P. P. O'CONNOR
Committed To Excellence

ENVIRONMENTAL MANAGEMENT PLAN

Siemens PLC
Sir William Siemens House

SIEMENS

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1.0 Introduction

The Project Environmental Management Plan (EMP) has been developed to detail the manner in which the environmental impacts of the demolition and reconfiguration works are to be minimised by the implementation of appropriate mitigation measures. The EMP is designed to ensure that the requirements of legislation, the contract and the project's environmental policy are complied with.

P.P. O'Connor have been be appointed as Principal Contractor. All persons and organisations working for or on behalf of P.P. O'Connor on this potential project shall fully adopt the requirements of this Environmental Management Plan (EMP).

P.P. O'Connor shall plan, manage and monitor the construction phase in a way which ensures that, so far is reasonably practicable, its impacts on the environment are controlled and minimised.

1.1 Project Description

P.P. O'Connor have been commissioned to soft strip and demolish the existing Nurse's Residential Block, the T2 Building and the Siemens Service Building. All foundations are to be excavated and removed to a depth of 1.5 metres below existing ground level and the subsequent voids created filled with arising's generated from the demolition of the existing buildings. All materials will be crushed off site at a licenced recycling plant.
Remodelling, removal and replacement works will take place in the car park to create a series of interlinked car parks.
All waste materials will be segregated and placed into designated skips for removal off site for processing in licenced facilities.

1.2 Site Information

The site is located on Princess Road, Manchester, M20 2UR
The project is located on a main artery road leading in to Manchester City Centre. Manchester City Centre is approximately four miles to the north of the site. The site is surrounded on all sides by two Schools (The Birches and The Lancastrian School), West Didsbury Police Station and Spire Manchester Hospital.

Hours of Work

Hours of work during demolition will be 0800 to 1800 hours Monday to Friday. Noisy works will be limited between 1000 to 1600 hours and will not be completed on Saturday or Sunday. Demolition works will not take place on a Saturday, Sunday or Bank Holiday unless it is required in an emergency and written approval has been provided by Manchester City Council. Demolition works of the T2 building and Nurses Residential Block will be completed during the October half term holiday to prevent disruption to the neighbouring schools, The Birches and The Lancastrian School located on Elizabeth Slinger Road.

1.4 The Environmental Management Plan Context

The EMP makes the link between the identified environmental issues and management actions undertaken to address them, and provides a mechanism by which management actions are recorded and communicated.

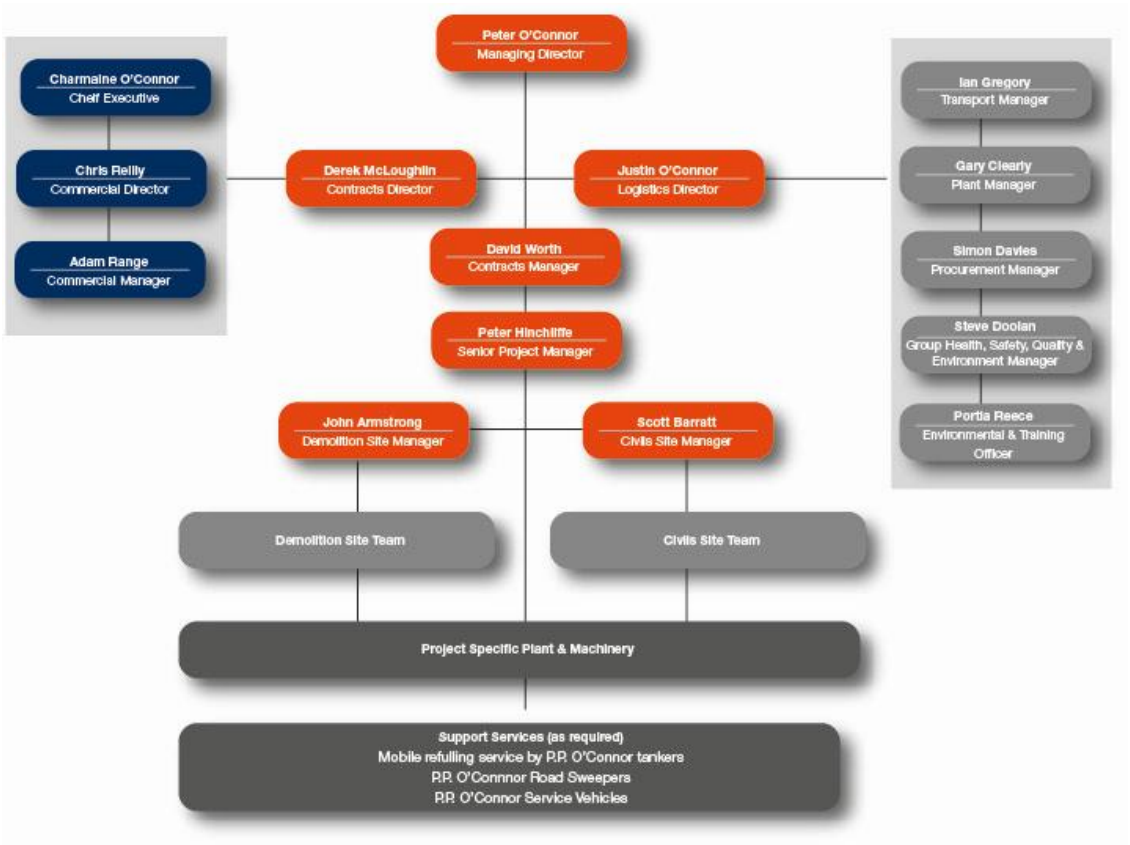
1.5 Environmental Management Plan Objectives

The main objectives of this EMP are to:

- Minimise the potential likelihood and impact of environmental risks related to the construction and commissioning phase of the project.
- Define responsibilities ensuring the requirements of this EMP are maintained.
- Identify Control measures required to ensure there is no unplanned or uncontrolled release that would adversely affect the environment.

