relevant statutory legislation and the

HEALTH AND SAFETY STANDARDS

contents of the Company Policy on Health and Safety together with any special arrangements contained in St James's Health and Safety Policy. The statutory legislation relevant to this project include;-
☐ The Health & Safety at Work Act 1974.
☐ The CDM 2007 Regulations.
☐ The BS 6187:2011 Code of Practise for Demolition
☐ The Management of Health and Safety At Work Regulations 1999
☐ The Pre-Construction Information Pack.
☐ The Work at Height Regulations 2005
☐ The Control of Asbestos Regulations 2012
☐ The Manual Handling Regulations 1992 (as amended)
☐ The Personal Protective Equipment Regulations 1992 (as amended)
☐ The Lifting Operations and Lifting Equipment Regulations 1998 (as amended)
☐ The Provision and Use of Work Equipment Regulations 1998 (as amended)
☐ The Control of Noise At Work Regulations 2005
☐ The Control of Vibration at Work Regulations 2005

☐ The Control of Substances Hazardous to Health Regulations 2002

□ The Health and Safety (First Aid) Regulations 1981 (as amended)
 □ The Health and Safety (Safety Signs and Signals) Regulations 1996.
 □ The Dangerous Substances & Explosive Atmospheres Regulations 2002

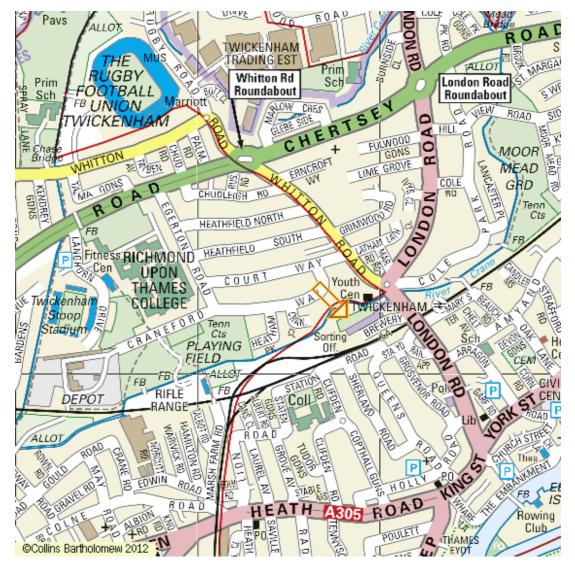
☐ The Electricity At Work Regulations 1989

☐ The Construction (Head Protection) Regulations 1989

Ш	The Reporting of Injuries, Diseases & Dangerous Occurrences (Amendment) Regulations
	2012.
	The Confined Spaces Regulations 1997
	The Working Time regulations1998.
	Company Policy for Health, Safety and Welfare at Work.
	Health and Safety Plans and Method Statements for specific activities where a specific risk is
	identified.
	Risk Assessments in accordance with the Management of Health and Safety at Work
	Regulations 1999.
	Regulatory Reform (Fire Safety) Order 2005
	Site Waste Management Plans Regulations 2008

LOCATION AND SITE WIDE ELEMENTS

- 1. The site is located on London Road in Twickenham. The site is located on a self contained block of land with a dedicated entranceway leading off London Road. London Road It is a busy dual carriage way that has a high level of vehicular and pedestrian traffic in both directions.
- 2. The traffic volumes will increase significantly at business and school opening and closing times. Pedestrian traffic across the entrance to the site is particularly heavy due to the proximity of Twickenham Station.



2. There are two access ramps leading into the site from London Road. One known as Brewery Lane gives access to two residential cottages on site and a Network Rail building while the second access ramp leads directly into the Sorting Office site.

- 3. Wooldridge will use the second access ramp that leads directly into the site. The entrance to Brewery Lane will be keep free from obstructions at all times allowing the residents of the two cottages and Network Rail employees 24/7 access.
- 4. The building structures that are to be demolished are set within their own grounds. A combination of brick walls and various types of fencing surround the site and prevents unintentional access.
- 5. The access ramp that extends into the site from London Road gives both vehicular and pedestrian access to the existing buildings while providing internal parking and storage areas within the project boundaries.
- 6. Local residents will need to be informed of any large vehicle movements to and from the demolition site. The demolition works, site plant and equipment will be moved to the project site at low vehicular traffic flow times. They will only be delivered after 9.30am and collected before 3.00pm
- 7. All means of escape and access in the case of an emergency will be maintained through the life of the project. This will include any temporary measures deemed necessary i.e. Temporary routes for escape and emergency service access and egress.
- 8. Liaison will continue throughout the life of the project to keep the project management team, the adjoining owners and occupiers updated with the current project status and any change of circumstances.
- 9. The works defined will take place within the demolition site areas, which are within the project site boundaries. All demolition operations, site plant, machines and operatives will be contained within the site boundaries. No access and use of any adjoining land shall be allowed, unless by the direction and consent of St James

SCPOPE OF WORKS

- 1. The scope of works has been defined by St James in the document titled "Scope of Works dated 31st October 2012 D252 Demolition & Asbestos Removal".
- 2. The extent of the scope of works is to be agreed by St James and Wooldridge Ecotec Limited before any work begins. This will include agreement between both parties for items within the scope of works that have been excluded within our tender return.
- 3. Generally the scope requires the demolition of all the defined structures on site and their removal. The breaking out and grubbing up of all foundations, ground slabs and hard standings.
- 4. The processing of all hardcore into a usable aggregate for re-use in the construction phase. To leave the site graded to surrounding levels and free from any known underground obstructions and contaminants to a maximum depth of two metres.
- 5. It has now been agreed this project will take place in one continuous phase.

PROGRAMME

It is anticipated that the works will commence at the end of May 2013, subject to receiving resolution to grant detailed planning permission. The duration of the demolition works will be 12 weeks.

SITE CONSTRAINTS

The site is located to the north of Twickenham on the London Road. The site is surrounded by a railway line to the south, London Road to the east, the Crane River and Heatham House to the north

and west. All demolition work will take place within the boundaries of the demolition site. No over sail of any boundaries will be necessary to complete our works. Furthermore:

- 1) Works are adjacent a Network Rail line and allowance should be made for working with Network Rail including preparation of method statements, and Risk assessments for Network Rail approval.
 - a) Wooldridge will work to any requirement from Network Rail however no work will take place that may oversail their boundary or damage any of their assets.
- 2) Works are adjacent the River Crane and allowance should be made to ensure that no contamination is made. There are a number of existing outfalls from the site into the River Crane.
 - a) All outlets into the River Crane will be sealed within 5 metres of the outfall. St James will be consulting with the Environment Agency to determine the construction of the river walls to establish any loading limits. Until this information can be agreed Wooldridge will not work or place any plant or machinery within 5 metres of this wall.
- 3) Works are adjacent 4nr occupied cottages and allowance should be made to give due consideration on traffic movement, noise, dust, and vibration.
 - a) There will be unobstructed 24/7 access to the cottages as they will use Brewery Lane for their sole use. St James will be erecting a 2.4 metre high plywood hoarding to the site boundary adjacent the cottages. This will help contain noise and dust from migrating into their properties. Hydraulic breaking will be kept to an absolute minimum to reduce any vibration to the lowest possible acceptable levels.
- 4) Works are adjacent Heatham House which has an outdoor sports area where children will be playing.
 - a) A protection scaffold to the full height of the buildings will be erected to the entire boundary of the sports area. The scaffold will be enclosed with debris netting to prevent the migration of dust and any potential fragments going over the boundary.
- 5) There is a risk of the public trying to park on the site and use the railway station this is to be prevented by the gateman.
 - a) Wooldridge will employ a gateman that will be on duty during working hours to prevent any members of the public parking down Brewery Lane.
- 6) A 48" trunk sewer crosses the site.
 - a) Wooldridge have information to suggest this sewer is in excess of 6 metres deep and will not be affected by our works. Wooldridge will double check this depth once on site to determine any protection measures that may be necessary.
- 7) A 30" water main runs down the ramp.
 - a) Historically HGV's and heavy articulated vehicles from Royal Mail have used this ramp. Wooldridge will not be applying any heavier loads than what has historically been applied to the ramp.
- 8) An overhead cable enters the site from the cottages.
 - a) These are BT lines and are due to be relocated by St James before any demolition commences.
- 9) The site is currently being treated for knotweed this should be dead prior to demolition however the contractor should be aware during excavation of other currently unidentified stems.

- a) All identified Knotweed stands will be completely segregated from the works using double clipped Heras fencing. No work will take place within 7 metres of these stands. Anything closer to this is classified as hazardous waste and contaminated land and will be removed by hand under a watching brief. Warning signs will be placed on the fences to warn all operatives that any access or work in these areas are prohibited at any time.
- 10) The site has previously been noted as having Giant Hogweed however this has not been seen recently, the contractor should be aware during excavation of other currently unidentified stems.
 - a) Any identified Giant Hogweed will be segregated from all access and works as above.
- 11) Low level brick wall adjacent Network Rail to be removed this will require Network Rail watching brief and approvals.
 - a) Wooldridge will work to any requirements or constraints from Network Rail.
- 12) Trees along the bank of the River Crane are to be removed down to stump.
 - a) Trees will be checked for the presence of bats prior to removal. Wooldridge will remove these trees with the aid of a demolition excavator fitted with a grab. With the excavator sitting back 5 metres from the river wall the tree will be grabbed carefully while a tree surgeon cuts the trunk at ground level. The tree will be lifted back into the site and placed in a waste bin.
- 13) No works to be allowed for within the Metropolitan Open Land (MOL)
 - a) The boundary fence will prevent any access to this area. Furthermore all operatives will be informed about this rule at the site induction.
- 14) There are built in safes 4nr located. These have not been included within the current asbestos survey.
 - a) Wooldridge will have these safes surveyed before dismantling them using a demolition excavator fit for the purpose.
- 15) Below ground ducts run within the floor slabs of the main warehouse buildings.
 - a) These will be progressively backfilled during the demolition of the buildings and before any excavators track over these areas.
- 16) Underground oil tanks have been identified on site and require removal.
 - a) The removal of these tanks are discussed in the method of works and will be removed in accordance with BS6187:2011 Code of Practice for Demolition, Chapter 19.

