Construction Site Environmental / Waste Management Plan (CEWMP)

For

Bancroft View SHD

At

Greenhills Road,

Tallaght,

Dublin 24

Issue No	Prepared By	Checked By	Issue Date	Issued to
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Section 1 – Introduction

This Construction Environmental Management/Waste Management Plan (CEWMP) sets out the proposed principles and requirements to minimise the impacts of the construction process on the amenity of neighbouring occupiers and the environment and how these will be managed and mitigated in accordance with Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects published by the Department of the Environment, Heritage and Local Government in July 2006. The SWMP template in Appendix 1 shall include details of the various waste streams to be generated during site clearance and construction phases including expected tonnages as well as details of the specific licenced facilities (including permit numbers) to be employed for the prevention, minimisation, recovery and disposal of waste materials in accordance with the provisions of the Eastern Midlands regional Waste Management Plan 2015 – 2021 and updated as the project progresses.

The development of the CEWMP is an iterative process and is subject to on-going dialogue between stakeholders and consultees to ensure that the CEWMP addresses the necessary issues.

This CEMP will continue to be updated as and when more detailed information becomes available, during the works. The nature of the CEWMP requires that it is regularly monitored and updated where necessary when further details become available. The agreed contents of the CEWMP must be complied, unless otherwise agreed, with South Dublin Co Council. The Contractor shall work with the Client, Greenhills Living Ltd to review the CEWMP if problems arise in relation to the construction works of the new development consisting of 197 apartments over eight stories including commercial retail space at ground level, a gym, new ESB sub station, car park and ancillary plant spaces and storage buildings.

1.1 Objectives of this Document

This combined SEWMP contains specific arrangements relating to the management of the enabling, demolition, excavation and construction works to avoid, and manage any effects on:

- The environment;
- Existing surrounding communities;
- Local residents and businesses.

This CEWMP outlines how environmental issues that arise will be managed to ensure compliance with relevant legislation. It is to be implemented immediately upon possession of the site and complied with throughout the duration of the demolition & construction works (the works) to ensure the safe execution and the effective management of the project during the construction phases.

These proposals are intended to assist and enable third parties to clearly understand the nature of the works and the various activities associated with them. Attention will be paid to establishing and continuing close contact with the neighbouring land owners to make sure they are kept fully informed of current progress and of upcoming key events.

The CEWMP shall oblige the applicant, developer and contractor to commit to current best practice with regard to site management and to use all best endeavours to minimise off site impacts.

1.2 Training & Induction

All contractors employees must complete an IMS awareness course including an overview of the ISO14001environmental management system.

The contractor should ensure all employees are considered competent in environmental management.. Additional training should be delivered (Inc externally) as required.

Training provisions for subcontractors are to be discussed at appointment stage and the pre contract meeting. Additional training is to be delivered at the site inductions which includes environmental management. Specific project training is to be delivered as required.

Environmental toolbox talks are to be delivered throughout the Project both by the main contractor and their sub-contractors. The toolbox topics include (not limited to):

- Spill Control Management
- Water Pollution Prevention (Fuel & Oil)
- Dust & Air Quality
- Noise & Vibration
- Water Pollution (Silt)Water
- Pollution (Cement & Concrete)
- Tree Protection
- Waste Management Storage & Segregation of Waste
- Japanese Knotweed
- Giant Hogweed
- Material Handling & Housekeeping
- Archaeology
- Pumping & Overpumping
- Wash Down of Plant & Machinery
- Bats
- Badgers
- Be A Good Neighbour
- Working on Previous Developed Land

This CEWMP is to form part of all training including induction.

Project Overview / Scope of Works:

The proposed scope of works consists of the construction of 197 apartments over eight stories with a landscaped podium at first floor level and commercial /retail spaces, crèche, ,ESB sub station, car park at ground level. The development will also include drainage diversions, new drainage works and ancillary civil works associated with access landscaping and services.

Enabling Works

These works will consist of the construction of hoardings, site clearance, site investigation works drainage diversions along eastern boundary, erection of tower cranes and provision of temporary services. The site entrance will be from The Hibernian Estate Road.

Main Build

The scope of works broadly will consist of the construction of a new eight storey and seven storey blocks around a central courtyard and all associated site works. The gross floor area is approximately 19392m^2

All contractors and their employees will be required to adopt Safe Pass Scheme and /or equivalent skills certification (i.e. safe pass/Solas CSCS cards). This will be combined with the Main Contractor in house SHE training scheme for 100% of personnel involved with the project including all sub-contractor personnel who will be involved in the project for over a day. General operatives will be required to complete the SHE training element.

Programme & Working Hours (inc 24hr Emergency Contact)

Key programme dates and details are provided below.

Project Start Date:	TBA
Project Completion Date:	TBA
Working Times:	During the demolition and construction phase no heavy construction equipment/ machinery (to include pneumatic drills, construction vehicles, generators, etc) shall be operated on or adjacent to the construction site before 8.00a.m. or after 7.00p.m., Monday to Friday, and before 8.00 a.m. and after 1.00p.m. on Saturdays.
Working Times-Sunday:	No Work will be undertaken on a Sunday
Bank Holiday Working:	No Work will be undertaken on a Bank Holiday
Emergency Contact:	TBA

Prior approval will be sought for activities that need to take place outside of these times. Notice of such activities and approval will be sought from the Local Authority Environmental Health Officers via the Local Planning Authority.

The Principal/main Contractor (PC) will obtain all necessary consents from the relevant statutiry authorities, which will further define the hours of working on the site. Where appropriate advance notice of such activities will also be provided to nearby residential and business properties.

Start-up and close-down periods of up to an hour before and after core working hours may be used for activities such as arrival of workforce and staff on site; deliveries and unloading; maintenance and checking of plant and machinery; general refuelling; site inspections, and safety checks prior to commencing work; site meetings; and general site clean-up and departure.

Cumulative Impacts

Once contacts are established, the contractors project team will give due consideration to the cumulative impacts of construction (including neighbouring construction sites) in the planning of demolition activities and logistic movements beyond the perimeter of site. This will involve review of routes for public transport on approach and departure, cross coordination of approvals for external works (i.e. temporary occupation of roads and footpaths) and key work activities (with consideration of cumulative construction noise).

Safety Health Environmental Objectives for the Project

It is the aim of the project team to eliminate or minimise risk and to prevent ill health and injury to all site employees, subcontractors, site visitors, site neighbours and the public. To meet these objectives the main contractor will –

- Maintain zero notifiable accidents and incidents;
- Maintain and improve lost time accident record;
- Move away from safety legislation governance to a safety behavioural culture promoted via communication, coordination and training;
- To comply with the procedures detailed within this document to achieve and maintain a safe working environment for everyone on site;
- Evaluate & measure performance against this plan through regular safety and environmental inspections and audits;
- To eliminate or minimise risk and control the residual risks;
- Prevent ill health to all those on site through health surveillance;
- Promote proactive safety management and reduce reliance on reactive safety management.

Cooperation will be at all levels throughout the project through the structure and process established under the Safety, Health & Welfare at Work (Construction) Regulations 2006 to include amendments

2008, 2010, 2012 and 2013.

The main contractor will collaborate with all parties to provide theorganisation, advice and resources to meet this commitment so far as is reasonably practicable. The project will be carried out in accordance with the primary legislation and documents as detailed within the Legal Compliance section of this plan.

Key Project Contacts

Client:	Greenhills Living Ltd,
Principle Contractor	TBA
PSDP	TBA
Civil & Structural Engineer	FDA 250 Harolds Cross Road, Harolds Cross, Dublin 6
Services Consultant	EDC Engineers 4 grand Canal wharf, south Dock Road Dublin
Architect	C+W O'Brien No.1 Sarsfield Quay Dublin 7

Site Contacts

1. Full postal address of the site relating to the Construction works.

Lands on Greenhills Road (north of Bancroft Park, south/west of Hibernian Industrial Estate and east of Airton Road junction), Tallaght, Dublin 24

2. Contact details for the person responsible for submitting CMP

Name
Address
Tel
Email

3. Registered contact address details for the main contractor responsible for undertaking the works.

Name:
Address:
Tel:
Email:

4. Contact details of the site and project manager responsible for day-to-day management of the works.

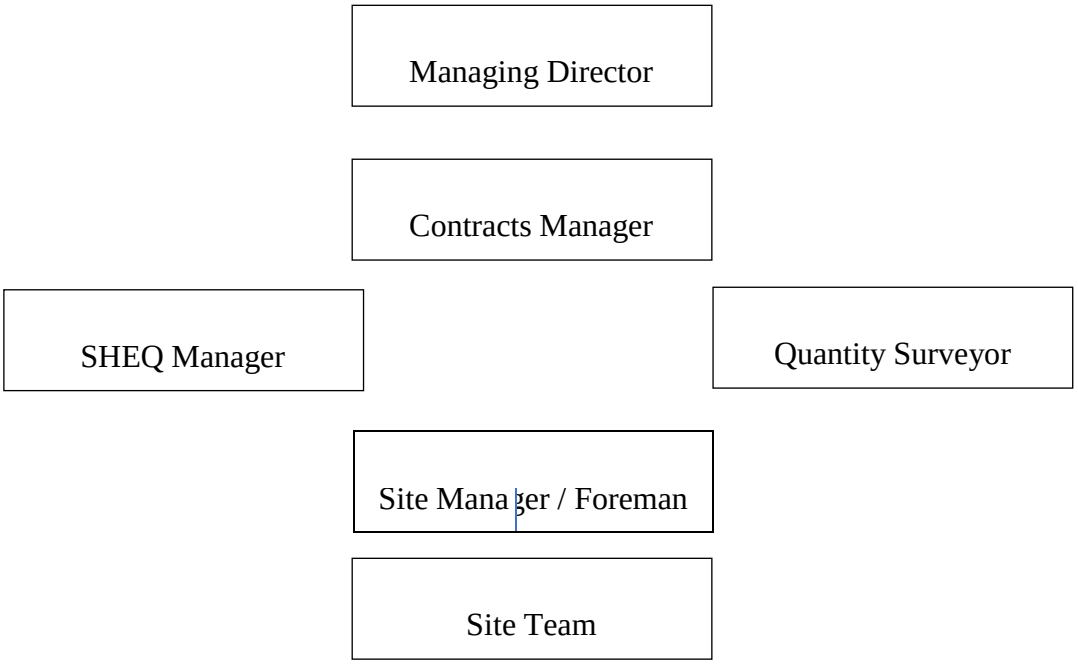
Name
Address
Tel:
Email

5. Contact details of the person responsible for dealing with any complaint from local residents and businesses, etc.

6. Contact details including the address where the main contractor accepts receipt of legal documents for the person responsible for the implementation of the CEMP.

