LOVELL

CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN
Rev C Sept 2022

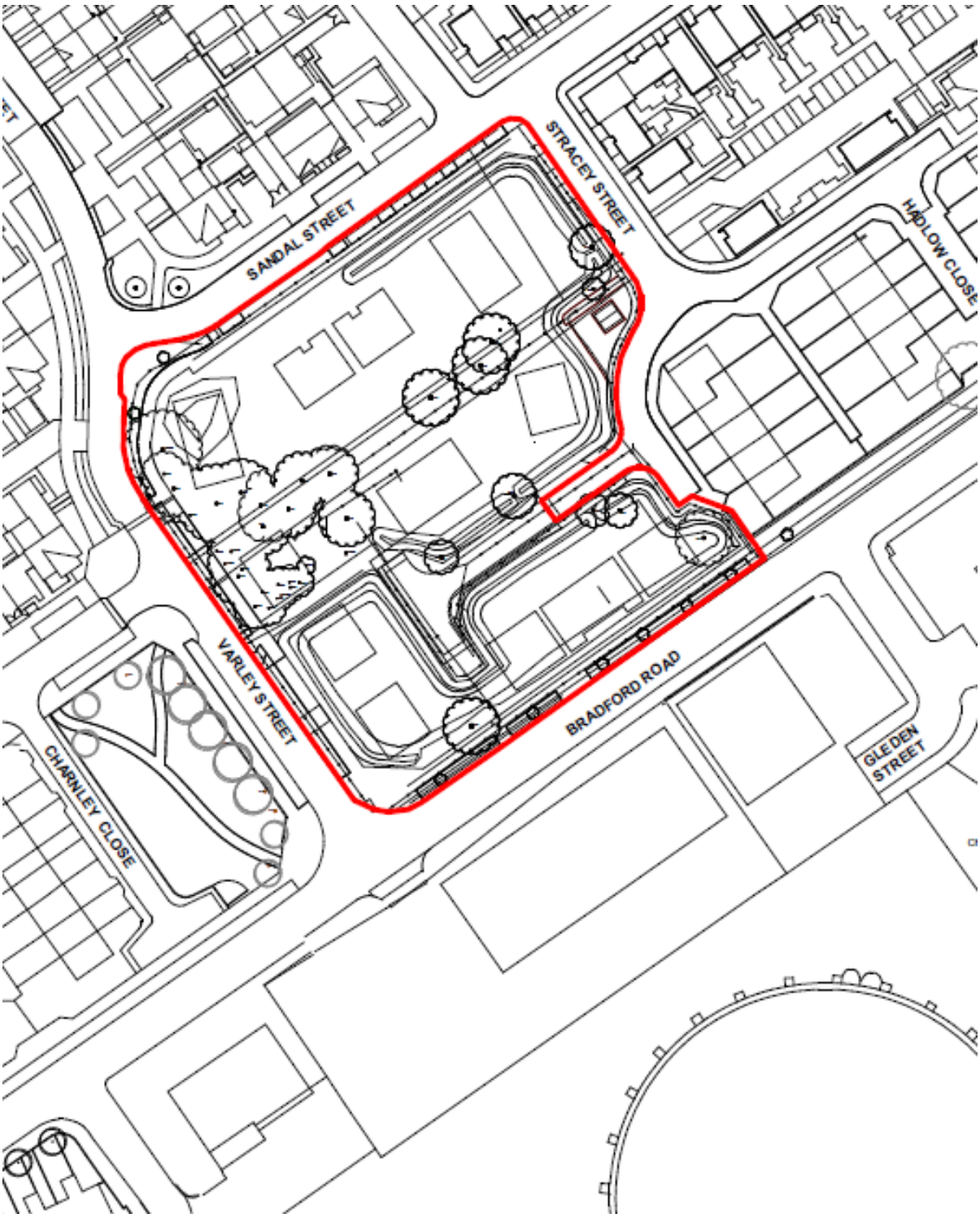
Miles Platting Cell 7.5 (B)