THE BUILDINGS.

- 1. The majority of the central and northeastern parts of the site are occupied by large interconnected warehouse buildings.
- 2. The western part of the site is occupied by a mostly tarmac covered yard, with a rectangular building located along part of the southern boundary.
- 3. The eastern part of the site is occupied by a yard, again mostly covered in tarmac hard standing, with a concrete loading bay area immediately adjacent to the warehouse.
- 4. In the eastern part of this yard is a concrete and brick built shed structure which previously housed an above ground diesel storage tank. There are also two underground diesel tanks in this area.

- 5. Previous desk study report indicates that the tanks have capacities of 5000 litres and 6000 litres. The fuel island is bordered by a drainage system which links into interceptors, and vent pipes are also present.
- 6. The buildings on site are traditionally constructed one, two and three storey concrete framed buildings with brick infill panels. The pitched steel or timber roof trusses support light weight profiled steel sheets.
- 7. Window and door opening are built into the external wall openings. Steel/Concrete staircases give access to the upper floor levels made from concrete slabs or planks. Masonry partitions form the internal room separations. The ground floor areas are concrete slabs.
- 8. The internal finishes are generally exposed or painted block work.

STANDARD PROCEDURES

Site Survey & Statutory Authorities

Before commencement of works: -

- 1. A visual site survey will be carried out to assess all the site wide elements that affect the method and sequencing of work, the precautions that are to be taken regarding the health & safety and welfare of site personnel and visitors, the general public and property out side of the boundaries.
- 2. Wooldridge Ecotec Limited has been informed that St James has made all the appropriate Statutory Authorities aware of their intentions and that all necessary Notices and Licenses have been obtained, (planning permission/conditions etc.) Wooldridge will display a copy of the Section 81 Demolition Notice on site.
- 3. St James will supply all the necessary information, in the form of maps, plans or onsite instruction, to Wooldridge Ecotec Limited to enable them to identify and protect all known live services passing through the site. Wooldridge Ecotec Limited will liaise with St James regarding this matter before the demolition works begin.
- 4. St James will be sending notification to all the owners and occupiers of the adjacent buildings or structures, informing them of the nature of the work, commencement date and working hours.
- 5. Liaison will continue throughout the life of the project to keep the adjoining owners and occupiers up dated with the current project status and any change of circumstances.

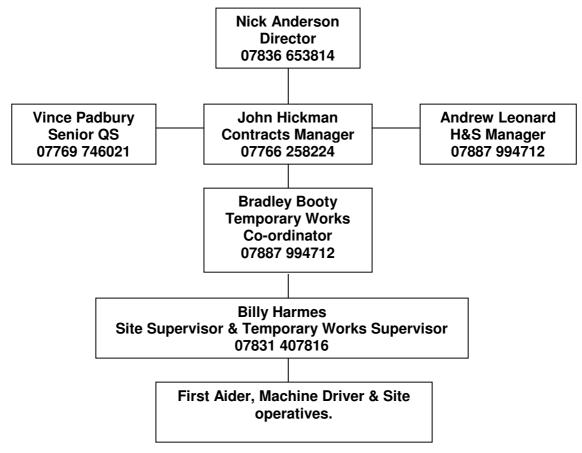
PRINCIPAL AIMS AND OBJECTIVES

- 1. The principal aims and objectives are to control Health and Safety throughout the duration of the works of this project by the following methods; -
 - 1.1. To record the Projects Health and Safety arrangements for the management of the demolition phase together with monitoring procedures for compliance with the relevant statutory provisions ensuring, so far as reasonably practicable, the health and safety of all persons carrying out the demolition work and all persons who may be effected by the work.
 - 1.2. To take reasonable steps to ensure co-operation between all contractors, so far as is necessary, to enable each contractor to comply with the requirements and prohibitions imposed on them by or under the statutory provisions relating to demolition (construction) works.
 - 1.3. Ensure only "authorised persons" enter the areas where demolition works are being carried out.

MANAGEMENT OF HEALTH AND SAFETY DURING THE DEMOLITION PHASE.

- 1. The management of Health and safety in the demolition phase will be the implementation of:-
 - 1.1. The company Policy for Health, Safety and Welfare.
 - 1.2. Where appropriate, risk assessments in accordance with the Management of Health and Safety at Work Regulations 1999.
 - 1.3. Method statements for specific activities where a significant risk is identified.
 - 1.4. Weekly safety inspections by site management superimposed by independent safety audits of work in progress to ensure compliance with procedures identified in both the method statements and risk assessments together with statutory regulations.

The structure of the management team for this project is below;



MONITORING

- 1. Active and reactive monitoring of health and safety on the project will be implemented in the following manner, in accordance with the Company Policy for Health, Safety & Welfare and the Safety Management System.
 - 1.1. In addition to daily monitoring of Health and Safety on site, the site manager will on the first working day of each week carry out a safety check of the site.
 - 1.2. Safety Audits for Health and Safety together with the availability and compliance with method statements and risk assessments will be conducted by an independent external safety auditor every 2 weeks.

- 2. Copies of the documents mentioned within this Section will (a) after being used at the site meetings will be filed within the safety file kept in the site office and (b) be forwarded to St James Health and Safety Manager for monitoring purposes.
- 3. The stated objective is to ensure that all work carried out on Wooldridge Ecotec sites is done safely and that a 'zero' accident rate is achieved. Monitoring site safety in the manner as described above allows for safety issues on site to be identified and actioned where necessary.

ARRANGEMENTS FOR THE CO-ORDINATION OF CONTRACTORS

- 1. It is the responsibility of the Demolition Management Team to monitor and develop the Health and Safety Plan to ensure the co-ordination of other contractors while demolition is taking place. This will be by ensuring that; -
 - 1.1. A common approach is developed for managing the Health and Safety by everyone involved in the demolition phase.
 - 1.2. Assessments are prepared by contractors under the Management of Health and Safety at Work Regulations 1999.
 - 1.3. The provision and use of designated welfare arrangements.
 - 1.4. The implementation of the Health and Safety Plan to include the provision of risk assessments.
 - 1.5. Where necessary, ensure modification of the health and safety plan according to experience and information received from contractors.

INFORMATION FOR CONTRACTORS

- 1. Information on health and safety requirements will be provided to all contractors before the commencement of any site operations by safety induction training for all site personnel.
- 2. Programme and planning meetings with contractors will also be held on a regular basis during which health and safety issues will be raised.

SELECTION PROCEDURES

- 1. Contractors appointed during the demolition/construction phase will be required to demonstrate they are competent to undertake the work required and that their employees have received an adequate level of training.
- 2. This will be done by reference to previous performance standards and all contractors completing a health and safety questionnaire prior to appointment.
- 3. Method statements and risk assessments must be provided by contractors and authorised by site management prior to any work being commenced.
- 4. Method statements and risk assessments will be stored in a contractors register in the site office.
- 5. Machinery or plant for common use during the demolition/construction phase will only be selected from and provided by reputable suppliers.
- 6. The selection of such machinery or plant will take account of the method statement provided for the task and the conditions under which the machine or plant will be working. Only trained, competent workers will be allowed to operate the machinery/plant.

- 7. All plant and equipment brought onto site by Contractors must be safe and in good working condition, fitted with any necessary guards and safety devices.
- 8. Every lifting appliance and all working gear and anchorages as defined in the Lifting Operations and Lifting Equipment Regulations 1998 must have a 12 or 6 monthly safety examination certificate available for inspection prior to the equipment being allowed to operate on site.
- 9. All chains, ropes, slings and any other item of lifting gear must have a certificate showing it was thoroughly examined prior to first use and a certificate of examination within the previous 5 months available for inspection prior to being used on site, in accordance with the Lifting Operations and Lifting Equipment Regulations 1998.
- 10. All other plant (e.g. dumpers, excavators) must have a certificate of examination by a competent person (fitter or engineer) issued within the last 11 months to show that the plant is safe and has been serviced in accordance with the manufacturers instructions.
- 11. Such plant will also be subject to a weekly inspection by a competent person and the inspection entered into the appropriate register (in addition to the record held by the operator).
- 12. No power tools or electrical equipment of greater voltage than 110 volts may be brought onto site. All electrical equipment must be tested and suitably tagged in accordance with the Electricity at Work Regulations 1989.
- 13. Any electrical equipment including tools, transformers, generators, leads, plugs and sockets must remain in good condition whilst on site and any damaged equipment must be repaired by a competent person or replaced. Insulation tape/ block connectors etc. for repairing split/ scuffed leads etc. will not be allowed.
- 14. In accordance with the Provision and Use Of Work Equipment Regulations 1998 all operatives will be required to demonstrate that they have received adequate training before using certain pieces of plant/equipment (e.g. scissor lifts, dumpers etc.).
- 15. Evidence of such training will be required to be produced at the safety induction training at the latest. Regulations require that persons using any work equipment are competent to use that equipment.
- 16. Evidence of training does not in itself prove competence and any operative who is considered not to be "competent" when using a piece of work equipment will be stopped from using such equipment irrespective of whether they have evidence of training or not. The decision will rest solely with the Site Managers.