Name:
Address:
Tel:
Email:

Main Contractor Project Organisational Structure



Roles & Responsibilities

Construction Director
The Construction Director has ultimate responsibility for SHE & Welfare throughout the organisation, and ensuring the implementation of this Plan including
• Ensuring that adequate resources are available;
• Ensuring SHEQ performance is regularly reviewed at Board level;
• Monitoring the effectiveness of the SHEQ Management System;
• Reviewing the Policy/Statement annually;
• Setting a good example on SHEQ matters.

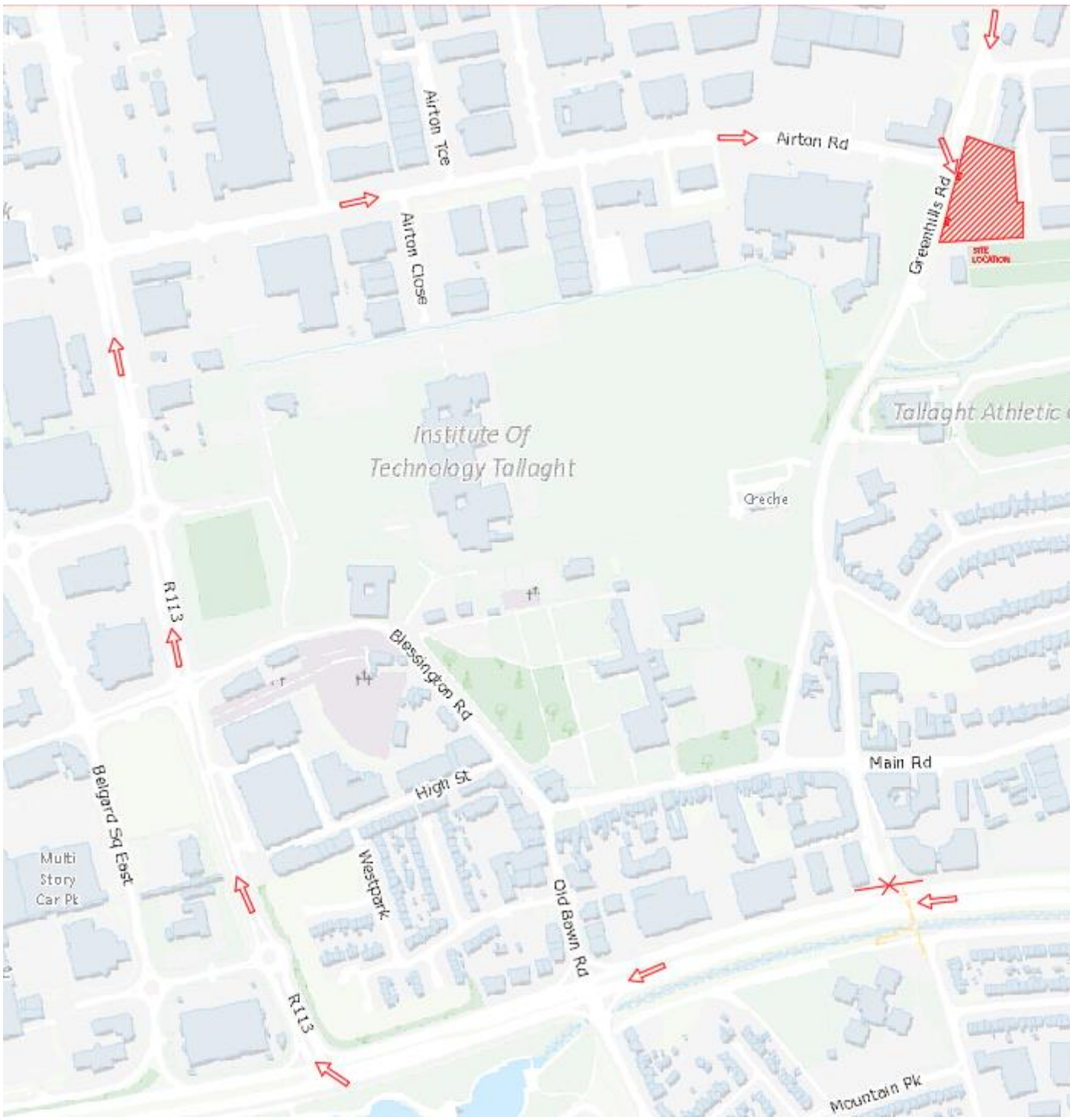
Contracts Manager:
• Responsible for Development of the Construction Programme & Delivery of the Scheme within the agreed timescale;
• Responsible for timely procurement of all Sub-contractors and packages with long lead in materials;
• Responsible for the development of the CEMP & Construction Phase SHEQ Plan and distribution of the Plan to all Sub-contractors;
• Responsible for ensuring the Site Team receives sufficient and timely Design Information to progress works on site;
• Responsible for ensuring the Site Team implement the main contractor Quality, Health, Safety andEnvironmental Procedures;
• Responsible for applying for all applicable SHE licences, permits and exceptions;
• Responsible for liaising with suitably qualified personnel regarding ecology, archaeology/built heritage, acoustics, dust and vibration matters. To ensure full compliance ad recommendations are adhered to;
• Responsible for ensuring Procedures for Accident & Incident Reporting are implemented;
• Responsible for Managing Sub-contractor performance in terms of Resource, Quality and ability to meet the programme objectives;
• Responsible for Project Reporting to the Client, Design Team and Operations Manager.

Site Manager:
• Management and Daily Organisation of the Site, including SHEQ, Environmental Aspects, Work Package Progress;
• Implement the main contractor Quality, Health, Safety and Environmental Procedures;
• Ensure all Site Operatives / Visitors to site receive a full Project Specific Site Induction;
• Management of Environmental ensuring full compliance with the Contract specification;
• Co-ordination with Sub-contractors on site and daily monitoring of Sub-contractor performance in terms of resource, plant, quality and SHEQ;
• Managing of all applicable SHEQ licences, permits and exceptions;
• Management of and ensuring full compliance ad recommendations are adhered to;
• Reviewing and Approving Method statements and Risk Assessments thus ensuring safe systems of work are in place for all Sub-contract Packages;
• Responsible for the monitoring of construction site impacts (waste, water, energy, biodiversity, deliveries) and Progress Reporting;
• Responsible for Project Administration and Document Control on site and ensuring all waste contractors licences and dockets are valid and entered onto the SWMP;
• Responsible for regular site environmental reports;
• Responsible for env/occupational noise monitoring;
• Responsible for Community Liaison;
• Temporary Works Co-ordinator.

Quantity Surveyor:
• Responsible for all Commercial aspects associated with the Project;
• Responsible for placing sub-contract orders and ensuring supply chain compliance with all t&c's, legal and contract requirements.

Safety, Health & Environmental Manager
• Monitor the effectiveness of all SHEQ procedures;
• Provide recommendations on staff training;
• Provide SHEQ advice to management and staff at all levels;
• Provide effective communications to personnel on all SHEQ issues;
• Responsible for completion of regular SHEQ audits on the Project;
• Assisting with the method statement review process to ensure that sub-contract Method statements and systems of work are compliant with current legislation;
• Monitoring SHEQ statistics and implementing action plans where necessary to deal with specific issues;
• Where required, assist in the investigation of SHE incidents/potential polluting incidents;