2.0 Environmental Management

2.1 Structure and Responsibility



P.P. O'Connor has full responsibility for the management of environmental and ecological protection on this site during the occupancy period. P.P. O'Connor shall coordinate and also commit its supply chain members to ensure all activities are compliant with planning, environmental and legislative requirements, this is to be a contract requirement. This will be undertaken at a number of stages, enquiry stage, contract negotiation and also during the site induction.

The Environmental Responsibilities are outlined below:

Senior Project Manager – Peter Hinchliffe

- Overall responsibility to ensure that work activities are properly planned managed and monitored such that environmental aspects and impacts are minimised and controlled.
- Ensure that the project implements and complies with all legislative and contract requirements.
- Ensure Environmental Objectives and Targets are fully maintained and communicated.
- Ensure adequate resources are available to fulfil the Principal Contractor duties.
- Ensure adequate resources are available for training.
- Ensure effective communication of Environmental matters.

Environmental Officer – Portia Reece

- Responsible for environmental management of the project and shall ensure that the requirements of this EMP are effectively implemented.
- Consider environmental issues during all stages of the works, managing environmental consultants and liaising with engineering teams and client's environmental representative.
- Develop and review the EMP, site specific environmental plans and procedures and provide environmental input into RAMS.
- Develop and review Projects Environmental Aspects and Impacts Register.
- Provide environmental training as required.
- Advise the Senior Project Manager of statutory / other environmental requirements and alert them in a timely manner regarding problems that may delay project completion or harm the environment.
- Complete and submit all necessary applications for statutory consents. Be responsible for liaison with local and/or national statutory and non-statutory authorities and the public.
- Co-operate closely with the client's environmental representative and respond effectively to reports from audits and inspections.
- Advise the Senior Project Manager on the actions to be taken arising from audits of the project.
- Provide advice, reporting and investigation of environmental incidents.
- Ensure site emergency response preparedness is adequate.
- Monitor progress against the project objectives and targets.
- Ensure adequate arrangements for the storage, disposal and recycling / re-use of waste.
- Ensure adequate arrangements for the storage of fuel, oils and chemicals on site.
- Delegate any of the above duties to other appropriately qualified members of the site team.

Operative Employees & Subcontractor Employees

- All P.P. O'Connor and subcontractor personnel working on the project shall perform their duties in accordance with the requirements of the EMP, Procedures and RAMS. The will be communicated via the site induction process.

- During the works, subcontractors will be treated the same as P.P. O'Connor staff and will be subject to regular audits and General Planned Inspections.

- All site operatives will be expected to demonstrate 'environmental best practice' and a high level of 'individual environmental responsibility'. This will be checked regularly through audits, inspections, briefings and on site discussions.

2.2 Communication and Coordination

Communication on site between the contractors and environmental manager and other stakeholders is a vital aspect of environmental management and will be dealt with as follows:

2.2.1 Internal Communication

- The EMP and any associated revisions will be communicated throughout the Project Team via a briefing by the Senior Project Manager.
- On-site team meetings to review performance and coordinate forthcoming activities, to include any environmental requirements, as appropriate.
- Dissemination of environmental audits, inspections, monitoring reports and environmental updates as appropriate.

2.2.2 Internal Communication (Contractors)

External communication is considered to be that between the Principal Contractor and its stakeholders, including the local authority, statutory regulatory authorities (including the Environment Agency) and with local community groups. The Environmental Officer will be responsible for receiving, documenting and responding to any environmental communication from other stakeholders. Records are kept of all written communication, including notes of verbal communications giving key information, instructions or decisions.

2.3 Reporting

The reporting requirements for the project include:

- Ground contamination
- Noise and vibration
- Neighbour comments and observations
- Dust

2.3.1 Ground Contamination

If ground contamination is encountered including asbestos, either existing or from current operational activity, it should immediately be reported to the Senior Project Manager, who will capture the data.

2.3.2 Noise and Vibration

Noise and vibration monitoring reports shall be prepared by the P.P. O'Connor Environmental Officer, in line with the prepared Method Statement.

2.3.3 Neighbour Comments and Observations

Any comments or observations received from neighbours or any member of the general public must be forwarded to the Environmental Officer and reported to the Senior Project Manager. The Senior Project Manager shall work in close cooperation with the Environmental Officer to ensure timely and appropriate action is taken.

2.4 Environmental Training

Training requirements are identified by the Environmental Officer:
Environmental training for the project includes:

- Site induction training.
- Familiarisation with this EMP and other environmental plans and procedures.
- Familiarisation with site environmental controls.
- Environmental emergency response training.
- Toolbox talks on the environmental sensitivities of the area and the avoidance of potential environmental impacts and other relevant subjects.

Training records shall be maintained by the Environmental Officer or appropriate nominee.

2.5 Environmental Incidents

All environmental incidents shall be reported directly to the Environmental Officer, including the following as a minimum:

- Environmental Incidents / Pollution.
- The discovery of archaeological remains.
- The discovery of protected / invasive species.
- The discovery of asbestos in soil or other material.
- Reportable Accidents affecting environmental receptors – e.g. protected species.

In the unlikely event of any environmental incidents and near misses occurring they will be reported to the Senior Project Manager and Environmental Officer and recorded on the company incident reporting system. All incidents will be fully investigated and reported to ensure appropriate mitigation is applied to avoid recurrence.