COMMUNICATION AND CO-OPERATION

- 1. Project, Client and Sub-Contract Review Meetings will be the means for communicating and passing information to all members of the project team, including St James, St James' representatives, designers, CDM Co-ordinator, contractors and others whose health and safety may be affected due to the demolition work.
- 2. An "open door" approach should be adopted by all parties involved in the project. This will help encourage a sense of co-operation, involvement and a personal responsibility from all parties to complete this project safely and successfully.
- 3. Co-operation between contractors is expected so that the activities of one contractor will not create a risk to the health and safety of another.
- 4. Arrangements for providing co-ordination on health and safety issues on site will be by daily toolbox talks. These will maintain contact by site managers and supervisors with employees and contractors representatives.

- 5. All site managers and supervisors are to allow and encourage any representations to be made concerning health and safety issues on site by the workforce.
- 6. Where variations in design work or planned procedures are necessary during the demolition phase, these should be appropriately assessed in respect of health and safety implications and any information will be circulated to members of the project team including the CDM Co-ordinator.
- 7. Regular site progress, design and project review meetings will be held and are a suitable forum for ensuring that the above requirements are met, in addition to other means of liaison with relevant parties due to daily changes.
- 8. Health and safety issues at these meetings should be high on the agenda and not be passed over at the end of the meeting due to lack of time. Items raised and discussed will be minuted, actioned where appropriate and form part of the documentation to this Health and Safety Plan.
- 9. The following points will be included under the heading for health and safety issues.
 - 9.1. Recommendations and action taken or outstanding, following regular monitoring by site management or independent sources (i.e. safety inspections and audits.).
 - 9.2. Reports of accidents, dangerous occurrences, near misses and complaints including analysis and action.
 - 9.3. Recommendations of any safety representative.
 - 9.4. Pre-planning in light of project progress and work programmed before next meeting including updating of health and safety plan.
 - 9.5. Inter-relationship of contractors works to ensure co-ordination and co-operation.

LIASON AND GOOD NEIGHBOUR POLICY

Within our site management team, a single point of contact will be made at a suitable level of seniority to liaise with the local neighbours. We will establish regular meetings with the community to discuss the works and take on board where possible any concerns and complaints. The members of the public will be able to communicate with us via our dedicated "24/7 hot line". The number will be posted on the site hoarding and distributed to the neighbours in all our regular news letters.

The nearest neighbours will be consulted prior to carrying out any significantly noisy operations.

Any complaints from local residents will be recorded and categorised by the site management team into the following categories: . Noise, Dirt and Dust; Parking; Safety; Inconsiderate Behaviour; Road Conditions and Vehicle Movements; Environmental Concerns; Pedestrian Access Obstruction; Property Damage; Site Lighting; Working Hours; and Other. The site management team will record the date, time and reason for the complaint and what action has been taken to investigate and respond to the complaint.

The complaints form will be reviewed and discussed on a regular basis with St James to ensure that all complaints are dealt with in an appropriate manner.

REVIEWS

 Reviews will be conducted throughout the project, especially as different trades/contractors complete their work so that records can be made as to compliance with and standards achieved in regard to the Health and Safety Policy. 2. The initial review will be shortly after the commencement of the project and thereafter as decided by any relevant parties involved in the demolition project.

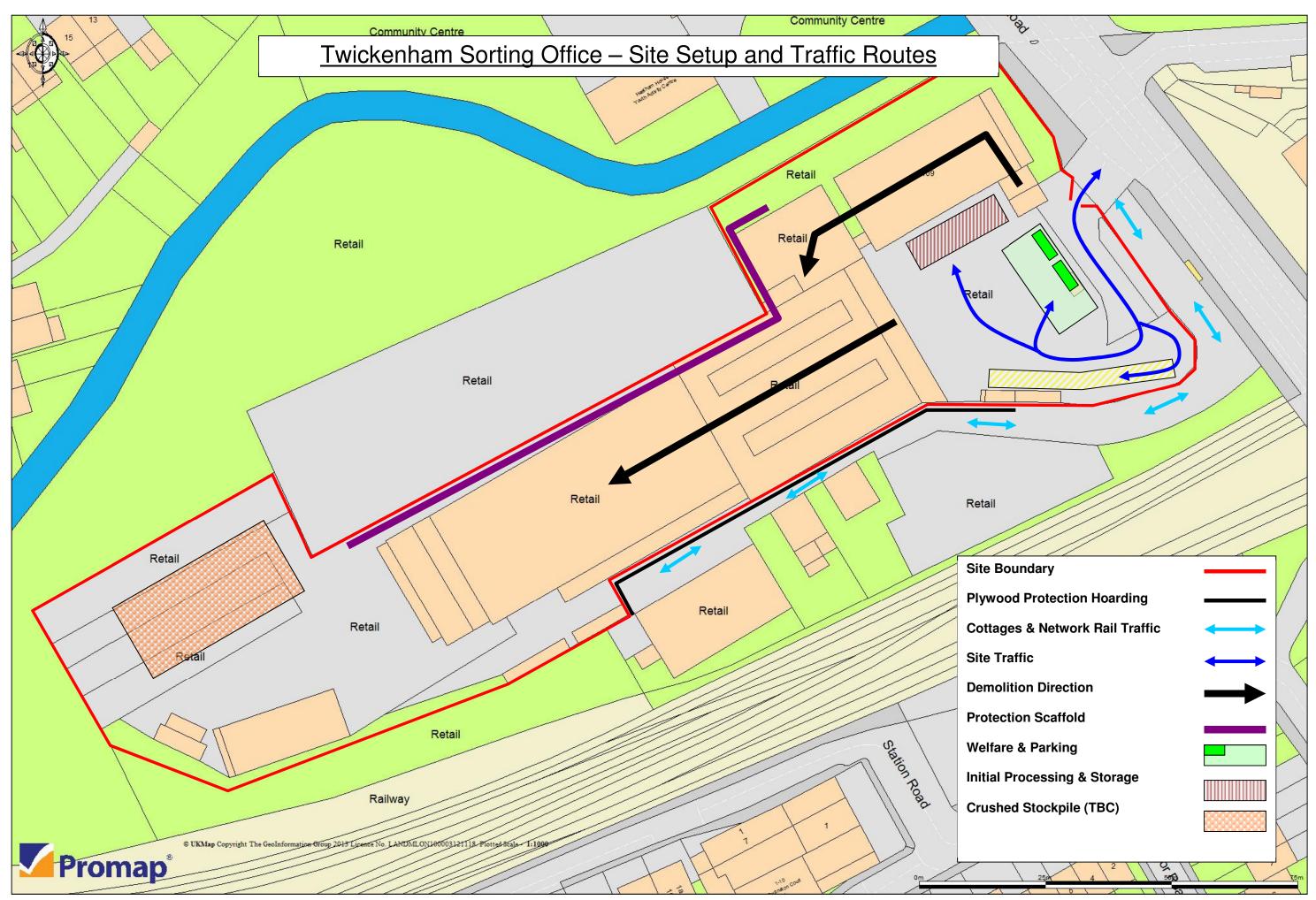
SITE INDUCTION

- 1. On the day of commencement and prior to any work starting, all site operatives will attend a site induction that will be undertaken by Wooldridge Ecotec Limited's Site Supervisor. Areas of safety and welfare will be addressed as well as emergency access and egress routes, fire precautions and all other matters pertinent to this particular project. All new site operatives i.e. directly employed self-employed or subcontractors will be instructed to report to the site agent at the commencement of their first working day on site before they enter the site and start work.
- 2. All Wooldridge Ecotec Limited's site operatives will be CITB Constriction Industry Training Board trained (CSCS affiliated).
 - Safety awareness in demolition operations.
 - Safety awareness in plant operations.
 - Safety awareness in the removal of asbestos-based materials.
- 3. All new site operatives will be asked to produce their CITB certificate (or similar approved) as proof of qualification, experience and competence.
- 4. All untrained and/or site operatives with out certificates will be trained to the appropriate standard before being allowed to commence any instructed site operations.
- 5. The induction talk will include an outline description of the company's organisation and management system key personnel welfare and staff facilities. The issues of health and safety that are to be stated at the site induction will include,
 - The health & safety plan.
 - The requirement to heed personnel safety, the safety of others and the public emphasising that any breech of duty will result in a reprimand or dismissal in extreme cases.
 - First aid.
 - Fire procedures.
 - Accident procedures.
 - Building evacuation procedures.
 - Obtaining and using protective clothing and safety equipment.
 - A brief out line of the likely hazards that may be encountered, together with examples of any accidents that have occurred.
 - The location of the asbestos cement materials identified in the type 3 asbestos surveys along with the possibility of finding other asbestos containing materials as the demolition progresses.
 - Any areas that contain Knotweed or Giant Hogweed are completely out of bounds to all operatives, plant and equipment.
 - A brief out line of further safety training and information that is required for site purposes e.g. the construction phase health and safety plan method statements and risk assessments.

SITE ESTABLISHMENT

- 1. The site is currently enclosed with a combination of brick walls and various types of fencing. Additional 2.4 metre high plywood hoarding will be erected along the boundary adjacent the cottages and the Network Rail access point. Further hoarding will be erected along the London road boundary that will include two panels to act as gates.
- 2. It is the intention of Wooldridge Ecotec Limited not to further undermine these measures in any way during the progress the demolition work. However during the progress of the works Heras fence panels will be erected in specified areas at the project site to enhance the boundary security conditions and to create drop zones and exclusion zones.