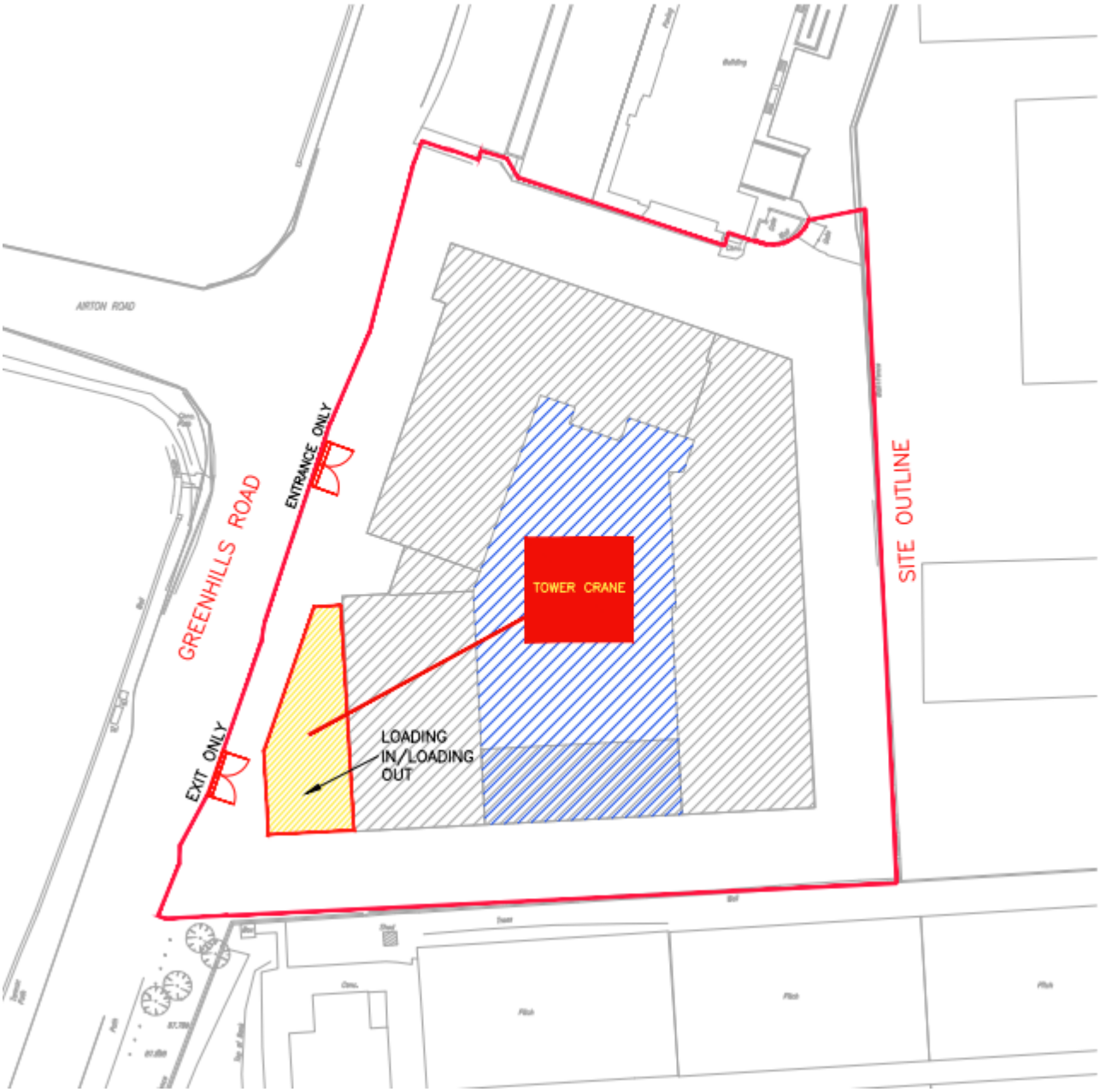
The Site & Surrounding Areas:



Site Location Outlined in Red

Site Access Route

The site is located adjacent the Greenhills Road. Access to the site will be from the Hibernian Estate Roads. The site is bounded by Industrial Units to the East, the Astro Park sports grounds in Bancroft Park to the South and an existing retail /commercial office building to the North with a basement car park which is accessed from the Site access road. There is a watercourse partially culverted under the Greenhills Road which runs parallel to the southern boundary of the site.


ARTON ROAD
GREENHILLS ROAD
ENTRANCE ONLY
EXIT ONLY
TOWER CRANE
LOADING
IN/LOADING
OUT
SITE OUTLINE

Site layout

Impact on Aviation

It is envisaged that any cranes used during construction will operate well below all of Casement's Obstacle Limitation Surfaces, the lowest of which lies at 93m+ above the highest element of the development. In any event, it will be necessary [under S.I.215 of 2005 – *'Irish Aviation Authority (Obstacles to Aircraft in Flight) Order'*] for priornotification of the use of any cranes to be submitted, at least 30 days in advance, to the Irish Aviation Authority, and to Casement Aerodrome [at *airspaceandobstacles@defenceforces.ie* or 01-4037681], who may need to issue notifications to pilots, and who may require cranes to be fitted with aviation warning lights.

Site Location and Facilities:

The project accommodation and site welfare facilities shall be within the site compound area which will be located within the site boundary.

During the works, welfare provisions shall include project offices, a canteen, drying room, male and female toilets. Our logistics proposals have been designed to provide controlled segregation between site operations, staff and the general public. To facilitate safe access to the work zone a safe route has been identified during all phases to enable operatives and visitors to access the project office and welfare area which are designated as a non-PPE zone. Before proceeding to the work areas, all operatives and visitors will need to complete a project induction and have full PPE.

The site entrance gates will be controlled to avoid any obstruction to the public footpath and kept shut when not in use to prevent any unauthorised persons entering the site. All vehicles either accessing or egressing the site will be supervised by a banksman or traffic marshal to ensure full consideration and safety of pedestrian and cyclists within the immediate vicinity of the site are maintained.

Details of the Site Management will be displayed on the site hoarding to enable any member of the public to make contact should an incident occur. Such incidents and / or complaints will be acted upon promptly, depending on the nature, with a review of our working procedures and traffic plan made if deemed necessary. Lighting and signage will be used on temporary structures/ skips/ hoardings, etc. A secure hoarding will be in place with lockable access points to prevent unauthorised access.

Working hours:
The following site working hours shall be strictly adhered for the entire duration of the works:

- 8am – 6pm Monday to Friday
- Saturday between 8am – 1pm.

All non-construction visitors to the project, will in the first instance make their way to the project offices. The office shall always be manned during normal working hours. The office will contain first aid equipment including a defibrillator and burns kit. A quantity of personal protective equipment (PPE) for visitors and the Client will be kept within the site office for their use when going to site. A meeting room will also be provided within this area.

Changing facilities
Changing facilities shall be provided for the use of all personnel working on the project. The changing rooms shall provide a clean, heated and secure area for operatives to store their personal belongings and provide a means of drying work clothes between shifts.

Rest room/ canteen
Canteen facilities will be supplied with tables and chairs for sitting down and eating food. Drinking water, tea and coffee making facilities in addition to the means for heating food shall also be provided. Walls shall be presented with notice boards with all relevant health and safety posters and

statutory documentation displayed.

WC facilities
Suitable male and female WC facilities shall be provided throughout all phases of the works.

Prior to works commencing, a well-presented hoarding / fencing will be provided around the perimeter of the site. Where the hoarding abuts the public highway lighting and protection shall be installed to the relevant highway standards.

All gates shall be kept locked shut when not in use to ensure suitable security measures are maintained at all times. All hoardings shall be inspected daily to ensure visual standards are maintained and kept clean at all times. Any damage or graffiti shall be repaired promptly.

The main contractor shall arrange for all appropriate licenses to be obtained from South Dublin County Council.

Access arrangements:
Routes for construction traffic involved in the delivery of goods and materials to and from the site will be agreed prior to commencement on site.

The safest contractor's access point is from the Hibernian Estate Road.

The PSCS shall liaise with the hospital and surrounding areas to notify them of works and to identify period's high trafficked time of morning and evening rush hours thus minimising congestion and conflict with other deliveries.

All deliveries will be delivered on a "just in time basis" and will be booked in with the projects logistics manager and booking in procedures.

Delivery vehicles
Special care will be taken to eliminate risk for pedestrians and cyclists. All vehicles approaching the site will have FORS compliant signage including 'Cyclist Do Not Pass on This Side' and will be fitted with a sufficient number of mirrors. All vehicular movements onsite and outside of site will be coordinated and managed by a banksman to ensure safe movement of traffic

All vehicles arriving on site shall be instructed to turn off their engines rather than leaving them to idle when parked within the designated loading area to the front of the site.

Managing deliveries
During delivery/ removal times, traffic and pedestrians will be managed and assisted by the banksman. All relevant signage, physical barriers and other protection measures will be in place to ensure the safety and segregation of pedestrians and road users from the construction works. As far as reasonably practicable the use of a banksman will limit the need for reversing alarms.

During the works all the site personnel will be easily identifiable via their high visibility PPE clothing. All personnel will be advised of the correct delivery times and procedures and will report any complaints back to the main contractor construction manager immediately. All vehicles will be required to provide at least 20 minutes notice to the main contractor construction manager before they arrive on site. During this time a sufficient number of banksmen will be available to assist and prepare for the delivery. This shall include the temporary closing off of the footpath in front of the project with appropriate barriers and signage. Where possible, pedestrians using the footpath shall be guided around the delivery vehicles if safe to do so.