Land off Sabden Close
Miles Platting
Manchester

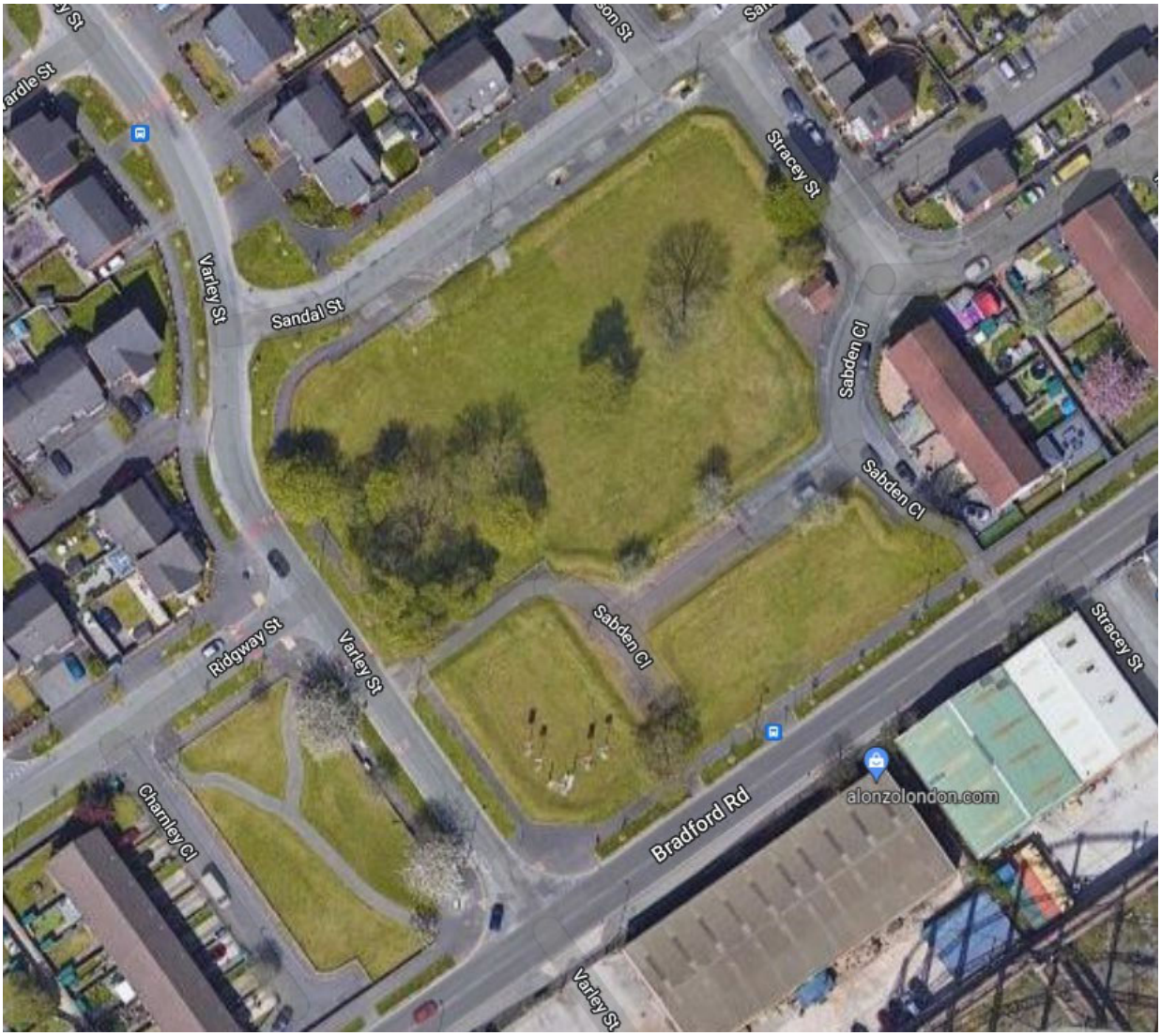
Description of the project

This specific phase, cell 7.5 (B)involves the design & construction of 28 residential properties in a mix of semi-detached / terraced housing. There is associated road access, parking, landscaping and boundary treatments. The site is situated on a brown field plot of land with all previous buildings demolished.

- **Location**



Existing Site



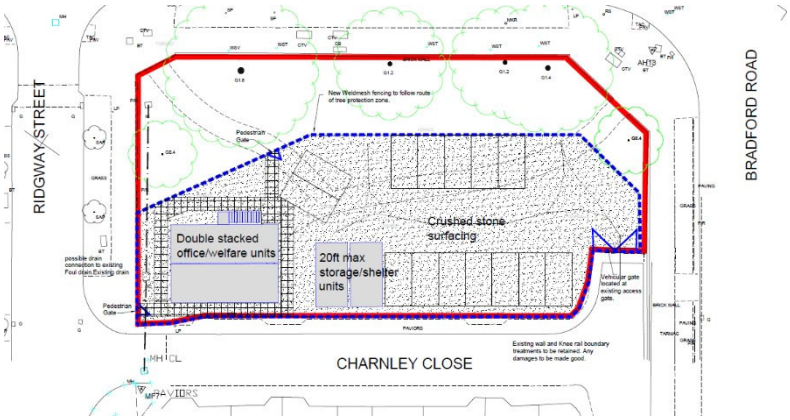
Previous use included a single high rise apartment block and terraced housing.
The site was cleared around 2011 and forms part of the wider Miles Platting redevelopment.