- 3. All the gates and fences will be continually checked and maintained throughout the life of the project. The demolition site main entry gates are to be opened periodically during working hours to allow access.
- 4. A gate Marshall(s) shall attend during the site gates opening hours to prevent un-authorised access. Banksmen will attend during the arrival and departure of all site plant, vehicles and equipment.
- 5. The gate marshal will guide all vehicles in and out of the site when it is safe to do so and when the public and any pedestrians have been fore warned by the gate marshal of the vehicles intentions.
- 6. Appropriate signs will be strategically placed around the site perimeter boundary fences warning the general public that demolition and stripping out work is in progress. The signs will also display our full company name and address as well as contact telephone numbers, "Caution Demolition in Progress Keep Out" and "Hard Hat Area" signs are to name two important signs that are to be posted.
- 7. Statutory welfare facilities will be provided by Wooldridge Ecotec and will include drinking water, hot water, toilets, washing facilities and drying area with natural ventilation and light. This area will act as the site centre and control point where all information, communication, instruction, first aid and welfare facilities will be readily available.
- 8. The welfare facilities will be situated within the site at the most convenient area. There will be no more than 6 vehicles on site on a daily basis.
- 9. Smoking Area to be provided outside of the welfare unit to include a bucket filled with sand for the extinguishing and discarding of used cigarettes. Smoking within any buildings on site is prohibited.



SAFETY AND FIRST AID

- 1. The site will be designated as a hardhat area and together with all other protective clothing, footwear and equipment will be worn and used by all operatives whilst working within the project site boundaries to include safety harnesses to prevent and arrest falls from heights. Mobile working platforms with safety rails will be used to provide safe high level working platforms.
- 2. A first aid kit commensurate to the number of operatives will be kept, as would the accident report book in the site office. All operatives will be made aware of their location. The site will be manned by a full time competent Site Supervisor. All Wooldridge Ecotec's site supervisors and a majority of the operatives are first aid trained.
- 3. The Divisional Director, Mr. Nick Anderson and the Site Supervisor, Mr Billy Harmes are both available in the case of emergency on the office numbers or Nick on 07836 653 814 or Billy on 07831 407816, these being mobile numbers thus giving twenty four hour contact with the Site Supervisor.

WORKING HOURS

- 1. The site working hours will be from 8.00am to 6.0pm. Monday to Friday and 8.00am to 1.00pm on Saturdays. No Sunday and Bank Holiday working.
- 2. The site will be closed on Saturday morning's that coincide with major event days at Twickenham Rugby Stadium. This is due to the impact of road closures in the vicinity of the site. If an event occurs on a weekday, vehicles movements on and off site will not be permitted during the road closures in the vicinity of the site.

SITE ACCESS

- 1. The use of the site access will be available for site management between the hours of 7.30am to 6.30pm Monday to Friday and 7.30am to 1.30pm on Saturdays. No access on Sundays and Bank Holidays.
 - Access for construction vehicles will be limited to between 9.15am and 2.45pm to avoid school drop off/pick up and peak times for London Road. The exception to this will be abnormal loads / deliveries which are likely to cause a disruption to the surrounding highway network. The local police and highways authority will be consulted prior to these vehicle movements and delivery times outside of these restricted hours may need to be agreed.
- 2. Liaison will continue throughout the life of the project with St James, the Local Authority, Police, adjoining owners and/or occupiers in relation to traffic routes for site vehicles and to up date them with the current project status and any change of circumstances.

NOISE

- 1. St James commissioned a consultant (Peter Brett Associates) to undertake a noise assessment for the demolition works. The demolition noise assessment was requested by the London Borough of Richmond-upon-Thames Environmental Health Department to determine the impact on nearby receptors and detail mitigation measures to be incorporated into the demolition management plan.
- 2. The baseline noise surveys were undertaken at three locations surrounding the application site. Th averages noise levels measured at each location for the daytime can be found in the Noise Assessment Report contained within Appendix F.
- 3. The results show that the threshold noise level of 65(dBa) will not be exceeded at either Heatham House Youth Centre (Receptor 2) or 14 Cranford Close (Receptor 3) At the Railway Cottages the threshold value will be exceeded but only at first floor level. Inspection of the property has concluded that no living rooms are situated on the first floor with only bedrooms located on the first

- floor. Bedrooms are considered to be a night-time living area and as there are no night-time demolition works we have not considered this applicable for further assessment.
- 4. The assessment has shown that the noise limits set within BS5228 will not be exceeded therefore specific intervention measures are not required. However noise impacts will minimised by the following mitigation measures and good noise management practices.

Mitigation Techniques

- 1. All Machines owned by Wooldridge Ecotec Limited have been recently purchased and have been factory tested before delivery.
- 2. All machines are equipped with baffles, lined compartments and silenced exhausts to reduce the machines operating noise level to within or lower than the regulated decibel levels to comply with the Statutory noise restrictions
- 3. The Crusher has lined compartments which house the machines three motors and associated operating pumps. The sound proof lining together with baffles and silenced exhausts contribute to reduce the machines operating noise level to within or lower than the regulated decibel levels to comply with the Statutory noise restrictions.
- 4. The Crusher will be surrounded by a 3.5m noise bund such that noise emissions towards the nearest receptors is minimised.
- **5.** A 2.4m high plywood hoarding will act as a noise barrier during the main part of the demolition. Where the building abuts the road by the Railway Cottages heras fencing with acoustic lining will be used until sufficient space is made for the permanent hoarding.
- 6. Re-site or relocate noise source as far as is reasonable from Railway Cottages.
- 7. Control noise at source by mufflers, acoustic shields, exhaust silencers, or equipment dampers.
- 8. Issue and instruct on the correct use of PPE i.e. ear defenders.
- 9. Orientate plant to direct noise away from noise sensitive areas i.e. Railway Cottages
- 10. Enclose source of noise.
- 11. Rotate noise exposure times twenty minutes work / two hours break.
- 12. Liaise with who it may effect to agree work and rest times.
- 13. Management of activities e.g. the opportunity to shut down any machinery in intermittent use in intervening periods of non-use or where this is impractical, it should be throttled back to a minimum
- 14. Minimise drop heights of materials
- 15. Education and supervision of employees to ensure compliance with good practice noise management measures
- 16. If the above noise mitigation measures are not successful and threshold levels exceeded, secondary glazing to the railway cottages or other equally effective noise mitigation measures will be installed by St James Group.

Noise Monitoring

During the demolition works noise monitoring will be carried out for the purpose of assessing compliance with noise control targets. Based on the results of the noise assessment, noise monitoring is only required adjacent to the Railway Cottages. Instrumentation will be set up in a similar location to Receptor 1 and continuous daytime data will be obtained during the entire demolition period. The results of the noise monitoring will be summarised in a weekly report which can be made available to the Environmental Health Officer if requested.

The noise monitoring will be used to assess the noise levels during the work and enable adjustments to be made to the working practices if threshold levels are exceeded.

VIBRATION

British Standard 5228:2009 Part 2 provides guidelines on the acceptable vibration levels during the demolition. The guidance in the British Standards gives a vibration limit of 15mm/s above which cosmetic damage to neighbouring buildings may occur; the demolition works will be carried out in such a manner as to ensure that this limit is not exceeded. As a further precaution pre-

commencement condition surveys have been carried out on the four Railway Cottages to provide a baseline to monitor against in the unlikely event that the works cause deterioration to the buildings.

Vibration levels during the majority of the demolition works will not exceed 10mm/s as agreed with Richmond Council's Environmental Health Officer..

Vibration monitoring

Vibration monitoring will be carried out during the demolition works using a receptor fixed to one of the four Railway Cottages. The results of the vibration monitoring will be presented in a monthly report.

NUISANCE DUST & MUD

The 2012 Environmental Statement (ES) prepared for the site includes a construction dust risk assessment carried out in accordance with the GLA Best Practice Guidance on assessing and controlling dust emissions. This assessment concluded that the site was high risk due to the size of the site, and surrounding areawas of medium sensitivity due to the proximity of the Railway Cottages to the site. Mitigation measures for the demolition phase have been proposed in line with the recommendations contained within the GLA guidance as set out below.

All reasonable measures will be taken to control nuisance regarding dust and pollution, complying with all reasonable requests from the Client and occupiers of the adjoining properties.

The main sources of dust to arise during the demolition process are during the demolition of brick buildings, grubbing up and excavation operations. The mitigation measures are dependant on the weather.

During a dry spell, water spraying shall be used to damp down the surfaces and all dust creating activities.

During wet periods, attention shall be drawn to the trafficking of mud and debris by vehicles on to the highways. In this case the roads shall be inspected daily and cleaned as appropriate.

Dust suppression measures shall be assessed at the beginning of each day and reviewed as necessary. This will have regard to the nature of the works, the location and proximity of adjacent properties and the public.

In all our demolition projects we try to preserve as much hard standing as possible and only remove it from inside the site towards the gate at the end of the project. We use the hard standing for the vehicles so they do not drive on the mud and this reduces the potential for mud to be carried on to the road.

We will instruct an operative to inspect the road on an hourly basis. He will be equipped with a broom and shovel in case any spoil gets on to the road. This will be removed off of the high way and carried back to the site.

Furthermore we will provide a water bowser with an engine powered jet wash attached. We will use this to wash off the wheels of any vehicles leaving site.

Additionally and when necessary the site supervisor will order one of our in house road sweepers to clean the roads.

The following precautions and best practise measures will be adopted from the beginning to the end of the project.

1. Continual dampening down using fine water spay on to activity areas that may create dust.

- 2. No demolition activities carried out in areas in close proximity to the adjoining properties during moderate or high wind conditions.
- 3. All loose debris and arisings that are light enough to be lifted up by the wind are to be cleared from the external or exposed site-working areas.
- 4. The debris and arisings will be either removed from the site or stored on the site in containers or spoil heaps with tied down covers.
- 5. In dry and windy conditions selected site areas will be hosed down to reduce the migration of debris, dirt and dust particles into the air.
- 6. Water will be applied in a controlled manner to ensure the risk of fugitive dust is minimised whilst avoiding excessive wetting of materials such that there is no potential for silty contaminated run-off from the work area
- 7. Sheeting of haulage vehicles entering/leaving site.
- 8. Covering of site skips.
- 9. During muck shift periods, provide road sweepers when necessary.
- 10. Regularly inspect and clean approach roads.
- 11. Disc cutting works to be subjected to dust suppression,
- 12. Establish site speed limits to prevent the creation of dust,
- 13. There will be no stockpiling of materials within 25 metres of any of the water courses on site.
- 14. Continual on site monitoring carried out by the person in charge to ensure the aforementioned mitigating action is adhered to.