2.6 Emergency Contacts and Response

Environmental Officer – Portia Reece – 07757 667386 - portia.reece@ppoconnor.co.uk

Senior Project Manager – Peter Hinchliffe – 07523 513 612 peter.hinchliffe@ppoconnor.co.uk

P.P. O'Connor Head Office – 0161 776 0333 - 24 Hour Emergency Line

Environment Agency – 0800 807060

Fire Service – Emergency – 999 / 112

Ambulance Service – Emergency – 999 / 112

Police – Emergency – 999 / 112

Hospital – Manchester Royal Infirmary - 0161 276 4147

A list of hazardous material storage shall be held in the Site Office for use by emergency responders.

3.0 Preventing Pollution of the Land

3.1 Storage and handling of fuels, oils and lubricants

A site specific Risk Assessment shall be prepared for fuel/oil storage and refuelling taking into account the need for communication, responsibilities, Health and Safety, security, deliveries, maintenance and sensitive locations.

A designated fuel storage area will be set up within the site compound to ensure containment of any ongoing and potential accidental spillage.

All fuel tanks and bowsers shall be constructed with an integral bund built to 110% capacity and be regularly maintained and inspected. They shall also be assessed to ensure suitability i.e. integrity, vulnerability to impact. Small quantity of fuel in approved fuel cans can be temporarily stored over a plant nappy when in use in a work area.

Fuel storage tanks / bowsers must not be located in high risk areas including near water (> 10 metres), or where it could leak into surface drains.

Dispensing nozzles and hose valves must be locked within the bunded tank/bowser when not in use. Flexible delivery pipes must be fitted with an automatic shut-off device but it mustn't be possible to fix the tap or valve in the open position.

New spill kit equipment must be located next to every fuel tank and on all fuel bowsers. Fuel bowsers and storage tanks must also be labelled clearly with their contents and maximum capacity. Regular checks shall be undertaken to ensure adequate supplies of kit are available which are fit for purpose.

Operatives transporting fuel or refuelling shall be competent and trained in refuelling and spill response procedures e.g. TBT training. Only competent staff/contractors trained in refuelling and spill response are to carry out refuelling of plant and machinery. Correct equipment shall be used e.g. nozzles and funnels of an appropriate size.

All static / semi-static items of plant e.g. compressors and generators shall only be used if they have an integral bund or where not possible with a drip tray placed underneath and of a sufficient size to contain all possible spills from the plant. Plant nappy can be used for small / medium plant if it is sufficient for the plant size and the amount of oil it contains. Drip trays have to be kept clean and free from rainwater. Plant nappies shall be visually inspected for oil contamination and if appear attained / soaked must be cleaned / replaced according to manufacturer's instructions. Drip trays can be emptied by skimming any visible oil with e.g. absorbent pads until there is no visible oil sheen on the water and then water can be disposed of over ground.

Refuelling shall be carried out in designated areas. If necessary mobile bowsers can be used to refuel static plant. A drip tray or plant nappy must be used during all refuelling on site to catch any spills and / or drips.

3.2 Hazardous Substances

Only chemicals required for current use in construction activities shall be permitted on site.

Details of the quantities and types of hazardous materials held at the site must be recorded on the COSHH register. All chemicals being delivered to site shall be accompanied with the relevant COSHH assessments and paperwork. Any chemicals unaccompanied with insufficient/incomplete paperwork will be refused on to site.

All chemicals must be stored and segregated on spill trays in lockable containers. The container must have a raised lip at the entrance designed to contain any spills that may occur within. Suitable COSHH storage boxes may be used for small quantities of materials if necessary.

A designated person must hold the key to control access and keep a record of quantities held and used.

Spill kit material appropriate for the volume and type of substances stored shall be kept within the container for use in an emergency along with the current and specific incident procedure.

3.3 Mud and other deleterious material

Mud on the public highways is a statutory nuisance and a health and safety hazard. It is minimised and prevented on this project keeping the access roads free from mud by; Road cleaning which will be carried out using a mechanical brush or road sweepers. To ensure mud and other debris are not allowed to be tracked onto other surfaces including the Siemens access road, neighbouring public highways and the existing service yards, appropriate wheel washing facilities will be provided whenever vehicles and plant traverse the site. These wheel washing facilities will be a banksman and appropriate jet washing equipment and will take place in the designated area to the existing service yard of the Siemens Building and latterly to the existing car park area.

3.4 Plant Maintenance

All plant/machinery prior to entry onto site shall be thoroughly inspected for internal bunding or other spill control, leaks of fuel, hydraulic fluid and engine oil. Any item of plant deemed to be a possible pollution threat shall not be brought to the site.

All mobile plant, including but not limited to excavators, cranes, generators etc. shall be maintained and operated such that all potential leaks and spills of fuel/lubricants are prevented or if not possible absolutely minimised.

All routine plant maintenance shall be carried out off site. However, in the event of unplanned maintenance/breakdown this will be undertaken in a designated area on site with hardstanding. Plant maintenance is to be carried out only with a drip tray under the work area and with spill kit equipment to hand.

Certified plant on site shall be recorded on the Plant Register. Plant and equipment shall be maintained as per regulations and manufacturer's specifications.

3.5 Construction waste

The following measures have been taken to minimize the quantity of waste produced during the project:

1. All arising's must be segregated on site.
2. Reusable materials must be identified on site for processing in licenced facilities.
3. Recyclable materials will be removed from site for processing in licenced facilities.
4. Recoverable materials will be removed from site for processing in licenced facilities.