A more detailed traffic management plan will be prepared in consultation with the other planned works in the area. The plan will specify the details of how deliveries will be safely undertaken, and the supervision required to ensure safety to delivery drivers, site staff and members of the public. Due to the nature of the surrounding road system the PSCS should liaise with the relevant authorities **(South Dublin County Council)** to determine if there are any further restrictions which may have an impact upon site traffic in the surrounding area. All traffic signage and legislation should be complied with at all times. **(Chapter 8 of the Traffic Signs Manual).**

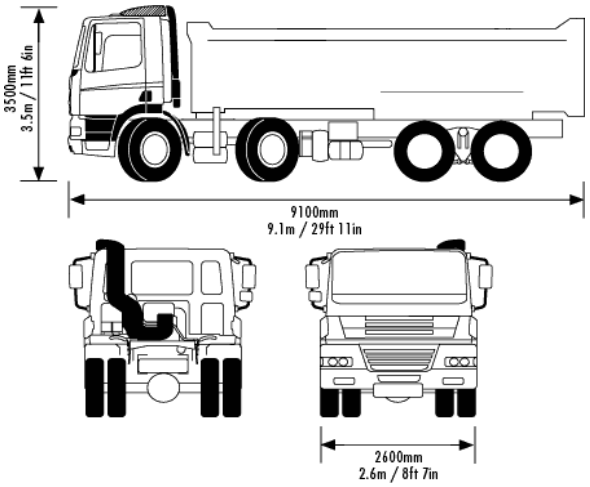
Various sized vehicles will visit site for deliveries and collections:

Small light-waste vehicles e.g. 3.5 ton tippers

Heavy skip wagons e.g. 20 ton Ro-Ro for rubbish and removal of arising

Heavy rigid flat-bed 10 to 20 ton i.e. plant / material deliveries, scaffold and salvage collection

The typical size of vehicle as shown below and will have a maximum of 32 tonne gross weight when loaded.



The type and frequency of the vehicles arriving at site will vary as work progresses.

For all vehicles over 3.5 tonnes must meet all of the following conditions:

- All drivers must have undertaken cycle awareness training such as the Safe Urban Driver module through FORS or similar.

All vehicles associated with the construction of the Development must:

- Have Side Guards fitted, unless it can be demonstrated to the reasonable satisfaction of the Employer, that the Lorry will not perform the function, for which it was built, if Side Guards are fitted.

- Have a close proximity warning system fitted comprising of front mounted, rear facing CCTV camera (or Fresnel Lens where this provides reliable alternative), a Close Proximity Sensor, an in-cab warning device (visual or audible) and an external warning device to make the road user in close proximity aware of the driver's planned manoeuvres.

- Have a Class VI mirror

- Bear prominent signage on the rear of the vehicle to warn cyclists of the dangers of passing the vehicle on the inside.

Need to consider whether the roads on the route(s) to and from the site are suitable for the size of vehicles to be used.

All deliveries will be kept within the site working hours with the frequency varying depending on the works as dictated by construction programme.

All details included within a detailed on 'Site Logistics Plan'.

Any vehicle arriving at site before or after the agreed time of delivery will be turned away.

Storage of materials
Construction materials and plant will be stored within the site boundaries and never on the highway. To reduce material, build up on site, delivery of materials shall be timed to coincide with construction activates on site. Collection vehicles/ skips will be covered to reduce the risk of debris falling onto the highway.

Sufficient site security measures will be put in place in order to prevent the illegal disposal of waste from site. General construction waste will be removed from the site periodically to maintain a clear and tidy environment. It will be removed by a specialist contractor and sorted at a waste transfer station to maximise recycling.

During phases and builders work, waste spoil will be loaded into roll on / off skips.

Construction vehicles will be scheduled at controlled intervals to suit daily traffic and pedestrian/ cyclist flows.

Waste Transport:
All waste deliveries and collections will be coordinated by the Site Manager.

Temporary services
All construction zones shall use only 110v. Charging points shall be provided within the welfare area to promote the use of battery-operated tools as far as practicable. All equipment shall be regularly tested (as required) and records held on site as necessary.

Fire safety
The site will conform to the Joint Code of Practice: Fire Prevention on Construction Sites.
The site area will have fire points consisting of 'screamer' units, CO2 and water fire extinguishers positioned in suitable locations and easily accessible to the fire marshals. These positions will be highlighted on the Emergency Plan and integrated into the overall fire strategy for the scheme.

All operatives are to be inducted before commencing work on site and during this induction they will be briefed on the project emergency procedures and the location of the muster point. The main contractors team will manage a strict permit to work procedure with all hot works covered by relevant hot works permits.

Pre-start Works
In accordance with the Safety, Health & Welfare at Work (Construction) Regulations 2006 to include amendments 2008, 2010, 2012 and 2013", the client will complete the AF2 Notification of the Project and issue the main contractor with a copy to display on site.

- Preparation of all Safety & Environmental documentation including all work package method statements and risk assessments;
- Notification to surrounding neighbours and other parties that could be affected by the works through arrangement of liaison meetings, consultations and newsletters;
- Compilation & organisation of drawings, survey reports, licences, agreements etc;
- Organisation of sub-contract and consultant work packages;
- Notification of any notifiable asbestos works to the HSA;
- Establishment of all emergency procedures and the requirements of the Fire / Emergency Plan on site;
- Development / revision of the Site Traffic & Pedestrian Management Plan;
- Review of subcontractor method statements and risk assessments;
- Site H.S.E Inductions for company employees and those of sub-contractors;
- Organisation and delivery of initial site plant, and equipment;
- Establishment & commissioning of all environmental monitoring equipment required by the Environmental Management Plan (SEMP);
- Detailed temporary works design;
- Approvals and licences to facilitate construction;
- Provide information to the Employer to discharge the applicable Pre-Commencement Conditions.

Demolition & Construction Methodology
The main contractor will adopt and implement the ICE Demolition Protocol. This will include a pre-demolition audit on materials that can be reclaimed and recycled, so reducing the cost and environmental impact of waste disposal, bringing savings from re-using existing materials and earnings from selling those that aren't needed. It will identify volumes of wastes specific to the project including a plan for re-use, recycling and recovery activities prior to work starting.

Temporary facilities
Proposals for the logistics strategy to service the project are to be carefully considered to address any likely concerns,for immediate neighbours and the public. The approach will be that of understanding the importance of being a good neighbour and the approach to construction should be holistic- to seek to leave behind a better environment that we began with. The approach should also be designed to minimise the impact on the passing pedestrians, traffic and local residents whilst ensuring the efficient delivery of the scheme.

Commissioning and completion
Commissioning, snagging and inspections should be progressively be carried out in the building as areas are completed.

Environmental Considerations

Managing Environmental Impact

This management plan aims to set out how the environmental requirements will be met. The specific measures to be implemented by the main contractor on the project will include:

- Liaison with the Client's representatives, Regulatory bodies and Pollution Team regularly, agreeing routine arrangements for the site's activities and ensuring compliance applicable legislative and contract requirements;
- The Contracts Manager has responsibility for establishing and maintaining contact with the Client's professional team, neighbouring properties and local residents, and keeping them informed of construction matters likely to affect them. The Contracts Manager will be assisted by the SHEQ Manager and Site Team;
- This liaison will include the regular and frequent distribution of Newsletters and attendance at meetings at the request of the Client and with representatives of local residents' groups;
- The main contractor's nominated person will advise the Pollution Team within 24 hours of any incidentsof non-compliance with guidance and health and safety issues. The Contractor will respond to any reports referred by the Client's representatives, the Gardai or other agencies within 24 hours, or as soon as reasonably practicable;
- The main contractor will maintain on site, a system for recording any incidents and any ameliorative action taken for inspection by the Client representatives. This will be forwarded to the Project Team on a regular basis. The contractor will ensure as far as is reasonably practical, that necessary action has been taken and steps to avoid recurrence have been implemented;
- The main contractor will provide out of hours emergency contact phone numbers;
- The contractor's nominated person will attend reviews with the Local authority or Environmental agencies, or otherwise as requested;
- The main contractor will facilitate to undertake regular planned inspections of the site to check compliance with associated records;
- The main contractor commit to adopting and implementing the ICE Demolition Protocol. This will include a pre-demolition audit on materials that can be reclaimed and recycled, so reducing thecost and environmental impact of waste disposal, bringing savings from re-using existing materials and earnings from selling those that aren't needed. It will identify volumes of wastes specific to the project including a plan for re-use, recycling and recovery activities prior to work starting. The pre-demolition audit will be carried out in accordance and the Site Waste Management Plan;
- The main contractor will apply for prior consent for proposals to conduct noisy demolition and/or construction works. The application will be submitted a minimum of 28 days before works commence on site.

Air quality, Dust & Emissions

The main contractor, as far as reasonably practical, will seek to control and limit emissions to the atmosphere in terms of gaseous and particulate pollutants from vehicles and plant used on site and dust from construction activities.

The site activities will be assessed in accordance with all applicable legislative requirements. The main contractor will submit a statement for approval that identifies proposed dust control measures before external work starts. Special precautions must be taken if materials containing asbestos are encountered.

To ensure the environmental impacts are minimised, the following control measures will be implemented throughout works on site:

- The generation of dust from demolition activities will be controlled and measures including the use of physical screening and dampening down will be considered throughout;
- All loaded skips and lorries leaving the site to be covered;
- The generation of dust whilst loading or unloading materials must be controlled with the use of bagging, sheeting and damping down;
- Suppression of dust using water will be carried out at all key stages of demolition and construction activity;
- No burning of waste materials takes place on site;
- There is an adequate water supply on the site. A temporary water supply network will be installed on site;
- Site hoarding, barriers and scaffolding are kept clean;
- If any materials need to be cut on site, water suppression will be used at all times;
- Promotion of reuse of all timber off cuts;
- Loading of material into skips within designated bays/ areas;
- If necessary, clean public roads and access routes using wet sweeping methods;
- Vehicles working on site have exhausts positioned such that the risk of re-suspension of ground dust is minimised (exhausts should preferably point upwards), where reasonably practicable;
- All vehicles carrying loose or potentially dusty material to or from the site are fully sheeted;
- Waste material with the potential to produce dust to be stockpiled away from site boundaries;
- Minimise the amount of stockpiled material held on site;
- Sheet, seal or damp down unavoidable stockpiles of excavated material held on site, where required;
- Avoid double handling of material wherever reasonably practicable;
- Ensure water suppression is used during demolition operations;
- Sheet or otherwise enclose loaded bins and skips;
- Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction;
- The engines of all vehicles and plant on site are not left running unnecessarily to prevent exhaust;
- Use low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices;
- Use ultra-low sulphur fuels in plant and vehicles;
- That plant will be well maintained, with routine servicing of plant and vehicles. On site servicing and maintenance to be carried out where possible;
- All non-mobile machinery NRMM will meet or exceed the emissions specifications / standards targeted for the project (Euro 6 targeted, Euro 5 minimum accepted engine emissions specification);
- Details of plant covered by NRMM requirements will be entered by the appointed Environmental Manager on the NRMM website;
- That all project vehicles, including off-road vehicles, hold current MOT certificates where required;

- Carry out site inspections regularly to monitor compliance with dust control procedures set out above and record the results of the inspections, including nil returns, in a project logbook for inspection on request;
- Increase the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions;
- Record any exceptional incidents causing dust episodes on or off the site and the action taken to resolve the situation in the project logbook;
- All contained refrigerant gases or other hazardous substances that could have an adverse environmental impact will be removed by a specialist licensed sub-contractor for disposal in accordance with the hazardous waste regulations;
- An appointed person will oversee/control activities and handle complaints.