By using the dust mitigation measure above, the potential for dust emissions to arise shall be significantly reduced.

In the event of an incident / complaint, the following procedure will be adopted:

- Take action to stop the incident (e.g. stop works);
- Mitigate and control any obvious effects (e.g. control dust with sprays, clean up any offsite dust deposition);
- Report incident immediately to site management team and Environmental Manager;
- Environmental Manager to record in the site log book.
- The Environmental Manager will undertake an investigation and identify why measures were not effective in order to prevent future dust incidents. Any changes to procedure will be communicated to all on site.

Dust Monitoring

Dust monitoring will be carried out using 2 optical analysers, one downwind and one roughly upwind of the site / at the closest residential properties (Railway Cottages).

The precise locations will be determined based on the availability of appropriate power source, gaining permission from the adjacent land owner and following discussions with the EA officer. An anemometer / wind van will be located with the downwind analyser. Trigger Action Level of 250ug/m³ over 15 minute mean in line with guidance. SMS/text message and/or emails will be sent to 0n-site alert recipients following a breach of trigger level.

SECURITY

- Wooldridge Ecotec Limited will ensure that all the security measures are maintained during working hour's attendance after this site will be left as secure as practically possibly. Upon the completion of work at the end of each working day the site will be left as secure as possible. The continuation of the boundary fence line will be checked all gates locked and all site plant and equipment left turned off and disabled.
- 2. All machines owned by Wooldridge Ecotec Limited are fitted with a secondary key system or a digital pin code system. The secondary key, when operated, turns off the electrical power to the starter motor.

- 3. The pin code enables the engine management system. Without the unique code the machine cannot be started regardless of the ignition switch being activated. Therefore at the end of each working day each machine will be parked in a selected area. The ignition key will be turned off and removed switching off the keypad. Alternatively the secondary key will be turned off and removed from the switch thus disabling the ignition and electrical system of each machine.
- 4. All project site boundary security conditions will be checked for continuity. The project site entrance gates will be locked by the site supervisor after the last person has left the project site area.

BURNING ON SITE

NO BURNING ON SITE

IDENTIFIED RISKS & METHODS

Existing Services

- It is known that all the former Water, Gas and Electrical services are all located underground in the site area servicing the existing buildings. Overhead electrical cabled service the cottages which must be protected at all times. Documentary proof will be sought from the relevant authorities for all terminations before any demolition begins.
- 2. Any identified live services and termination points within the site will be segregated from the work areas by Heras fence panels or locked doors. This will have relevant signs attached warning of live services beyond
- 3. All the relevant live and terminated service information regarding position, depth and status will be passed to Wooldridge Ecotec Limited in writing and by on site instruction. All drawings will be kept in the site file as reference.
- 4. Note. The site induction will inform all site personnel of their location and how to avoid contact with them. Live services will be protected from damage.
- 5. Cat scan detectors will be used before any below groundwork commences to ensure that any existing underground services of unknown position and depth are not disturbed.

Machines Working in Close Proximity of Live Underground Services Positions.

- 1. Any identified live services that remain on site will be excluded from the works areas. The service route will be CAT scanned to determine the centre line of the pipe or cable route.
- 2. A work exclusion zone will be defined, set out and measured 2 metres from the centre line of the known service position.
- 3. This area will be defined either with paint markings or Heras fencing on hard surfaces or with lightweight bunting on soft surfaces.
- 4. The concrete slabs and foundations within 2 metres of any cables will not be demolished until the services have been either relocated away from the demolition areas or have been terminated.
- 5. Any machine working in close proximity of the exclusion zone will work facing the exclusion zone allowing the machine operator full view of the exclusion zone. The machine will not be placed in a position where the boom could pass through the boundary of the 2 metre exclusion zone.

Ref: Twickenham Sorting Office – ST JAMES 070313

- 6. Banksmen/observers will be posted also having full view of the boundary of the exclusion zone. Special diligence will be used when the machine tool is being used within one metre of the exclusion zone boundary.
- 7. The Banksmen/observers will stop the remote methods of work if it should appear the work may encroach into the exclusion zone or affect the stability of any excavations or structures close to the exclusion zone.

COSHH Hazards

- 1. Wooldridge Ecotec Limited will instruct all site operatives and personnel that unidentifiable materials, substances and products may be found and or uncovered during the course of the demolition works. This will include the potential for uncovering unidentified asbestos containing materials.
- 2. Upon discovery of any unidentified substances or objects, all work is to stop in the area and the person in charge is to be contacted. A site operative may stand a safe distance away from the suspected hazardous soil, item or substances to warm others passing to move away.
- 3. In extreme cases the area will be cordoned of until a specialist arrives to identify the item or substance and decide on the method of rendering the item or substance safe and the correct means disposal. The item will be removed from site and deposited at the appropriate waste facility, in extreme cases by a specialist contractor to a licensed waste processing facility.
- 4. When the below slab works begin Wooldridge Ecotec Limited will ensure that adequate PPE is issued to protect any ground workers. Good hygiene will be enforced and suitable washing facilities will be made available to all. Dust suppression measures will be introduced to prevent any contaminated soils becoming airborne.
- 5. Small amounts of unleaded petrol will be used for refilling portable plant like petrol powered skill saws. The fuel will be stored in small 10 litre containers away from all sources of ignition. No fuel will be stored over night on site.
- 6. Diesel will be stored on site in a steel double bunded tank. A spill kit and fire extinguishers will be close to the tank at all times.
- 7. Mercury gas is contained in fluorescent tubes. Care must be taken not to break any tubes.
- 8. COSHH assessments will be made available on site for all identified hazardous substances.

Weather conditions (winds)

- 1. Demolition work will not be carried out in moderate to high winds.
- 2. All loose debris and arisings that are light enough to be lifted up by moderate to high winds speeds are to be cleared from the external or exposed site-working areas.
- 3. The debris and arisings will be either removed from the site or stored on the site in containers or spoil heaps with tied down covers.
- 4. In dry and windy conditions selected site areas will be hosed down to reduce the migration of debris, dirt and dust particles.
- 5. No work at high level will be carried out in moderate to high wind speeds. All external or exposed high level working platform frames will be securely tied down and fixed to immovable parts of the remaining structure.
- 6. In the event of extreme high wind speeds the site will be closed after the clearance of all exposed hazardous materials, substances, operatives and personnel.
- 7. The Beaufort Scale will be used to determine wind speeds.

Beaufort Scale

Beaufort number	Wind Speed (mph)	Seaman's term		Effects on Land
2	4-7	Light Breeze	***	Wind felt on face; leaves rustle; vanes begin to move.
3	8-12	Gentle Breeze		Leaves, small twigs in constant motion; light flags extended.
4	13-18	Moderate Breeze	1	Dust, leaves and loose paper raised up; small branches move.
5	19-24	Fresh Breeze	W.Y.	Small trees begin to sway.
6	25-31	Strong Breeze	S 1/1	Large branches of trees in motion; whistling heard in wires.
7	32-38	Moderate Gale		Whole trees in motion; resistance felt in walking against the wind.
8	39-46	Fresh Gale		Twigs and small branches broken off trees.

Visitors.

- 1. Under the control of Wooldridge Ecotec Limited, all unauthorised people will be excluded from the site working areas by the provision and maintenance of security fence panels, lockable gates and a gate marshal.
- 2. Trespass and warning signs will be posted stating that all visitors to the site must report to the site agent before entering the site.
- 3. These arrangements will be monitored and directed by the site supervisor.
- 4. All visitors will report to the site office where they will be instructed to sign and date Wooldridge Ecotec Limited's visitors' book, recording their time of arrival and the purpose of their visit.
- 5. After this they will be issued with the appropriate safety equipment and protective clothing e.g. hardhat and boots prior to being escorted around the site by a member of the site team.
- 6. The signed and dated visitors' book will be re-signed recording the visitors' time of departure.
- 7. Wooldridge Ecotec Limited will instruct all visitors that they must not enter the active site areas.
- 8. They will also be informed that the presence of hazardous materials and structures may exist within these defined areas and that hazardous activities are also taking within the aforementioned areas.

Existing structures

All operatives are to be made aware of hazards that can cause risks to health that may not be physically or visually obvious. These are often perceived as negligible risks but in reality have an accumulative affect over time and in extreme cases can be fatal. All types of these hazardous materials must be considered to be either present or will arise during the progress of demolition work.

- 1. Examples of hazardous materials in structures under demolition are:
 - 2.1 Harmful by inhalation dust, fumes, gases, vapors, welding and cutting fumes, man made mineral fibres, asbestos, silica & quartz dust from concrete breaking, isocyanates from insulation foams.

- 2.2 Harmful in contact with skin and mucous membranes brick, stone, plaster, dust, acids & alkalis, chromate's, petrol some epoxy resins. General measures issue personnel protection equipment and site supervisor to give instruction.
- 2.3 Fragile and friable materials requiring special demolition or dismantling. General measures issue personnel protection equipment and site supervisor to give instruction.

Storage of Gas Cylinders.

- 1. The storage area for gas cylinders, temporary or permanent, must have a level base and be surrounded by a fence at least 2 metres high.
- 2. The storage area must be at least 5 metres away from boundaries, buildings, fixed sources of ignition and electrical equipment.
- 3. Signs must be clearly displayed on the fence indicating a gas storage area and prohibiting smoking and the use of any naked flame in the area.
- 4. There should be sufficient shelter to prevent the cylinders from being exposed to extremes of weather.