4.0 Preventing Pollution of the Air

4.1 Exhaust fumes from plant and machinery

Contractors shall check that machinery is in good working condition before commencing work and that exhaust emission levels are acceptable. This can be achieved by completing a visual check on the smoke that is emitted from the exhaust:

- No visible haze emitted from the exhaust indicates C02 levels much lower than 1000ppm 8-hour TWA (time weighted average). This demonstrates that the plant or machinery poses a very low pollution risk and is in good working order.
- Occasional white, blue or black smoke emitted from the exhaust indicates C02 levels about 1000ppm 8-hour TWA. This demonstrates that the plant or machinery poses a medium pollution risk and should not be used until it has been serviced.
- Permanent white, blue or black smoke emitted from the exhaust indicate C02 levels greater then 1000ppm 8-hour TWA. This demonstrates that the plant or machinery poses a high pollution risk, this plant or machinery must not be used until it has been serviced.

Any item of plant deemed to be a pollution threat will not be granted access onto site or allowed to operate. Certified plant on site shall be recorded on the Plant Register held on site by the Site Managers.

Plant and machinery shall be switched off when not in use and the keys removed from the ignition.

Ensure that regular maintenance is carried out and recorded.

Ensure daily checks are carried out.

4.2 Fumes from Chemicals and Solvents

Ensure that containers of solvents are not left unattended with lids removed.

Replace lids on containers when not in use to prevent evaporation to the atmosphere.

4.3 Dust from Site Operations

During demolition operations and periods of dry weather and prevailing winds all reasonable measures shall be taken to prevent annoyance and inconvenience to local residents, occupiers and pedestrians due to blown dust caused by site operations.

Best available techniques shall be used to prevent dust, or where this is not practicable, reduce dust emissions from the demolition and construction processes. Monitoring of particulate distribution shall be undertaken by visual observations prior to commencement of operations and periodically thereafter (to be agreed with the client on award of the contract) and recorded on the site monitoring sheet. Should visible particulate matter be emitted beyond the site boundary operations will cease and mitigation measures shall be implemented.

Mitigation measures that shall be implemented for all operations as relevant to the scope/area of works are as follows:

- Damping down the site and stockpiled aggregate using water cannons, sprays etc.
- Water spray dampening of areas to be undertaken to prevent dust blow.
- Cleaning access roads by means of a road sweeper or mechanical brush.
- Sheeting of haulage wagons entering or leaving the site.
- Adhering to the temporary site speed limit of 5 mph on site.
- Absolutely no fires on site at any time.

For more details, please see dust management below and dust management plan.

4.4 Dust Management

Source Description	Primary Dust Control Measures	Thresholds / Triggers for Management	Contingency Dust Control Measures
Tipper wagons and Vehicle Traffic	▪ Add water to unpaved road surfaces if necessary. ▪ Implement a speed limit of 5mph to slow vehicles and therefore reduce fugitive dust emissions. ▪ Where access roads adjoin public highways, there is the potential for material to be tracked onto the paved public highway. If material is tracked onto public highways, and is creating dust, the road will be cleaned (ie. tracked material will be removed from the road surface using a road sweeper).	▪ If tipper wagons or vehicle traffic emissions are occurring that may impact air quality beyond the property boundary: ▪ If visible dust is being generated from tipper wagons or vehicle traffic; and/or ▪ If the weather forecast indicates dry conditions and strong winds are likely. ▪ Visual cues would be the primary trigger for mitigative action to be taken with respect to fugitive dust emissions. ▪ If the weather forecast indicates dry weather and strong winds are likely, this is also a trigger for preventative dust management action to be taken. ▪ Visual monitoring during site activities will be conducted by the site manager/ environmental officer to determine if contingency control measures should be implemented. ▪ Spot checks will be conducted using a portable particulate monitor. If measured concentrations are approaching an Environment Air Quality Standard (see dust management plan), contingency control measures will be implemented. Initially, the threshold level will be 90% of the standard; however this may be refined with additional monitoring. ▪ Complaints by nearby residents	▪ Apply water to roadways that are being used and producing dust. ▪ Apply gravel to roadways approaching access points. ▪ Cover tipper wagons on windy days if dust control measures are not sufficiently preventing dust movement. ▪ Cease activities during high wind events or when dust emissions
Vehicle Fleet Operation	▪ Avoid engine idling. ▪ Ensure construction fleet vehicles are maintained according to manufacturers' guidelines. ▪ Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport. ▪ Implement a wheel jet washing system. ▪ Adhere to site speed limits and designated roads.	▪ Periodic maintenance of construction vehicles. In addition, excessive or consistently black exhaust is a signal that an engine is not operating optimally ▪ Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits. ▪ Inspect on-site traffic routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. ▪ Record all inspections of traffic routes and any subsequent action in a site log book.	▪ Replace worn or malfunctioning equipment. ▪ Consider different scheduling and routing options