Dust monitoring will be carried out during potential dust producing activities. The assessment will look at the dust raising potential of construction activities proximity to potential receptors and the duration of activities at each location. The findings should be presented to the Client's representatives in the monthly report.

Waste Management & Resource Efficiency

The waste management strategy will aim to maximise secondary material use within the new construction of the site and to lessen the demand on primary resources so producing an increase in net resource efficiency.

The main contractor will confirm that all works will be completed in compliance with the *Employer's* requirements for reducing, reusing, and recovering waste materials and the provisions of the Eastern Midlands regional Waste Management Plan 2015 – 2021 with waste material shall be delivered to authorized waste recovery/disposal facilities only with detailed records kept for all waste streams moved off site as set out within the Waste Management (Collection Permit) Regulations 2007 as amended.
The *Employer's* aim is to minimise any adverse impacts of the works on the environment. The main contractor will achieve this through the design process, materials selection, construction techniques, and operational methods.

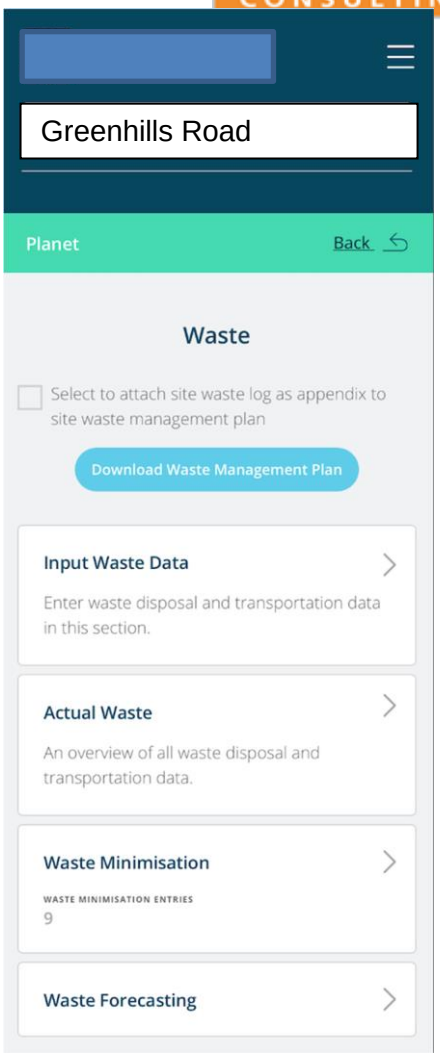
The main contractor will apply the WRAP Designing Out Waste guidance to identify, prioritise and implement ways of meeting the project targets for waste. This includes:

- Designing Out Waste: A design team guide for buildings;
- Designing Out Waste: A design team guide for civil engineering Parts 1 & 2,

The main contractor will make use of additional WRAP guidance in the Resource Efficiency Knowledge base hosted on the **Ciria website**.

The main contractor will use WRAP's Designing Out Waste Tools / Net Waste Tool, and/or their own SustainIQ software or similar to forecast waste quantities, quantify potential reductions in waste and costs, identify actionsto reduce and recover waste, and quantify and select materials with reused and recycled content.

The main contractor will implement cost-effective methods of good practice waste minimisation during any design and construction stages of theproject. This will include a Site Waste Management Plan (SWMP) that will work towards achieving the KEI's outlined in the ContractorsSustainability Report (SCR).



Site Waste Management Plan

To assist the effective management and minimisation of waste, The main contractor will develop and implement a SWMP to achieve good practice in line with guidance published by WRAP and other relevant organisations.

The Site Waste Management Plan will minimise waste from on-site operations and demonstrates how these measures have been implemented. The SWMP shall be maintained by the main contractor throughout the Contract period. The SWMP shall be issued to the *Contracts Manager* for consideration prior to commencement of theworks.

The main contractor will provide the *Project Manager* with a copy of the completed Site Waste Management Plan, reporting the forecast andactual performance for waste quantities, disposal routes, and reused and recycled content used in construction.

The main contractor will develop, implement, monitor, measure, and reporton their site waste management plan using their sustainability software SustainIQ or similar.

The Site Waste Management Plan includes:

- Project details;
- Project Team – showing details of their roles;
- Duty of Care Waste Management requirements;
- Waste Minimisation & Resource Management Plan;
- Waste forecast;
- Actual Waste (Non-hazardous & Non-hazardous);
- Sign off.

Site Waste Management Plan

Project Details

Project Name		Project Reference	
Address 1		Address 2	
City		Postcode	
Region		Value	
Floor Size		Category	
Type		Waste Unit	
Start Date		Programme (Weeks)	

Description: The scope of works comprise of enabling works and the Main Build and associated siteworks. Construction of a new 119 space surface carpark with associated surface water drainage, attenuation, lighting, access barriers, footpaths and ancillary site services. The works also entail the demolition of an existing boiler house and provision of a trenching for heating pipes and provision of foundations and support slabe for a new packaged plant room. Removal of an existing surface car park together with site clearance (including tree removal/tree protection works) and ground works to facilitate the redevelopment of the site. The proposed redevelopment comprises of the provision of a new 3-storey building (circa 44,164 sq ft) and all associated site development works. Works also include the replacement of an existing drainage culvert which runs under the entrance to St. Francis Hospice and associated civil engineering works.

Project Team

Role	Name	Company	Contact
Contracts Manager			
Site Manager			
H&S Advisor			
IMS Advisor			
Contracts Director			

Declaration:
We agree that the 'Client' and the 'Principal contractor' will take reasonable steps to ensure waste duty of care Waste Management (Collection Permit) Regulations, 2007 and Waste Management (Collection Permit) (Amendment) Regulations 2008, is complied with, materials are handled efficiently and waste is managed appropriately.

The site waste management plan is produced by the Contracts Director and is assisted by the SHEQ Manager and appointed waste contractor. The SWMP is a live documented that is reviewed and updated throughout the project. The SWMP outlines the roles and responsibilities, timescales and actions to be completed to achieve the targets. The waste targets for this project are defined by the LEED assessment.

Waste minimisation actions within the SWMP include:

- Minimising raw material waste through analysing design and construction techniques where possible;
- A commitment to develop waste minimisation opportunities by maintaining a role in the management of the supply chain during construction. Measures such as bulk buying will be utilised to facilitate this;
- Liaison with suppliers to enable packaging material is to be sent back for reuse, the use of offcuts where possible and the recycling of off-cut material by the supplier;
- Engaging contractors in the process of maximising the use of recycled aggregates for hardcore and alternative cements according to application;
- To ensure compliance with legislative requirements, only licensed waste hauliers, waste management contractors and landfill sites will be used;
- Waste Collection Permits and Waste Facility licences will be inspected prior to waste being transferred off site;
- Suitable protection measures will be incorporated in the design of the waste management area to prevent pollution, and regular inspections carried out to ensure that stored waste is covered by present accidental spillage and from being blown away;
- Movement of waste by haul road and public highways will avoid, where possible, the use of access routes through residential areas. When leaving site, vehicles will be sheeted/covered to prevent any escape of materials onto the public highway;
- Waste transfer notes will be retained and will fully describe the waste in terms of type, quantity and containment in accordance with relevant regulations. Information regarding the type and quantity of material returned to the supplier and the contractor or contractors will also hold copies of all waste documentation;
- Achieve less than 3.4m3/100m2 (construction stage waste);
- Divert 90% of waste from landfill (construction stage);

- Divert 90% waste from landfill (demolition).

The waste contractor appointed to this project is: TBA

Corporate Objective for Waste Reduction

In addition to the above, The main contractor will commit to reducing waste to landfill by a minimum of 90%.