Proposed Site Plan

Phasing

The site will be completed as a single phase. It is envisaged that the works will commence in November 2022 with a duration of approximately 55 weeks subject to sales.

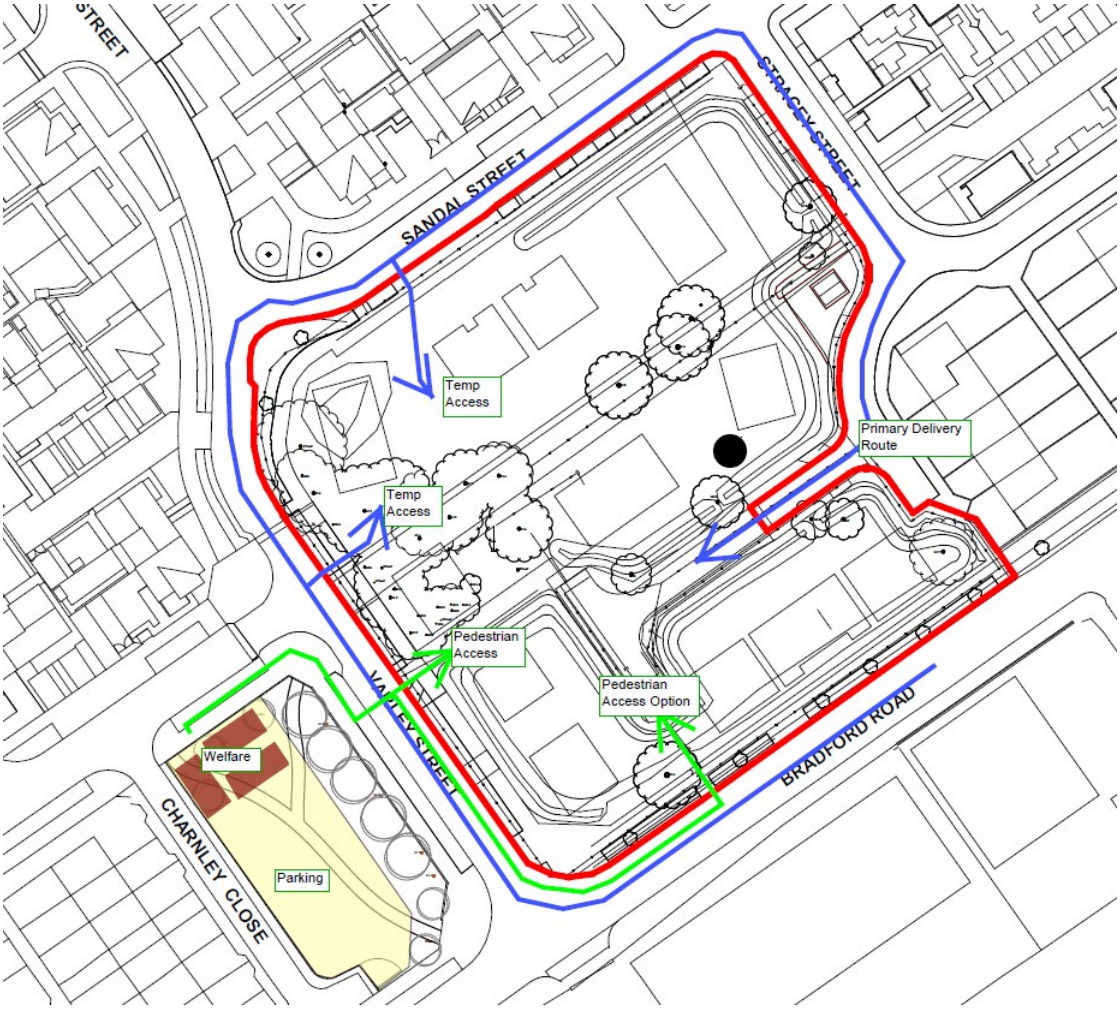
Parking, Compound & Welfare



As this cell is small, there is limited provision for operative parking. Initial parking will be provided an area off site, together with the provision of site offices & welfare.
As the site progresses this hardstanding may be insufficient and additional parking will need to be provided within the existing estate roads.
Upon completion this area will be reinstated.
Access is controlled through pedestrian and vehicular gates.
All visitors/operatives will be required to report to the site manager before accessing the main site.