Source Description	Primary Dust Control Measures	Thresholds / Triggers for Management	Contingency Dust Control Measures
Loading and Unloading	▪ Keep drop height onto stockpiles and tipper wagons to a minimum. ▪ Empty loader bucket and tipper wagons (end dump) at rate to limit dust emissions. ▪ Tipper wagons will not be loaded above the sides of the tipper wagons.	▪ If the weather forecast indicates dry conditions and strong winds are likely. ▪ Visual cues will be the primary trigger for mitigative action to be taken with respect to fugitive dust emissions. ▪ If the weather forecast indicates dry weather and strong winds are likely, this is also a trigger for preventative dust management action to be taken.	▪ Increase frequency of water spray usage. ▪ Installation of engineered controls such as dust covers or collection mechanisms. ▪ Cease activities during high wind events during
Stockpiled Materials (including aggregate piles or contaminated soil)	▪ Stockpiles should be located away from sensitive receptors e.g. residential, commercial and educational buildings, places of public access or other features, such as watercourses. ▪ Where possible, ensure stockpiles are kept protected from wind erosion or enclosed or under sheeting. ▪ Dusty materials can be damped with water sprays. ▪ Orient piles to be parallel with the predominant wind direction. ▪ Wind barriers (protective fences) of similar size and height to the stockpile may be used. ▪ Keep stockpile height to a minimum. ▪ Minimize drop height of conveyor to the stockpile.	▪ If visible dust is being generated from the stockpiles ▪ If the weather forecast indicates dry conditions and strong winds are likely ▪ Visual cues will be the primary trigger for mitigative action to be taken with respect to fugitive dust emissions. ▪ If the weather forecast indicates dry weather and strong winds are likely, this is also a trigger for preventative dust management action to be taken. ▪ Spot checks will be conducted using a portable particulate monitor. If measured concentrations are approaching an Environment Air Quality Standard (see dust management plan), contingency control measures will be implemented.	▪ Wet the stockpiles. ▪ Cease activities at the stockpiles during high wind events or when dust emissions cannot be adequately controlled. ▪ Cover the temporary stockpiles. ▪ Construct a wind barrier.

Source Description	Primary Dust Control Measures	Thresholds / Triggers for Management	Contingency Dust Control Measures
Demolition Activities	▪ Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust). ▪ Bag and remove any biological debris or damp down such material before demolition. ▪ Avoid burning of waste materials. ▪ Materials should be removed from the site as soon as is practical. Prolonged storage of debris on site or exposure to wind should be avoided. ▪ Ensure good housekeeping at all times.	▪ Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes. ▪ Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. Make the log available to LPA if required. ▪ Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible. ▪ Fully enclose site or specific operations where there is a high potential for dust production and the site is actives for an extensive period. ▪ All contractors and sub-contractors to be made aware of and sign-up to the dust management scheme.	▪ Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
Trackout Specific	▪ Inspect on-site trafficroutes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. ▪ Implement a wheel jet washing system	▪ Record all inspections of traffic routes and any subsequent action in a site log book. ▪	▪ Ensure Roads are dampened down on a regular basis to prevent dust from arising.

Source Description	Primary Dust Control Measures	Thresholds / Triggers for Management	Contingency Dust Control Measures
Earthworks	▪ Conduct topsoil stripping only during suitable wind and weather conditions, so as to minimise the generation dust. Topsoil stripping will be conducted in areas proposed for mining no more than two months before mining commences, wherever practical. ▪ After re-establishment of the soil profile (post mining), vegetative cover will be established within 8 months, as part of the progressive rehabilitation program. ▪ Move as little material as possible. While excavating, this translates to keeping drop heights as low as possible ▪ Use a front-end loader where possible to place material instead of a bulldozer. ▪ Progressive site stripping will be used to reduce moisture content loss and to retain soil integrity. ▪ Stabilise surfaces and/or re-vegetate as soon as possible.	▪ Monitor wind and weather forecasts (Bureau of Meteorology) and cease non-essential operations (i.e. topsoil stripping) during excessively windy conditions. ▪ Material handling activities are occurring that may impact air quality beyond the property boundary: ▪ If visible dust is being generated by material handling activities; and/or ▪ If the weather forecast indicates dry conditions and strong winds are likely. ▪ Visual cues will be the primary trigger for mitigative action to be taken with respect to fugitive dust emissions. ▪ If the weather forecast indicates dry weather and strong winds are likely, this is also a trigger for preventative dust management action to be taken. ▪ Visual monitoring during site activities will be conducted by the environmental consultant to determine if contingency control measures should be implemented. ▪ Spot checks will be conducted using a portable particulate monitor. If measure concentrations are approaching an Environment Air Quality Standard (See Dust Management Plan) contingency control measures will be implemented.	▪ Wet the material when it is being handled. ▪ Cease material handling operations during high wind events or when dust emissions cannot be adequately controlled

5.0 Preventing Pollution to Water

Water pollution has damaging effects on the environment, humans, habitat of plants and animals. Pollution can occur if discharges of substances into surface watercourses or groundwater without prior treatment or by accident, e.g. after an accidental spill.

Key causes of pollution include:

- Spills or leaks from oil and chemical containers.
- Trade effluent going into surface water drains instead of foul water drains, or straight into watercourses.
- Removing too much water from surface waters and groundwater.
- Run-off containing de-icing materials, such as salt during winter months.
- Silt and soil from construction sites.
- Wash waters and waste products.
- Fuel spills.

It is recognised that if the water environment becomes polluted, an environmental offence may well be committed.

Surface watercourses and groundwater are protected by a number of licensing regimes that prevent and control pollution.

You can prevent water pollution by:

- Using sustainable drainage systems to control diffuse pollution from lightly contaminated run-off.
- Fencing off areas to prevent stock access and establishing plant cover to prevent soil erosion.
- Using silt traps, buffer strips and sand bags to prevent run-off containing sediment from polluting surface waters and groundwater.
- Storing and handling hazardous materials carefully to prevent diffuse pollution from leaks and spills and providing spill kits to clean up spills if created.
- Cover and protect all drains on site.

6.0 Ecological Protection Plan

This Environmental protection Plan (EPP) describes the conceptual protection measures that will limit the environmental disturbances associated with the projects design. In addition to being suitable for design and construction, these conceptual environmental protection measures can be used for project activities during site clearance, demolition and construction works.

The EPP has been prepared to identify preliminary project environmental mitigation measures to support the project design and planning.