Waste Reduction and Recovery

The main contractor will ensure the following targets are achieved:

Waste Reduction and Recovery Targets	
Action	**Target**
Reduce overall waste to less than:	3.4 tonnes per £100k construction value
Excavation, demolition, strip-out and construction materials, where applicable, to be reused, recycled or recovered for another use (on or off site) to at least:	90%

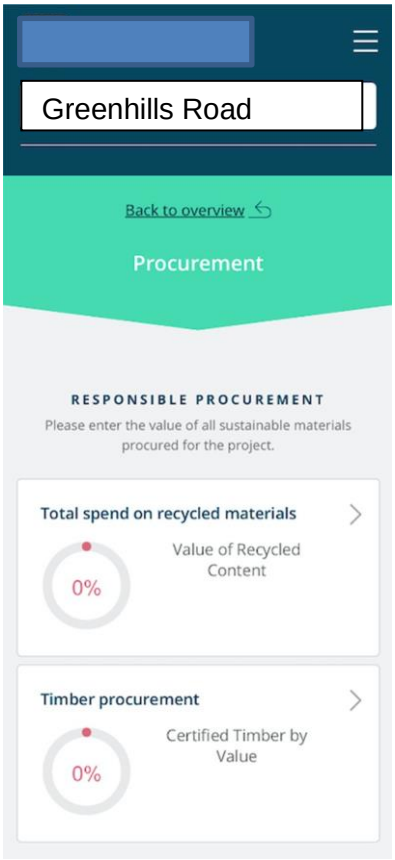
We will provide details of any proposed exportation/importation of soil and stone materials for the site including tonnages and confirm the destination/source location of materials as applicable – refer to SWMP template in Appendix 1.

Reused / Recycled Content of Products and Materials

The main contractor shall calculate and report the recycled/reused contentof materials using SustainIQ or similar software.

The main contractor will demonstrate that the most cost effective, includingcost-neutral opportunities to increase the value of materials derivingfrom recycled and re-used content have been identified and implemented, and that targeted improvements made in the total recycled content above 'baseline practice' for the project have been quantified.

All timber and wood derived products acquired by the main contractor and supply chain for use in the performance of the contract shall be certified as legal and sustainable from a scheme or schemes which are recognised as delivering current Government requirements for timber procurement. All timber will be sourced from FSC/PEFC accredited suppliers, monitored, measured and reporting using SustainIQ or similar software.



Appointment of Subcontractors and their Waste Management Responsibilities

The main contractor will confirm they will appoint subcontractors and suppliersthat agree to meeting the minimum recovery rates (where applicable) and to support our ability to measure, monitor and report actual waste during the works. All subcontractors and suppliers are registered on SustainIQ or similar software to facilitate reporting.

Hazardous Waste Management
Where any hazardous waste is to be handled for disposal this will be carried out in accordance with all applicable legislation and a fully developed risk assessment. Where a potentially hazardous waste cannot be identified then a competent waste management company or consultant will be employed to determine what the substance is, the required control measures for handling it, and to provide advice on its removal, transportation and disposal.

To comply with hazardous waste regulations a maximum of 80 cubic metres of Hazardous waste will be stored on site at any one time. Any clinical waste or drug related debris (sharps) encountered will be collected in accordance with established company methods and disposed of properly.

Categories of hazardous waste during the construction phase may consist of:

- Contaminated land;
- Refractory Ceramic Fibres;
- Fluorescent light tubes;
- Waste electronic and electrical equipment;
- Plaster board with a sulphate content of more than 10%;
- Waste oils etc;
- Ferrous and non-ferrous materials;
- All generated reinforced concrete waste;
- General fit out waste.

Hazardous wastes will be segregated and stored separately from other waste fractions to avoid contamination and risk to the environment and personnel. Compliance with the following mandatory provisions will be carefully monitored and enforced:

All substances coming onto site and all work activities which may involve or generate hazardous substances will be managed and controlled in accordance with the 'Waste Management (Hazardous Waste) Regulations 1998-2000 and best practice guidance, such as that published by the EPA/local authorities.

Non-Hazardous Waste Management
All non-Hazardous wastes will be removed and loaded into suitable containment of various capacities in the logistics / loading area. Non-hazardous wastes will consist of:

- Mixed construction & demolition waste;
- Inert;
- Concrete / brick / hardcore;
- Gypsum & plasterboard;
- Fixtures, fittings & finishes;
- Office furniture and carpeting;
- Timber;
- Mixed metals;
- Packaging waste;
- Glass;
- Other.

All generated construction wastes will be sorted for reuse and recycling then placed into their respective segregated Roll-on-off containment by hand or by a mechanical excavator. Licensed carriers will remove other residual waste, i.e. general office waste, etc from site to suitable licensed disposal facility sites. Where possible, segregation and recycling of materials, such as office paper, food waste will be undertaken.

All asbestos containing materials identified will be removed and plasterboard waste will be removed and placed into their own designated waste skips. This will then be transported to a plasterboard recycling facility known to the company. The main contractor will maintain disposal records for all waste for any hazardous waste generated and removed off site. Details of final waste destinations, waste collection

permit numbers, removal dates and quantities shall be maintained onsite and subject to waste enforcement inspections.

Waste Management Documentation
All Hazardous wastes will be disposed of in accordance with the Hazardous Waste Regulations Duty of Care Consignment Note procedures. They must be removed by a licensed hazardous waste removal company for disposal at the appropriate licensed hazardous disposal site.

All non-hazardous wastes will be placed into open waste skips provided by approved, designated waste hauliers. All non- hazardous wastes will be disposed of off-site at a designated licensed disposal facility. Company waste transfer dockets (WTN's) will be issued for each consignment. The collection & recording / management of all such documentation will be undertaken by the site level.

All hauliers will hold a valid waste collection permit for any construction and demolition waste material collected from the site and that both collection and facility permit numbers are provided as part of the C and D Waste Management Plan. Waste material shall be delivered to authorized waste recovery/disposal facilities only with detailed records kept for all waste streams moved of site as set out in the Waste Management Plan. Waste material shall be delivered to authorized waste recovery/disposal facilities only with detailed records kept for all waste streams moved off site as set out within the Waste Management (Collection Permit) Regulations 2007 as amended.

See SWMP Template in Appendix 1 – Duty of Care Contractors/Duty of Care Facilities and Waste Entries section of the plan.

Asbestos
The main contractor will have an appropriate method statement in place such that if suspected asbestos materials are encountered, a sample can be taken to confirm the nature of the material prior to any work in that area. – TBC at later stage.

If asbestos removal is required, site–specific asbestos removal specification and method statements be produced in order to facilitate any asbestos removal works. The waste generated from asbestos removal should be notified and disposed of in accordance with the Waste Management (Hazardous Waste) Regulations 1998-2000. The main contractor will ensure that adequate Duty of Care provisions are put in place for the transportation and disposal of wastes from the site in line with the obligations of the Regulations. In accordance with Regulations, it is advised that a management plan is produced and a duty holder be appointed to coordinate and oversee the management of the asbestos at the site.

Construction Site Impacts

Sustainability Manager:
The main contractor will appoint a Site Sustainability Manager to ensure that ongoing compliance with the relevant sustainability performance/process criteria, during the Construction, Handover and Close Out stages are adhered too throughout.

Their role will include carrying out spot checks, with the relevant authority and, where necessary, require action to be taken to address shortcomings in compliance. This will include the monitoring of site activities with sufficient frequency to ensure that risks of non-compliance are minimised.

They will report on progress at relevant project team meetings including identifying potential areas of non-compliance and any action needed to mitigate them.

Monitoring of Site Impacts:
Monitoring, measuring and reporting of environmental performance will be completed using the main contractors sustainability software. This allows the company to monitor, measure and reporting real time directly from site.

In order to ensure best practice measures are implemented on site, the Sustainability Champion will oversee the monitoring, recording and reporting of energy, water and transport consumption data resulting from all construction processes.

Energy consumption / CO2 emissions resulting from energy use on site:
Monitoring and recording data on energy (electricity and diesel) consumption (kWh) from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes.

The monitoring will include the checking of electricity meters and/or the recording of diesel consumption on a monthly basis. An analysis of the results will be displayed as a graph in a prominent location within the site office. The results will show both monthly and total consumption over the project duration and how actual consumption compares to the targets set.

In addition to the above, the results of the metering will be presented each month as part of the contractor's progress report and, upon practical completion of the development, we will provide a project Site Impacts report which will include a summary of all monthly readings/analysis including:

- The total project energy consumption (total kWh and kWh/£100k of project value).
- The total project carbon dioxide emissions (total kgCO2eq and kgCO2eq/£100k of project value)

Water use on site
Monitoring and recording data on water consumption (m3) from the use of construction plant, equipment (mobile and fixed) and site accommodation necessary for completion of all construction processes.

Monitoring will include the checking of meters and/or the recording of any water deliveries (bowsers) on a monthly basis. An analysis of the results will be displayed as a graph in a prominent location within the site office. The results will show both monthly and total consumption over the project duration and how actual consumption compares to the targets set.

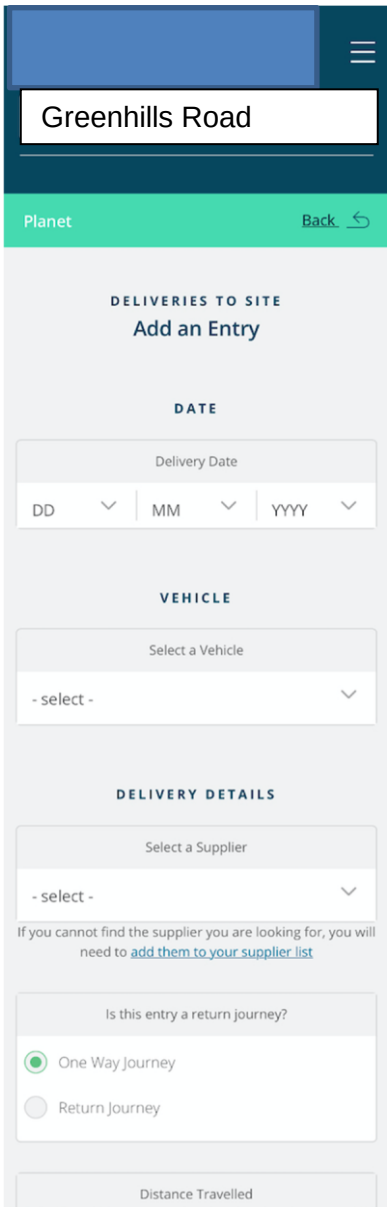
In addition to the above, the results of the metering will be presented each month as part of the contractor's progress report and, upon practical completion of the development, the main contractor will provide a project Site Impacts report which will include:

- A summary of all monthly readings/analysis and also the total water consumption (total m3 of water/€100k of project value) minus any recycled water used throughout the construction process.