Mechanical Plant and Equipment

- 1. Plant operators are required to walk around the buildings with the site supervisor and banksmen before structural demolition commences.
- 2. Plant operators must agree the work areas and exclusion zones with the supervisor and banksmen.
- 3. Checks must be made for obstacles, uneven or sloping ground and for any basements, voids, ducts and underground tanks.
- 4. If found these areas must be levelled or backfilled to create the required safe route around the building. If this is not possible due to the lack of material or out of sequence work then these areas must be cordoned off and be deemed excluded areas.
- 5. Plant operators are to discuss the work with the banksmen so they are aware of their intentions and the sequence of work. Agree a means of communication with the banksmen.
- 6. If necessary enclose the machines working area with a line of Heras fence, creating a drop zone with all operatives and banksmen on the outside.
- 7. Ensure the machine is on a sufficiently level surface and that it can comfortably reach the structure to be demolished.
- 8. Do not "Stretch" outside the machines designed working radius.
- 9. Do not travel on uneven ground with the boom raised.

Commissioning and use of permit to work systems

- 1. Wooldridge Ecotec Limited will operate a "Permit to Work" system under the control of the project Site Supervisor.
- 2. All permits issued will only ever be valid for one working shift.
- 3. They will have to be renewed on a daily basis.
- 4. Permits to work will be issued for confined spaces, hot works and any below ground digging manually or remotely.
- 5. The Site Supervisor will ensure that only fully trained personnel will operate the systems. All permits will be issued and signed off by the site supervisor.

General Protection

- 1. All adequate physical protection will be afforded in the form of protection and working scaffolds with timber toe and edge protection boards, screens, Fire rated monoflex sheeting and warning signs to be used as necessary and where appropriate.
- 2. All arisings and debris will be cleared to the processing areas with due care and attention. Processing areas will be cleared of all operatives and continual monitoring will be carried out to ensure that no one enters any designated drop zone areas.

General Protection- Site Operatives

- 1. All demolition operatives will be under the control of Wooldridge Ecotec Limited's Site Supervisor. At the start of each day an informal meeting will be held by the Site Supervisor where the day's sequence of work will be discussed, instructions will be given to operatives and the appropriate plant, tools and PPE will be designated for the day.
- 2. An attendance register will be drawn up recording the names of all operatives present. The delegation of duties and roles are given which will include the named banksmen.
- 3. Machine working zones will be demarcated by physical barriers, usually Heras fencing. These areas will be large enough to allow the particular excavator to work unhindered.
- 4. No operatives will enter these areas while the machine is working. A banksman will stand outside the fence line to warn all other operatives to stay away. Signs will also be placed on these fences warning that access is prohibited and the area is a demolition drop zone.
- 5. The drop zone areas will be maintained by the banksmen. These areas will also be continually monitored by the site supervisor.

Deep Excavations (drop in Level).

- 1. If required scaffold poles will be cut and arranged to form protection barriers to include handrails (95cm minimum above ground level), toe boards and warning signs.
- 2. The protection barriers will be placed at least 2 metres from the edge of the drop in level.
- 3. The barriers will be maintained throughout the life of the project and left in position upon the completion of the works or until the aforementioned ground voids are back filled in compacted layers.
- 4. Appropriate signs will be strategically placed on this protection barrier warning anyone approaching of the drop in level and that demolition work is in progress.

High Level Working.

- 1. Is our principal intention to avoid placing any site operatives at high level to carry out demolition activities. All demolition work will be carried out by remote methods using a 360-degree excavator having a medium reach boom with all the appropriate implements. However should site operatives be placed at high level to carry out demolition activities the following equipment <u>may</u> be incorporated within the scope of the works if required and as necessary; -
 - Mobile scaffold towers having a two man-working platform with handrails, integral ladders and lockable wheels.
 - A mechanically operated working platform known as a MEWP may also be incorporated within the scope of the works should the working height increase to over 2.000M. The machine will be self-propelled with braked wheels having a working platform with integral handrails and safety rails. Note only a trained person will operate the machine.
 - NO ladders will be used for any working operations except for access and inspection purposes. However any ladders used for access or inspection will be properly secured in compliance with the new working practices laid out by the revised regulations.
- 2. All operatives working at high level will be equipped with all necessary protective clothing and equipment to ensure safe working conditions. The Personnel Protective Equipment (PPE) will include safety harnesses having lanyards secured to either a fixed anchor point of the existing building structure, a taut anchor safety line fixed to the building or the safety points of the MEWP's working platform.
- 3. Where reasonably practical continual monitoring will be carried out by the person in charge to ensure that all PPE is used where required and in the correct manor.

Fluorescent tubes (removal)

- 1. Check that the power has been terminated and is disconnected.
- 2. Position and lock the wheels of the mobile access tower.
- 3. Within the warehouse buildings a MEWP will be used to gain access to the light fittings.
- 4. Carefully remove the fluorescent tube individually passing the tube to a second operative who will lower the tube to the floor placing it in a heavy duty corrugated plastic tube coffin that are purpose made for the disposal of fluorescent tubes.
- 5. The container will be removed from the building to an awaiting bin, which has been allocated for the removal of the tubes.
- 6. The fluorescent tubes will be removed from site in the allocated bin by a specialist fluorescent tube waste company and deposited at the appropriate waste facility.
- 7. Extreme care will be taken not to break the fluorescent tubes fine glass. All the appropriate PPE will be used with special attention being given to the protection of the eyes and hands in the event of the fine glass of the fluorescent tubes being broken and the release off mercury gas and white powder.

Traffic Management.

- 1. Construction vehicles will access the site via a construction access point which will utilise the existing access arrangement. The existing site access permits all turning movements. Following discussions with the Council's Highways Department, a strategy will be put in place whereby the junction is restricted to right in/left out turn manoeuvres only for all construction vehicles.
- 2. As such, vehicles will be instructed to approach from the north on London Road and will leave by turning left out of the site to continue on London Road in the northbound direction. This arrangement has been tested using AutoTrack for a 10.2m tipper lorry and a 16.5m articulated vehicle. The results of the swept path analysis are provided within Appendix E at the rear of this document. A 10.2m tipper lorry represents the most common construction vehicle which will be required to access the site and a 16.5m represents the largest vehicle size that would be expected at the site. More information on the expected number and type of vehicles is discussed later in the note.
- 3. The proposed operation of the site access, i.e. the right in/left out arrangement, has implications for construction vehicle traffic routes. Large construction vehicles (i.e. HGVs) will be instructed to use the trunk road network where possible which is suitable for carrying HGV construction vehicles. To access the site, vehicles will be advised to use Junction 1 of the M3 to join the A316, the A310 and finally London Road before entering the site.
- 4. Vehicles leaving the site will be instructed to turn left and continue northbound on London Road. At the junction of London Road with Whitton Road (B361) vehicles will be advised to position themselves in the offside lane only in order to continue on the A310 and thus avoiding Whitton Road (a B road which is residential in nature). From the A310 travel north construction vehicles will be able to join the truck road network at the junction with Chertsety Road (A316), travelling west on this road leads to the A3 and travelling east leads to the A205 South Circular. Continuing north on the A310 leads to the A315 and then to Junction 1, M4.
- 5. The HGV construction vehicle routes are shown in Figure 1.
- 6. Cars, vans and small rigid lorries will be permitted to undertake all manoeuvres at the site access junction.
- 7. The Project Manager will be responsible for ensuring that all suppliers and contractors are informed of the appropriate route and the delivery booking system, which is discussed later in the note.

Site access control

- 8. Access gate will be set back approximately 10m in relation to London Road which will allow for a 10m vehicle to wait off the public highway before entering the site. In any event, security staff at the gate will monitor approved vehicles to ensure that there are no hold-ups in terms of accessing the site.
- 9. Any interaction with the public and the public highway will be minimised by segregation and the use of trained banksman, as appropriate. The use of a banksman will ensure that:

- Vehicle manoeuvres into and out of the site are monitored and assisted.
- Vehicles, whenever possible, do not stop at inappropriate locations on the highway causing disruption to traffic.
- All loading/unloading is undertaken on site or at a location which has been agreed with London Borough of Richmond (LBR) as part of the construction traffic management strategy.
- Sufficient space will be made available on site to enable vehicles to manoeuvre in and out
 of the development, with all general deliveries made within the site in order to minimise the
 impact of demolition on the surrounding network.
- A vehicle holding area will be provided within the site.
- All HGV construction vehicles turn right in and left out of the site only,
- 10. If a requirement exists for the delivery of an abnormal load / delivery which is likely to cause a disruption to the surrounding highway network, or which requires the use of an alternative route to access the site, then the LBR will be informed, and a specific Logistics Plan can be prepared and agreed with LBR for that movement, should this be necessary.

Access to the cottages and Network Rail land:

11. There is an existing access route serving four cottages and Network Rail land. This access is gained through a ramp which runs along the eastern boundary of the site and meets the site access at an acute angle. The cottages generate a small number of daily vehicle and pedestrian movements. However, the Network Rail land is understood to generate only occasional vehicle trips. Access to the cottages will be maintained throughout the demolition process. It is noted that before it closed, the site used to operate as a sorting office and due to its nature would have generated large vehicle movements on a regular basis. Therefore, in traffic terms, the demolition phase is not expected to be significantly different from the previous situation when the sorting office was in operation. In addition, security personnel will be present at the site gate and will ensure conflicts between construction vehicles and pedestrian car movements to the cottages are avoided.

Predicted traffic movements

- 12. Demolition works will generate short term increases in HGV movements on the highway in the vicinity of the site.
- 13. The data indicates that the number of vehicles will vary from week to week depending on the activity, although for the majority of the 12 week period the number of vehicles is expected to be in the order of 100 per week. This equates on average to approximately 20 vehicles per day on the basis of the proposed site operation times (Monday to Friday).
- 14. In general, the majority of the demolition vehicles will be rigid vehicles such as transit vans, 7.5t tipper trucks and bulker (roll-on-roll-off) lorries. Collectively, these two vehicle types represent over 85% of the total vehicles expected to access the site. The site will also need to be accessed by articulated low loader lorries for delivery of the demolition plant and concrete crusher. These will be limited to 12 deliveries, with 5 at the start of demolition, one at week 5 and the remainder at the end of the demolition. The site will also attract deliveries in vans/small lorries although the numbers are predicted to be low i.e. in the order of two vehicles per week.