According to the ecological survey carried out by Brooks Ecological: The site is entirely occupied by habitats that have been influenced by activity at the site. These habitats are of low ecological value and are unlikely to pose major constraints on the development. Nonetheless the following measures have been put in place to protect potential wildlife on the site.

6.1 Wildlife

- General protection measures that apply during construction include:
- Employees and Contractor employees and agents shall not interfere with wildlife unless stated by the client i.e. removal of specific trees
- Where important wildlife species are encountered impacts shall be minimised by avoiding noisy, disruptive activities during sensitive wildlife periods

- All refuse shall be disposed of at a licenced recycling/ landfill centre. Refuse stored on site prior to removal shall be stored in closed/covered skip or a covered stockpile as necessary.

6.2 Bats

The ecological survey identified:
Bats may commute along the sites northern boundary. Habitat within the application site is of limited value for foraging bats, with isolated pockets of tree and shrub planting providing areas of higher value. Habitat within the site is generally considered to be of low value and much of what is likely to be sued by bats can be protected and retained beyond development.

Over the course of three surveys, no evidence of roosting at the Site could be found. It is therefore concluded that demolition of the existing buildings can proceed with minimal risk of impacting on roosting bats. The site has been shown to supports low-level foraging activity by common bat species. These levels of activity suggest the Site is unlikely to be of great importance to local bat populations. Retaining the sites value for local bat populations can easily be achieved through the retention of as much of the existing green infrastructure around the Site as possible.

General Protection Measures in case bats nests are discovered include:

- Tree lines to the North and West must be retained. Please see section 6.6 for more details on this
- If discovered, no one shall disturb, move or destroy a nest. If a roost is encountered, the Contractor shall cease work in the immediate area of the roost and contact the project manager
- If a roost is discovered, physical protection measures such as heras fencing shall be put in place
- If a roost is discovered, provision of training and information about the importance of 'wildlife protection zones' will be carried out to all construction personnel on site.

Legislation

All species of bat are fully protected under the Conservation of Habitats and Species Regulations 2010. It is illegal to injure, kill, capture or disturb a bat. It is also illegal to damage, destroy or obstruct trees, buildings or other places used for roosting, even if bats are not present.

All bat species are also protected under the Wildlife and Countryside Act 1981 (as amended). This means they are additionally protected from intentional or reckless disturbance, intentional or reckless obstruction of access to any place of shelter or protection; and/or, selling, offering or exposing for sale, possession or transporting for purpose of sale.

6.3 Badgers

The ecological survey identified: a number of badger setts were recorded within the search radius but none of the setts or habitats in which they are found share close links with the site.

No evidence of badgers could be found on the site at the time of the survey and the chances of setts being established here are unlikely.

General Protection Measures in case badger sets are discovered include:

- If discovered, no one shall disturb, move or destroy a badger sett. If a sett or young badgers are encountered, the Contractor shall cease work in the immediate area of the nest and contact the Senior Project Manager
- If a sett is discovered, physical protection measures such as heras fencing shall be put in place, complete with appropriate signage
- If a sett is discovered, provision of training and information about the importance of 'wildlife protection zones' will be carried out to all construction personnel on site.

Legislation

Badger Act 1992, It is an offence to *'interfere with a badger sett by disturbing a badger that is occupying the sett'* (Natural England 2007).

6.4 Hedgehog

The ecological survey identified: hedgehog are likely to be present on the site from time to time foraging around the lawns and sheltering within areas of the densest shrub growth.

General Protection Measures in case hedgehog nests are discovered include:

- If you disturb a nest with an adult hedgehog in it, replace the nesting material. The hedgehog can then either repair the nest or build another elsewhere
- If discovered, no one shall disturb, move or destroy a hedgehog nest. If a nest or young are encountered, the Contractor shall cease work in the immediate area of the nest and contact the Senior Project Manager
- If a nest is discovered, physical protection measures such as heras fencing shall be put in place, with appropriate signage
- If a nest is discovered, provision of training and information about the importance of 'wildlife protection zones' will be carried out to all construction personnel on site.

Legislation

Hedgehogs are protected under the following legislation. Wildlife and Countryside Act 1981 (as amended) Schedule 6.

6.5 Birds

The ecological survey identified: Urban species such as dunnock, house sparrow, thrush and starling were identified using bird records within the search radius. It has been identified that these species are likely to make use of areas of habitat found around the site including shrubs and tree planting as well as gaps and crevices within buildings.

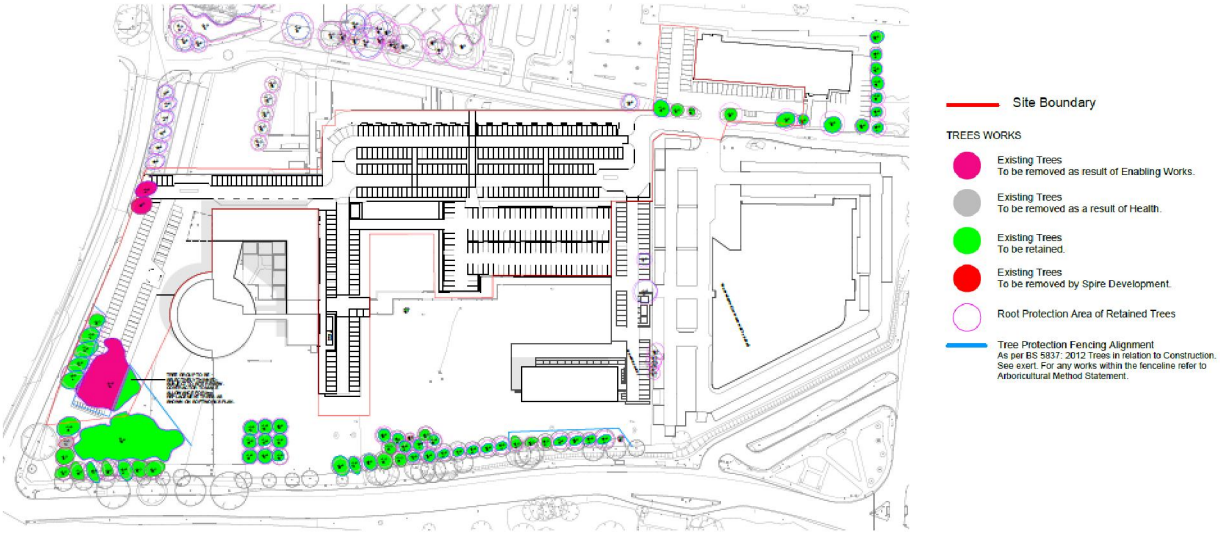
General Protection Measures in case bird nests are discovered include:

- No tree felling, pruning works or vegetation clearance should take place during the optimum period for bird nesting (March to July inclusive) unless it has been confirmed by a suitably qualified and competent person that nesting birds are absent
- If discovered, no one shall disturb, move or destroy migratory bird nests. If a nest or young birds are encountered, the Contractor shall cease work in the immediate area of the nest and contact the Senior Project Manager
- If a nest is discovered, physical protection measures such as heras fencing shall be put in place, complete with appropriate signage
- If a nest is discovered, regular inspection and maintenance of the physical protection shall take place as necessary
- If a nest is discovered, provision of training and information about the importance of 'wildlife protection zones' will be carried out to all construction personnel on site.

Legislation

Nesting birds are protected by the Wildlife and Countryside Act 1981 (as amended). Disturbance to nesting birds is illegal.

6.6 Trees



General Protection Measures that apply shall include:

- Heras fencing will be erected on the Northern, Western perimeter to protect the trees. No vehicles, foot traffic or plant will be allowed in this area. The protective fencing shall be maintained in situ on site until all equipment, machinery and surplus materials have been removed from the site
- No retained tree shall be cut down, uprooted or destroyed, nor shall any retained tree be topped or lopped other than in accordance with the approved plans and particulars, without the written approval of the local planning authority
- If any retained tree is removed, uprooted or destroyed or dies, another tree shall be planted at the same place and that tree shall be of such size and species, and shall be planted at such time, as may be specified in writing by the local planning authority
- All tree work will be carried out by a competent contractor in accordance with British Standard BS 3998 "Recommendations for Tree Work". In order avoid damage to trees/shrubs adjacent to and within the site which are of important amenity value to the area

6.7 Resource Use

P.P. O'Connor shall ensure where practicable, that the use of recycled or sustainable materials shall be utilised. A dedicated agreed area shall be maintained for storage of all materials and due care and appropriate handling shall be undertaken at all times to reduce any risk of damages and wastage.

6.8 Energy Resource and Consumption

"Switch it Off" schemes and other energy saving campaigns shall be implemented on site to encourage all personnel to consider their Carbon Footprint.

6.9 Water Usage

Within site accommodation, taps shall be switched off when not in use and all staff shall be made aware of water saving techniques. Every effort to ensure reduction in water use shall be implemented where available**.**

6.10 Vermin

Maintenance of a clean and tidy site including vermin control is essential. The site compound area is to be maintained as vermin free. The following mitigation measures will be implemented:

- Prevention of accumulation of refuse and putrescent materials
- Ensuring any on site catering facilities pay careful attention to the mess facilities and disposal of food waste.

6.11 Ecological Enhancement

The following measures will be carried out by P.P. O'Connor to make a positive contribution to the biodiversity on site:

- Introduction of hedgehog houses across the site
- Planting of trees, hedgerows and lawns.

7. Emergency Response Instructions

This section prescribes what pollution equipment shall be available, the immediate actions to take in the event of a pollution incident and the method of reporting.

Response Strategies
The first stages of response in the event of a pollution incident are:

Stop – Stop the leak immediately and all work in the immediate area

Contain – by using granules and spill kits, or inert material such as sand or soil, or by digging trenches etc.

Notify – Notify your supervisor immediately who in turn **shall without delay** inform the Environmental Officer

Recover – by using absorbent pads. Bag all contaminated materials

Dispose - by placing contaminated material back in the appropriate bin / container and which will be collected by a licenced Environmental Waste Company

Any spillages into a watercourse must be reported to EA as soon as possible – this will be the responsibility of the Environmental Officer

8.0 Monitor and Review

8.1. Audit, Inspection and Monitoring

The environmental performance of the construction works will be monitored and reviewed as follows.

8.2. Internal Audits

Internal audits are carried out according to P.P. O'Connor's procedures.

8.3. Inspections

Environmental Inspections shall be carried out as and when required by the Environmental Officer.

Inspections cover Health and Safety as well as some environmental aspects are carried out by all Managers and Supervisors on a weekly basis.

8.4. Corrective Action

Where practicable to do so, environmental deviations are dealt with immediately, ensuring the potential for environmental impact is minimised and the contained. Findings will be tracked to closure by the Environmental Officer or appropriate nominee.

8.5. Records

All original records associated with the environmental management of the site will be retained throughout the demolition. The Environmental Officer and the Employer shall determine which records shall be maintained beyond the project completion.