Transport CO2 emissions resulting from material deliveries and waste collection

Monitoring and recording data on transport activity associated with the construction process (i.e. delivery of construction materials and removal of waste materials). This monitoring will cover:

- Transport of materials (i.e. building fabric, insulation, ground work and landscaping materials), from the factory gate to the building site, including any transport, intermediate storage and distribution.
- Transport of construction waste from the construction gate to waste disposal processing / recovery centre gate. The scope of this monitoring will cover the construction waste groups outlined in the project's site waste management plan (SWMP)



An analysis of the results will be displayed as a graph in a prominent location within the site office. The results for materials and waste (to be reported separately) will show both monthly and total consumption over the project duration and confirm how actual consumption compares to the targets set. The results will cover the following:

- The total fuel consumption (litres)
- The total carbon dioxide emissions (kgCO2),
- The total distance travelled (km)

In addition to the above, the results of the monitoring will be presented each month as part of the contractor's progress report.

Upon practical completion of the development, we will provide a project Site Impacts report which will include:

- A summary of all monthly readings/analysis and also the total fuel consumption (litres)
- The total carbon dioxide emissions (kgCO2)
- The total distance travelled (km)

Environmental Management System:

The main contractor will operate a third party accredited EnvironmentalManagement System (EMS) ISO14001.

Upon practical completion of the development the main contractor will provide all relevant information relating to theabove. This shall be presented as a Site Impacts report and shall include the following:

- Completed copies of the site monitoring records covering the entire construction process (in accordance with the information detailed above).
- Tables and graphs plotting actual consumption against our original targets (in accordance with the information detailed above).
- Copies of site reports and photographs showing that the emissions and targets were recorded and displayed on site.
- A schedule of timber used (type and use), evidence of supply (delivery tickets/invoices) and appropriate certification to confirm that timber meets the above requirements).

MMMF

These materials are covered by the COSHH regulations and persons working on or near these materials should undertake sufficient risk assessments and/or wear appropriate Personal Protective Equipment.

Noise & Vibration

Noise control
Noise levels will be monitored by the main contractor during the course of the works via means of noise monitoring equipment located at strategic locations to ensure compliance with all applicable legislation including B.S.5228: 2009+A1:2014 "Noise and Vibration control on construction and open sites- Code of practice for basic information and procedures for noise and vibration control.

Although the noise level trigger points will be included in a formal agreement between the main contractor andthe local authority, at sensitive locations the main contractor will seek to achieve, where practicable, noise levels lower than the specified limits.

The anticipated mitigation measures should always be implemented by contractors to minimize noise and vibration generated from site activities and disruption to any sensitive receptors:

- Hoarding and sheeting to public boundaries;
- Controlled lorry movements;
- Use of modern plant with inherent noise suppression where available;
- Use of screens around static plant, and other temporary acoustic barriers where appropriate; Switching off plant which is not in use;
- Appropriate handling of storage materials;
- Restrictions on working hours, particularly for noisy activities;
- Regular maintenance of plant in accordance with manufactures' instructions; and
- Regular communications held between contractors, Local Authority officers and neighbours.

The objective of these negotiations and associated mitigation measures is to ensure, as far as is reasonable practicable, that the facades of those buildings likely to be most affected by the works will provide an adequate level of insulation, either because the buildings were initially designed or constructed in that way or as a result of the mitigation measures that have been offered.

Reference: British Standard BS 5228-1:2009: 2014 Code of practice for noise and vibration control on construction and open sites – Part 1 Noise.
Documentation

Noise and vibration monitoring records will be maintained and made available when required. Details of corrective action taken if complaints are received or excessive noise is identified; and Plant maintenance records.

Noise control provisions – Plant
The main contractor shall ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC. All plant and equipment with appropriate mufflers or silencers of the type recommended bythe manufacturer. Plant and equipment will only be used for tasks for which it has been designed for.

When not in use all plant and equipment shall be shut down and where in intermittent use, the intervening periods between works or throttle it down to a minimum.

Noise control provisions – Demolition

Utilise low impact demolition methods such as non – percussive plant wherever practicable and drill and burst techniques for any large areas of slabs to be removed.

Noise control provisions – Screens and Scaffolds
The hoarding and scaffold acts as a visual screen hiding the on-going works and additionally dust arising will be contained within the sheeted enclosure during the demolition phase of the works. Areaswill be wetted down to minimise dust escaping to the surrounding areas.

The main contractor will apply for prior consent for proposals to conduct noisy demolition and/or construction works a minimum of 28 days before works commence on site. The main contractor will undertake a noise assessment reviewing noise levels made by specific plant. This noise assessment will be carried out in

accordance with BS5228-1 2009 Code of Practice for noise and vibration on construction and open sites.

This assessment allows the contractor to select the most appropriate plant, methodology and controls to minimise disruptions of buildings at close proximity of the adjacent structures (sensitive receptors) and in particular live and occupied premises during the demolition and substructure work phase.

Noise levels will be monitored by the contractor during the course of the works. The Client's representatives shall be given access to all noise readings if required as soon as they become available.

The following table lists indicative equipment representative of the more significant types anticipated. The sound level for each item of equipment has generally been taken from library data in British Standard BS 5228-1:2009. The equipment and calculations are to be confirmed by the contractor prior to construction, and during initial site noise monitoring the validity of this data will be confirmed and adjusted where necessary for the major items of equipment.

Equipment	Model	Type	Estimated LAeq at 10 m	Data reference
Excavator	Contractor to confirm	40 tonne	80 dB	BS 5228
Scraper	Contractor to confirm	30 tonne	80 dB	BS 5228
Haul truck	Contractor to confirm	40 tonne	88 dB	BS 5228
Water truck	Contractor to confirm		76 dB	BS 5228
Generator	Contractor to confirm		59 dB	BS 5228
Fuel tanker	Contractor to confirm		76 dB	BS 5228
Waste truck	Contractor to confirm		78 dB	BS 5228
Crushing plant	Contractor to confirm	NA	88 dB	estimate

When not in use all plant and equipment shall be shut down and where in intermittent use, the intervening periods between works or throttle it down to a minimum.

Noise and vibration will be covered in site inductions and weekly toolbox talks to all site personnel. We will ensure that all subcontractors and other people employed in connection with the work must be aware of and, where practicable, to keep to the guidelines.

All subcontractor RAMS will be reviewed prior to commencement of any works on site.

Air Quality Monitoring

This procedure applies to the management of emissions of the atmosphere during the works. All staff are responsible from complying with the requirements of the procedures. Typical emissions arising from plant operating on construction sites and from vehicle going to and from the site would have the potential to contribute to local levels of air pollution, particularly Nitrogen Dioxide (N02), Carbon Dioxide (C02) and particulates measuring 10m or less (PM10)

Construction activities can result in temporary effects through the release of fugitive dust.
Dust comprises particles typically in the size 1-7 micrometers (Ijm) in aerodynamic diameter and is created through the action of crushing and abrasive forces on materials. The larger dust particles fall out of the atmosphere quickly after initial release and therefore tend to be deposited near the source of emission. Dust, therefore, is unlikely to cause long term or widespread changes to local air quality, however, its deposition on property can cause 'soiling' and discoloration. This may result in complaints of nuisance through amenity loss, deposition on windows or perceived damage caused, which is usually temporary.

The smaller particles of dust (typically less than 101jm in aerodynamic diameter) are known as particulate matter (PM10) and represent only a small proportion of total dust released. As these particles are at the smaller end of the size range of dust particles, they remain suspended in the atmosphere for a longer period than larger dust particles and can therefore be transported by wind over a wider area.

The frequency and duration of dust effects are important factors in the potential for nuisance to be caused to nearby residents, with a higher degree of tolerance likely to be expected if the activities generating dust are infrequent or over a short duration of time.

Guidance provided by the Institute of Air Quality Management suggests that the potential effects from construction activities that generate dust are generally limited to within 350 meters of the construction site boundary or activity. This distance is largely dependent on the prevailing wind conditions, rainfall and the presence of natural screening by, for example, existing physical screening such as boundary walls or buildings on a site. The amount of dust that will be deposited of site depends on the nature of the construction activity being undertaken and the amount of mitigation being applied to minimize dust generation at source.

As part of the Environment Management plan for this project, a dust monitoring program will be in place around the site boundary in sensitive areas. Details of the dust monitoring strategy and actions to be taken when there is an exceedance of action levels are details below.

Dust Monitoring
The main contractor will establish project action levels, baseline monitoring will be undertaken around the siteprior to the commencement of site works.

The following documentation will be held on file onsite:
• Dust monitoring records;
• Log of exceedances I complaints with source and details of corrective action taken;
• Plant maintenance and defect reports; and
• Complaints procedure.

Vibration Monitoring
Using the baseline vibration levels and guidance outlined in BS 5228, a suitable Action Level should be adopted.