Asbestos Removal

The results of the Refurbishment & Demolition Survey carried out by **WSP Environment & Energy** are set out in a report ref: **21842.001** issued **May 2011** indicates that there is non-notifiable asbestos containing materials on site. Wooldridge Ecotec shall remove all non-notifiable asbestos containing materials except the bitumen adhesive in accordance with The Control of Asbestos Regulations 2012, HSG 189/2 and HSG 210. Only operatives trained to HSG 210 standard will remove the non-notifiable ACM's.

- 1. All appropriate personnel protection equipment and clothing will be used and worn, commensurate with the work task in hand. Especially goggles, FFP3 dust masks, disposable coveralls and gloves.
- 2. All asbestos-based materials will be removed before the remaining building elements are demolished. Special attention will be taken to avoid plant being driven over the asbestos cement material. The asbestos waste and debris will be removed from the site as soon as possible to prevent being disturbed e.g. by moving vehicles.
- 3. If any of the material cannot be removed immediately it will be covered with heavy-duty Polythene. labeled as hazardous waste and stacked in a clearly visible place.
- 4. All asbestos-based arisings will be soaked with water to minimise fibre release and placed into asbestos bins before being transported to a licensed disposal facility by the use of sealed asbestos bins.
- 5. All consignment notes and disposal facility receipts will be kept as proof that the correct method of disposal has been strictly adhered to. At the end of the works all consignment notes and disposal facility receipts will be submitted to St James.

All asbestos-based materials will be removed in strict accordance and compliance to the relevant statutory documents. ☐ Health & Safety at Work Act 1974. ☐ The Control of Pollution (amended) Act 1986 ☐ The Management of Health & Safety at Work Regulations 1999. ☐ The Hazardous Waste Regulations 2005 ☐ The Control of Asbestos Regulations 2012. 6. At the end of the works all Consignment notes will be submitted to the CDM Co-ordinator to be incorporated within the Health and safety file for subsequent handover to St James. Waste Removal 1. Wooldridge Ecotec Limited will ensure that removal and disposal of all demolition arisings will be carried out in strict accordance and compliance to the relevant statutory documents; -☐ Health & Safety at Work Act 1974. ☐ The Control of Pollution Act 1989 (Amended) ☐ The Environmental Protection (Duty of Care) Regulations 1991 ☐ The Pollution Prevention and Control Regulations 2000 ☐ The Hazardous Waste (England and Wales) Regulations 2005

- 2. All the demolition arisings that will be leaving site will be segregated into five main waste streams. This will be inert waste, hazardous waste (including contaminated soils), excavated spoil, timber and metal.
- 3. All arisings and waste will be removed from the project site area and delivered to the Licensed Waste disposal facility. All assignment notes and disposal facility receipts will be kept as proof that the correct method of disposal has been strictly adhered to.

Waste Recycling

☐ The Site Waste Management Plans Regulations 2008

- 1. Wooldridge Ecotec aim to recycle as much of the demolition arisings as possible. This will include timber, metals, glass, fluorescent lamps, cables, concrete and brick.
- 2. All timber, metals, glass, fluorescent lamps and cables will be segregated into separate waste bins and will be taken to the appropriate licensed recycling facility.
- 3. All concrete and brick arisings will be processed and crushed to a uniform size (BS 6F2) and stockpiled on site for re-use during the construction phase.

Estimated Quantities of Waste & Recycled Materials.

Concrete & Brick	Metals	Timber	Mixed Construction Waste	Fluorescent Lamps
2 500 Cubic Metres at BS 6F2	100 tons	10 tons	20 tons	250kg

Site Ecological Constraints

The results of an ecological survey has determined that there is a low potential for roosting bats. This said St James will employ an ecologist to re-check all areas and buildings and trees within the site before any works begin. Any bats found will be dealt with by the ecologist. The ecologist will send notification to St James when it is safe to commence the demolition process.

Should any bats be encountered during any of these works, they will be left to disperse on their own accord; and, if able, works may progress at a different location. If disturbance of the bat is unavoidable (for instance if continuing could result in disturbance of the bat by noise or dust, or result in crushing, killing or injury of a bat) then it will be removed by the qualified ecologist and placed in alternative roost provision (i.e. within on-site bat boxes). If this is not possible owing to weather or other mitigating factors the bat will be released that evening or taken into care. In the unlikely event of a bat being injured, it will be immediately taken into care.

As foxes and other mammals are known to inhibit the area, any deep excavations left overnight will be covered up to prevent animals falling in.

METHOD OF WORKS

Services.

- 1. Check the termination certificates issued by St James in conjunction with the available site service drawings to determine the location of any remaining live services and the actual termination points.
- Exclude all live services from access by un-authorised operatives. This must be by locking or
 padlocking doors within structures or by surrounding external areas with Heras fencing. Warning
 signs must be displayed in these areas highlighting that live services are beyond the barriers and
 that all access is prohibited.
- 3. Physically and visually re-check that each service supply has been disconnected from the structure to be demolished. St James will available to attend site to verify, locate and explain the live and terminated services.

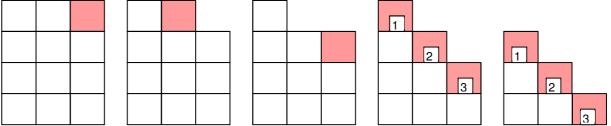
Soft Strip

- 1. Very little soft stripping will take place in the buildings. Fluorescent Tubes will be removed before any demolition takes place and sent to a recycling company.
- 2. All waste and recyclable materials will be segregated from the buildings at ground level using the demolition excavators fitted with rotating grabs.

3. The rotating grabs allow a high degree of dexterity which enables very accurate rates of waste segregation at ground level. This reduces the necessity for operatives to take part in potentially high risk manual handling and working at height operations.

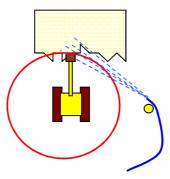
All Buildings

- 1. Following these activities, all of the remaining building structures will be completely demolished including the external walls, roof structures, structural frames (any intermediate columns), masonry and lightweight partitions, staircases and upper floors, ground slabs and foundations.
- 2. All will be done remotely by two 360° demolition excavators using rotating grabs and pulverisers as required. The direction of the demolition of the buildings is shown on the drawing above. No over sail of the demolition boundary will be permitted at any time by any plant or equipment.
- 3. All the works using the excavator will be conducted from firm and stable ground. The service drawings will be checked to identify any ducts, drains, manholes or voids in the area.
- 4. The excavator operator is required to walk around the building within the exclusion zone with the site supervisor and banksmen before any of the demolition begins.
- 5. Checks must be made for obstacles, uneven or sloping ground and for any basements, voids, ducts and underground tanks.
- 6. If found these areas must be levelled or backfilled to create the required safe route around the buildings. If this is not possible due to the lack of material or out of sequence work then these areas must be cordoned off and be deemed excluded areas.
- 7. The excavator operator must discuss the sequence of demolition with the supervisor and banksmen so they are aware of his intentions. Agree a means of communication with the banksmen.
- 8. Ensure the machine is on a sufficiently level surface and that it can comfortably reach the structure to be demolished. Starting at the top of the building reduce the structure in small increments one structural bay at a time.
- 9. Proceed to demolish the building in a progressive and careful manner by remote methods. The intention is to pull the demolition arisings into the buildings. This will be done very carefully a few courses of bricks at a time. Rotating demolition grabs now allow us to demolish brick walls and concrete structures safely still maintaining the structural integrity of the building.
- 10. The buildings will be demolished in sequence commencing with roof, moving down the external and internal walls one floor at a time to ground level. The building will be tiered to a 45 degree angle as it is demolished one structural bay at a time. A diagrammatic representation of tiering a building one structural bay at a time is below.



- 11. The works will stop periodically to remove any debris from the working area using the second excavator. Continue the above sequence until the building has been reduced to ground level.
- 12. This will be followed by the breaking out and grubbing up of the ground floor slabs, foundations and the basement structure.

- 13. Once the demolition starts no persons or operatives not connected with the demolition will be allowed into the demolition areas. These areas will be enclosed with Heras fencing and declared drop zones with all access prohibited while demolition is taking place. This will be monitored by the site supervisor at all times.
- 14. A banksman will stand outside the machines drop zone to prevent other site operatives, personnel, machines and vehicles from approaching the machine working zone.
- 15. The Banksman will also be in control of a hose to dampen the dust as the demolition progresses. He will stand parallel to the machine but away from the drop zone and machines working radius as indicated below.



- 16. Furthermore independent hoses and spray devices built into the excavators' tool attachment will apply light water sprays to the specific operating areas throughout the duration of the demolition works.
- 17. Watering down procedures will be maintained throughout the progress of the work contributing to the suppression of dust migration.
- 18. As the work progresses all arisings and debris will be stacked in preparation for removal from the site or to the crushing area. The arisings will be removed as the works progress being loaded into dump trucks and removed to the processing and crushing area.
- 19. Recyclable and waste materials will be loaded into independent waste bins or the waste bins of waiting vehicles. The vehicles are to be attended at all times, they will be fully loaded upon arrival and depart immediately when full.
- 20. A banksman or banksmen will attend to assist as necessary to guide vehicle and machine moves. All arisings and debris will be cleared when ever practicable and upon completion the site will be left clean and tidy, for inspection and handover.