Records include but may not be limited to:

- Environmental reports
- Waste transfer notes
- Hazardous waste consignment notes
- Permits, licences and consents
- All complaints
- Site inspection / audit records

9. ENVIRONMENTAL ASPECTS AND IMPACTS CHECKLIST

		Activities and Potential Impacts						
Potential Aspect		Potential Impact	Likelihood of Impact	Severity of Impact	Score	Significance	Mitigation/Action	Control (C) or Influence (I)
WATER	SURFACE WATER HYDROLOGY AND CHANNEL MORPHOLOGY	**Use of vehicles and machinery** - Increase in surface runoff from soil compaction.	3	2	5	LOW	Where hard standing is provided, this should be permeable wherever possible to reduce site run-off.	C&I
		Earthworks - Pollution from suspended material. -Disturbance of contaminated soil and subsequent pollution of water courses.	3 3	3 3	9 9	MODERATE MODERATE	-Storage of fuel, equipment and construction materials as to minimise the risk of soil contamination or water pollution. *(See Environment Agency Pollution Prevention Guideline 5, on construction demolition).* -Diesels will be stored in a double-bunded fuel bowser / tank. - Oils and solvents will be stored in a COSHH container with a drip tray. - Spill kits will be available on site in case of any accidental spillages.	C&I C&I
		Material Management -Pollution from spills or leaks of fuel, oil and construction material.	3	3	9	MODERATE	- All members of staff will be trained how to use spill kits in the event of a spill or leak of fuel oil or construction material.	C&I
		Earthworks - Disturbance of contaminated soil and subsequent ground water pollution.	3	2	6	LOW	-Where land affected by contamination is identified a management plan will be prepared by PPO to facilitate compliance with relevant handling and disposal legislation.	C&I

LAND	SOIL	**Materials Management** Pollution from spills or leaks of fuel and construction material.	3	2	6	MODERATE	All employees will be trained how to use spill kits.	C&I
		Use of vehicles and machinery - Emissions from construction site traffic.	3	3	9	MODERATE	-Ensure all vehicles are renewed every 2-3 years and vehicles and plant are turned off when they are not in use.	C&I
AIR	LOCAL AIR QUALITY	**Use of vehicles and machinery** - Dust Generation from demolition/drilling/cutting kerbstone etc.	3	3	9	MODERATE	-Use of dust control strategies such as damping down to reduce dust generation during dry and windy conditions. Portable water suppression to be used for cutting kerbs, pavings etc.	C&I
		Waste Disposal - Contamination of soil from toxic or hazardous waste materials. -Implications of contaminated land for future use of site.	2	3	6	MODERATE	- Should unexpected evidence of contamination be identified during construction/demolition, development within the affected area will temporarily cease and the opinion of an appropriately qualified contamination consultant obtained for clarification	C&I
		Materials Management -Harm to aquatic flora and fauna from oil, fuel, and cement to other substances entering watercourses.	2	2	4	LOW	- Should unexpected evidence of contamination be identified during construction/demolition, development within the affected area will temporarily cease and the opinion of an appropriately qualified contamination consultant obtained.	C&I

FLORA AND FAUNA	AQUATIC ECOLOGY	**Tree Protection** Protected trees may be damaged/destroyed during construction/demolition works. **Bat Exclusion** Bats may be disturbed/destroyed during construction/demolition works.	1	1	1	LOW	-Arboriculture advice from competent contractors and consultants, or the authority, will help to inform contractors of protected trees. Tree survey to be undertaken by client before works take place. - Tree felling and shrub clearance is to be undertaken outside of the bird nesting season. -Phasing of demolition work to minimise disturbance of wildlife at sensitive times of the year such as during the breeding season or when young are being raised. A bat survey is to be completed before construction and demolition works begin.	C&I C&I
	TERRESTRIAL ECOLOGY	**Use of Vehicles and Machinery** - Noise from construction traffic and operations, machinery plant. - Mud on roads.	2 2	2 2	4 4	LOW LOW	-Time site activities during the day to reduce the impact on local people. -Routine monitoring of noise, dust and vibration as necessary. -Working hours and estimated duration of works will be advertised to local concerned parties. -Regular servicing and maintenance. Weekly inspection. Machinery/plant with lowest noise levels to be used. -No works generating noise be conducted between 0800am -16.00pm Monday-Friday and 0800am – 1pm on Saturdays. No noisy works should be carried out on Sundays or bank holidays. -Use of barriers around the site to provide acoustic, visual and dust screening. -Use of activities to minimise mud such as portable wheel washing facilities for vehicles leaving the site	C&I C&I C&I C&I C&I C&I C&I

		Use of Machinery -Excessive light from flood lighting etc.	1	1	2	LOW	and road sweeping machinery for road cleaning. - Sheeting of trucks carrying materials off site will reduce production of litter. -Avoidance of lighting e.g. floodlighting, unless required for health and safety purposes; any lighting to be directed away from sensitive areas such as neighbouring houses.	C&I C&I C&I
	NUISANCE	**Earthworks and Excavations** - Disruption of services such as gas and electricity, telecommunications due to the presence of underground cables and pipes.	3	3	6	LOW	All areas will be cat scanned before earth works and excavations take place and permits issued	C&I
	SOCIO-ECONOMIC	**Earthworks and Excavations** - Risk of injury on construction site.	3	3	9	MODERTE	All employees will be trained and competent to do the job they have been asked to do, members of the public will not be granted access to the site.	C&I
	HEALTH AND SAFETY	**Waste Disposal Operations** -Risk of harm from waste deposited (e.g. consumption of contaminated ground water). - Odours from waste deposited. - Production of unsightly litter.	2	3	6	LOW	- All waste will be stored in separate skips e.g. wood, concrete etc. Asbestos and other hazardous materials will be kept in a sealed, locked container.	C&I