An alert and action protocol will be developed to ensure that the demolition works are carried out in a controlled manner.

A three-tier system is to be employed
- First alert level;
- Second alert level
- Action level

Given the proximity of specific sensitive receptors to the site, the main contractor will be proactively engagedwith all neighbours to develop strategies associated with mitigation measures. These measures will beinformed by the predicted noise levels for demolition phase, as presented in the General Site Management protocol.

Water Supply
All main water requirements for the site facilities will be measured through water meter readings. For onsite water requirements, The main contractor will use mains water where possible and install water meters to measure water usage in accordance with EXCEED/LEED – Gold standard.

Effluent & Sewer Management
All site welfare facilities effluent and sewage discharge will be via connections to the public drainage system. All wastewater from the site welfare facilities shall flow through fixed connections to the appropriate drains. At no time will any effluent be allowed to discharge directly onto the ground.

Site Drainage & Surface Water
All discharge consents will be in place prior to work commencing on site. All active drainage points within and adjacent to the site will be clearly identified and where necessary a means of water filtration installed around them. At no time will any dust control water sprays be allowed to generate a flow of runoff water. All such water spray operations will always be controlled and managed by appointed site personnel. The main contractor will identify then regularly inspect all on-site drainage systems and those adjacent to the site boundary and will ensure that they are maintained in an efficient state of repair andremain free of contamination and are not providing a potential means of rodent access.

Liquid Wastes
A specialist waste contractor will be employed to dispose of any hazardous liquid wastes found on site and disposed of in accordance with those regulations

In accordance with the oil storage regulations any storage tanks proposed to be used on site and containing more than 200 Litres of oil etc. will:

- Be stored within an oil tight constructed bund area capable of retaining the full contents of the tank plus 10% in an emergency;
- All valves will be lockable;
- Ensure working contents gauge;
- Have contents name and capacity identified.

Ground Contamination
Ground Contaminations reports will be reviewed to determine the classification of the ground. Additional assessments will be completed as required. The main contractor will have operating procedures in place that are implemented if contamination is identified on site. All works will be stopped to prevent further contamination and to facilitate an investigation to be completed.

To minimise the risk of ground contamination on site the following control measures will be implemented which will be actioned by designated site personnel using liquid absorbent materials such as granules and fine sand, which will be stored at a designated location on site. All such wastes from clearing a spillage incident will be placed into the appropriate waste container such as an oil drum which will then be removed from site for disposal as Hazardous Waste.

To ensure ground contamination is kept at a minimum the following standards will be actioned:
- All diesel storage and refuelling areas will be on a hard stand which will be covered in absorbent granules and have their own fire points;
- An area on site will be designated the plant service and maintenance area where it will be covered in absorbent granules;
- Any liquid escape or spillage such as an oil leak will be cleaned up immediately by the designated site personnel acting as a site spillage team;
- All standing plant will have drip trays placed underneath them;
- To ensure that ground contamination is kept at a minimum a plant service and repair area will be allocated on an easily accessible section of hard stand large enough to accept all sizes of site plant and visiting maintenance vehicles.

To minimise the risk of ground contamination all plant operators will be required to clean up any small fuel or oil spillage immediately.

For any risk of ground contamination on site from a significant fuel or oil spillage the following control measures will be implemented by a designated Site Spillage Team who will use liquid absorbent materials such as granules and fine sand, which will be stored at a designated location on site.

In the event of a significant fuel or oil spillage the following actions will be implemented:
- The incident will be reported immediately to the Site Project Manager;
- The Site Project Manager will notify his Site Spillage team who will then collect all the required materials from the designated storage area, load into a site van and go to the spillage area;

- They will then implement measures to initially prevent the spread of the spillage. Particularly to any drainage point. Then implement measures to clear the spillage;
- All collected waste materials will then be placed into the appropriate waste receptacles such as oil drums for disposal off site as hazardous wastes;
- All such incidents will be recorded on a Site Incident Report a copy of which will be forwarded SHEQ Manager.

Visual Intrusions
To ensure the impact of visual intrusion on adjacent areas is controlled the following control measures will be implemented:

- The main contractor will ensure that the lighting of the site is kept at the minimum luminosity necessaryfor adequate security and safety. In addition, the lighting shall be located and directed such that it does not cause undue intrusion to adjacent properties;
- When the site is closed all unnecessary site lighting will be turned off and only adequate security lighting will be maintained;
- The site will be made less intrusive by the erection of security hoarding around the whole perimeter of the site;
- The maintenance of all road areas adjacent to the site particularly at the site entrances will be carried out by mechanical and manual means on a daily basis;
- If required particularly during wet days all waste lorries leaving site will egress the site via an installed wheel cleaning system installed at that egress point.

Rodent Infestation and Pest Controls

To minimise the adverse impacts from pests and rodents the following control measures will be implemented on site in the following order

- All drainage systems and access points will be kept secure to prevent rodent access;
- All generated rubbish particularly food waste will be cleared as it is generated and placed into secure containers and removed off site for disposal on a continuous basis;
- A high level of good housekeeping will be maintained on site and in all facilities;
- Site rules will be implemented to prevent the feeding of such pests as pigeons and seagulls;
- All food stuffs brought on site will be within storage containers;
- Where all other control measures have been actioned then pest control management will be implemented on site by a reputable pest control company.

Biodiversity & Ecology
All construction work will be carefully planned and managed to minimise and mitigate their potential environmental impact through implementation of this plan as agreed with all relevant statutory bodies.

An environmental ecology survey will be carried out prior to commencement in order identify/contain and avoid or mitigate disturbance. Prior to commencing onsite, The main contractors project team will assess the ecological risks and impacts of our activities, and in close consultation with our client, environmental officers and key stakeholders; develop an optimal methodology. The main contractor will ensure that best practice principles are maintained throughout the duration of the works

Vigilance will be maintained throughout the construction phase of the development with regards to non-native invasive species. If discovered or suspected, any such areas would be subject to inspection by the Ecological Clerk of Works. Invasive species would be removed following best practice guidelines by a specialist contractor.

During the course of the works, the Project Manager will have direct authority to influence site activities and ensure that detrimental impacts on site biodiversity are avoided, including briefing the site operatives on housekeeping rules and the impacts of poor practices.

Tree Protection
Suitable tree protection will be implemented throughout all works on site. All tree works will be carefully planned and undertaken in accordance with BS 3998: 2010.

All tree works will give due consideration to the potential presence of protected species, including breeding birds and roosting bats. Any current or subsequent ecological reports should be consulted prior to the commencement of works. Arisings from tree works (e.g. wood piles and standing dead trunks) can provide valuable habitats for wildlife. As such, consideration should be given to their retention on site in areas unlikely to cause issues to public health and safety.

During construction and throughout dry periods on site, regular hosing down will be carried out to control dust pollution. In the vent of dust build up on the trees occurring, arboricultural advice will be provided by a SQE and remedial measures implemented if required. Where scaffolding needs to be erected within the RPA, the retained hard surfacing and proposed Ground Guards will provide sufficient protection.

General Precautions on site

The following precautions will be maintained at all times:

- All retained trees should be protected by the erection of protective barriers and or ground protection prior to the commencement of any works and should remain in place during the entire course of the development;
- No fires should be lit within 10m of the canopies of trees to be retained;
- Designated Construction Exclusion Zones (CEZ) will be suitably identified and maintained to ensure that trees remain protected. Storage or stockpiling areas, temporary road access, accommodation and other facilities are to be located outside of RPAs, inside designated sites away from retained trees and all care must be taken to prevent the leakage or spilling of harmful materials into the soil;
- No excavations or soil stripping or general disturbance and compaction of the existing soil strata should be carried out within the RPA of any tree to be retained, unless it has been satisfactorily assessed and suitable protection measures have been agreed as part of this Method Statement;
- All scheduled tree works should be carried out prior to the commencement of any site works and before the erection of tree protection measures;
- A copy of the Method Statement and accompanying Tree Protection Plan should be made available and retained on site at all times and should be included in the site induction for all contractors and visiting personnel so that they are familiar with its content and requirements;
- Prior to any site works being undertaken, a pre-commencement meeting on site between the Site Manager, Arboricultural Consultant and Local Planning Authority Tree Officer should be carried out in order to understand and agree key stages for the implementation of tree protection measures and operations and to allow any aspect of the process to be discussed.

Monitoring, Measuring and Reporting – Site Environmental Impacts

The following provides details on how the identified site impacts & the effectiveness of mitigation measures will be monitored. Baseline monitoring of all key indicators will be taken prior to work being starting on site. The visiting SHEQ Manager will use monitoring data to assess & report on the implemented impact control measures as part of his regular environmental inspections.

KPI's

Activity	**KPI**
Waste (total)	M3/100m2 (footprint of building)
Diversion from landfill	90%
Energy	Kgco2
Transport (Deliveries & waste transport)	Kgco2
Water	M3
Incidents / Near Misses	Zero Target

Noise, vibration & air quality monitoring stations will be established at key locations around the site to cover the construction phase of works. Data will be continuously recorded and reviewed.

Our noise, vibration and dust management plan will be regularly monitored for compliance and any mitigation measures put in place. On a monthly basis, the results will be analysed, and findings provided in an environmental monitoring report.

Conservation & Built Environment

Archaeology

The main contractor will have procedures to ensure that if any items / objects are discovered throughout the works with historical importance, works will be stopped immediately and a SQA (Suitably Qualified Archaeologist) will be liaised with prior to works commencing.