Sequence of Building Demolition

The sequence of demolition is indicated on the site setup drawings is generally from the east to the west of the site.

Processing & Crushing

- 1. The crusher will be delivered to site on a low loader. The crusher will be unloaded within the site and not on the public highways.
- 2. The crusher will be sited and set up in accordance with manufacturers recommendations by competent operatives experienced in the preparation and operation of the equipment. He must only use the remote control or wireless control box to move the crusher.
- 3. Check to see that the area is clear of all operatives and plant when unloading and moving the crusher to the agreed crushing area.

- 4. All guards will be in place and secure prior to operation. All emergency stop and interlock systems will be verified as operating correctly prior to operation.
- 5. Water suppression equipment will be connected and the water supply pipes positioned as required.
- 6. The crushing area should be segregated from all other plant and operatives except the excavator or loading shovel that is in attendance to the crusher.

Crushing and Stockpiling Area

- 1. The area will be prepared for the siting of the crusher giving a stable base for the machine and allowing good access for both delivery vehicles and stockpiling plant to operate safely and unhindered.
- 2. The crusher operator will be responsible for coordinating the safe running of operations at the stockpiling and crushing site directly under the site supervisor.
- 3. He will direct all operatives at the crusher to cease work should there be a safety issue or incident, which requires rectification.
- 4. All operatives will be experienced, competent and suitably trained in working on and adjacent to the crushing plant and ancillary equipment.
- 5. All plant operations and emergency control buttons shall be in a defect free condition, and in easily accessible places.
- 6. All materials loaded into the crusher shall be of a type and size within the constraints and capacity of the plant and to which the crusher shall be able to reduce generated vibration.
- 7. Prior to the crushing operations commencing the plant shall have a facility of warning persons near to it that it is due to start up.
- 8. The Crusher Plant shall be fit for its purpose at all times and maintained in accordance with the PUWER Regulations.
- 9. The crusher jaws guard must be in place in the horizontal position prior to plant being started up and during all debris conveyor operations
- 10. Written manufacturer plant operations and emergency procedures shall be available with the plant at all times.

Removal of Underground Fuel Tanks.

For works on the underground fuel tanks please refer to the best practice procedure as laid out below from The BS 6187:2000 Code of Practice for Demolition. Extract below.

19.7 Vessels that contained flammable materials

19.7.1 General

CAUTION. The preparation and cleaning of plant that has contained flammable or combustible materials for internal inspection, hot work and demolition is a specialized activity. There is always the possibility that vessels can contain hazardous atmospheres. Unsafe work practices can result in fires or explosions, not only from such obvious sources as hot work, but also, e.g. from friction sparks, an increase in temperature, or build-up of electrostatic charge.

Consideration should be given to ensuring that during any of the activities discussed in this section, the external environment of the tank(s) is similarly free from potential hazards. Those engaged for such

work should be able to demonstrate their competence, including the earlier planning of the work, and making adequate provision for health and safety. The requirement to inform and/or consult the local authority petroleum officer, fire officer or other responsible person should be considered at the planning stage.

The information given in the decommissioning report should include confirmation of the nature of the contaminants present (if any), specification of appropriate decontamination procedures and precautions for the safe disposal of waste (including any vent and/or purge gases), standards to be adopted and named responsibilities for the work etc. Any specific structural features of tanks or vessels where gases, liquids or residues can be trapped, e.g. between the lining and the shell, tubular roof supports or floating roof crevices, should also be identified and taken into account when defining decontamination procedures.

Prior to commencing any work the operator/contractor should confirm the procedures to be carried out and be issued with the appropriate authority to work by the competent person controlling the activities (see clause 8 and 12.7).

19.7.2 Vessel cleaning and making safe

Where a vessel is to be prepared for removal and/or demolition, and in order to eliminate the risk of fire and explosion, it should be emptied and thoroughly cleaned by such procedures as:

- a) Steaming;
- b) Water or solvent washing/jetting;
- c) Other manual means;
- d) And finally "gas-freed" by forced ventilation or another suitable method, with a "gas-free" certificate issued as appropriate.

CAUTION 1. If vessels have contained even a small amount of flammable or combustible gas, liquid, sludge or solid, including dust or powder, and have not been cleaned effectively, an explosion can occur on application of the flame cutting blow torch. Alternatively, in cases where gas-freeing and cleaning cannot be readily carried out, e.g. if the vessel is underground, the equipment can be rendered temporarily safer after removal of as much of the contents as possible, by "inerting". Depending on the type of work planned however, consideration should be given to later thorough cleaning. "Inerting" is the process of completely filling vessels with materials such as one of the following to replace previous gaseous contents:

- a) Water;
- b) Inert gas (nitrogen or possibly "combustion" gas);
- c) Carbon dioxide (from dry ice):
- d) Nitrogen foam (there are limitations to the use of air foam);
- e) Hydrophobic foam.

CAUTION 2. If vessels have contained water, the atmosphere inside the vessel can be depleted of oxygen and contain flammable hydrogen due to corrosion. Similar preparation/decontamination procedures should be applied to associated pipework and equipment, prior to its dismantling and/or entry, though by nature of its construction, it can invariably be dismantled by "cold cutting" methods.

The cleaning/inerting techniques are employed to realize a specific purpose. Unless specified, it should not be assumed that the vessel is either suitable for entry and/or hot work When using gas inerting and purging techniques, it should be ensured that efficient dispersion/mixing of the inerting/purging gas occurs throughout the entire vessel and that ,there are no dead spaces. This should be confirmed by frequent atmosphere checks, as appropriate, and where possible in different parts of the vessel (using remote sampling).

Methods of cleaning and/or inerting should be chosen to be compatible with vessel characteristics and nature of contaminants etc. and potential hazards considered and taking into account that some

flammable materials will float. In all these operations the process should be managed to ensure that no flammable liquid, vapour or gas is allowed to enter any drainage or water course and that flammable vapours purged to atmosphere do not create an explosion or health hazard.

Certificates confirming that a vessel is, e.g. "Gas-free", "Safe for Entry" or "Safe for Hot work", should only be issued by a competent person, who should state for how long the certificate is valid and the nature of work permitted.

If the vessel is to be subsequently dismantled on site it should be ensured that it remains in a safe state in the interim period, and will be safe at the time of dismantling. Those making safe the tank and/or certifying this should be consulted before work proceeds.

19.7.3 Vessels above or below ground

19.7.3.1 Vessels below ground

Prior to excavation, vessels should be cleaned or made safe using the methods outlined in 19.7.2. If a method involving water filling is used, then water should be emptied from the vessel prior to lifting out of the excavation and subsequently refilled if necessary (see below).

Where a vessel surround is being excavated there should be an assessment to determine whether material in the surrounding area has been contaminated, either by leakage from the vessel or by spillage. If contamination has occurred, precautions including the following should be taken:

- a) Appropriate barriers should be placed around the work and hazard notices displayed;
- b) No smoking, naked lights or other potential ignition sources should be permitted in the vicinity. Equipment should either be suitable for use in a potentially flammable area (e.g. flame proof and non-sparking hand tools), or be located in a safe area (e.g. for plant such as compressors);
- c) A plentiful supply of water should be used to lessen the risk from sparking. The sides of excavations formed to enable removal of underground vessels should be made stable, e.g. by sloping back to a safe angle or by providing adequate support. After excavation and prior to removing the vessel(s) consideration should be given to providing the words "FLAMMABLE HAZARD" in clear conspicuous letters at each end or on opposite sides of the vessel.

Where further cleaning (see 19.7.2) is appropriate for subsequent activities, this should be carried out when the vessel has been removed from the ground to a more suitable and safe location.

Tank Removal Method

- 1. As the works progress, visual monitoring will take place, to ensure the safety of all those working within the project site area.
- 2. NO HOT CUTTING will be employed to remove this tank.
- 3. A trench will be dug to both sides and the front of the tank. The trenches will be to the full depth of the tank. This will allow the tank to be loosened away from its position.
- 4. Sand will then be loosely placed back into the trenches to allow access to the top of the tank. The sand will only fill half the original trench or enough to allow safe access to the top of the tank.
- 5. Chains will then be placed around the tank and it will be lifted out of position and onto the ground by the excavator.
- 6. Before releasing the chains timber will be placed on both sides of the tank to chock it in place.
- 7. Depending on the size of the tank it will be loaded onto a low loader if large or into the back of a 40 yard bin for removal.
- 8. The tank will be taken to a metal recycling facility for further processing.
- 9. Once the tank is removed the excavation will be back filled with site won material and tracked in by the excavator.

General

- 1. As the works progress, visual monitoring will take place, to ensure the safety of all those working within the project site area.
- 2. Where required and as necessary continual watering down procedures will be maintained throughout the progress of the work contributing to the suppression of dust migration.
- 3. As the work progresses all arisings and debris will be stacked in preparation for removal from the site or to the crushing area. They will be removed as the works progress being loaded into either independent waste containers or the waste containers of waiting vehicles.
- 4. The vehicles are to be attended at all times, they will be fully loaded upon arrival and depart immediately when full.
- 5. A banksman or banksmen will attend to assist as necessary. All arisings and debris will be cleared when ever practicable and upon completion the site will be left clean and tidy, for inspection and handover.
- 6. All boundary walls, fences and security structures, existing, new or temporary will be maintained and protected during the contract period.
- 7. Reverse site set up procedure and leave site.

COMPLETION

Upon completion of all the demolition works on the site, St James will be invited to undertake a site survey to ascertain that he is fully satisfied that all the works have been undertaken in accordance with the contract documents.

RESPONSIBILITY

The above method of work sequence will be adopted from the commencement through to the completion. It will be the responsibility of the Site Supervisor to ensure that all works are undertaken in accordance with this method statement.

Print Name		
Signature	Date	
For and on behalf of WOOLDRIDGE EC	OTEC LIMITED	