Access to Site & Delivery Route

Access will be from the access formed off Sabden Close with deliveries from Varley Street. Due to the confines of the site, it may be necessary to off load certain vehicles from the access



There will be a designated pedestrian access from the welfare compound and the site workface/s. This access will be clearly identified using coloured barriers and is intended to segregate pedestrians from site plant.

Deliveries for the site will utilise the main access roads from Bradford Road. The roads are of a size suitable for the delivery vehicles. Initial deliveries will be by rigid vehicles only and whenever possible we will maintain a one way system.

Hours of Work

Works will be carried out between the following times

Monday to Friday	- 0730 to 1800
Saturday	- 0830 to 1400
Sunday	- No work

Existing Trees

Following concerns from the local residents, we have reviewed the construction sequence and access to see if it is possible to retain any more of the existing trees.
We would like to retain as many trees as possible that aren't within the influence zone of the plots, however operationally we must consider the following:

- Ensuring the safe operation of lifting equipment such as cranes and telescopic forklifts.
- Providing safe areas for feeding the supply chain with materials from within the confines of the site.
- Ensuring the safety of the public by minimising the need for material handling to occur from the public highways and ensure efficient segregation.

Taking the above factors, the optimum solution is to remove the whole group of trees at the rear of plots 4 & 5 to allow all materials to be fed from the rear. To feed from Varley Street would be unsafe due to the lack of segregation from the public.

By delaying the commencement of a number of the internal plots and re-designing drainage, we are able to retain a number of additional trees, as marked in orange below. It must be noted that these trees are within the working area, whilst they will be protected from impact using fencing, it may be necessary to remove branches etc. to reduce the overhang of the crown.

Delivering Safely Information

To provide information and expectations when delivering and collecting goods to / from this site.

Site address:		Miles Platting Cell 7.5, Sabden Close, Miles Platting, Manchester.			
Site contact details:		Shaun Cornthwaite, contact details to be advised			
Date:	28th Sept 2022	Initial information	✓	Updated information	

Risks associated with this site	Controls
Residential area / schools etc.	Deliveries to avoid school hours when possibe and rigid wagons only. High likelihood of children and elderly persons in the immediate area.
Site pedestrians	Pedestrians and vehicles should be effectively segregated at all times. No unauthorised reversing. Contact site manager to identify delivery locations and arrange for banksman if necessary.
Overhead risks (electricity / BT cables)	No current restrictions
Low / narrow bridges	Access the site via Bradford Road
Frequency of deliveries	Likely soil removal using 8 wheel rigid vehicles 4 to 6 per hour for initial 1 week. Pile deliveries during piled foundations, approx. 1 load per day over a 1 week period on rigid vehicle, 2 visits Deliveries of materials expected maximum of 10 per day for site duration. Concrete deliveries 6 movements per day until foundations are complete using 6m3 mixer trucks. Hard core using 8 wheel rigid, 24 movements per day for initial 3 weeks. Crane provision for roofs and foundations, 5 movements over duration of project
Road conditions	Residential Roads, generally narrow with parked vehicles
Major Road Works	Non identified
Falls from height	There is no provision of fall protection measures on this site. If access onto the vehicle is necessary/likely, haulier MUST inform how falls will be prevented or risks reduced.
Visitor Parking	There is limited visitor parking available. Visitors should park on car park provided but may be asked to move their vehicle if required. Do not block access to existing properties.
Use of lifting equipment	Hauliers using their own lifting equipment (i.e. HIAB/Moffett) a suitable lifting plan/risk assessment MUST have been completed prior to commencing the lift.
Contamination (Mud)	If entering site with a vehicle, ensure that the wheels are checked for contamination prior to departing. Should it be necessary the wheels will be washed with a high pressure washer

Disturbance to Neighbouring Properties

The site is within a residential area and all contractors will be made aware of specific restrictions during the site induction. All contractors are familiar with the Miles Platting area and have worked on previous cells for Lovell.

The main concerns identified are:

Risk	likelihood	Impact	Control Measure
Contamination from oils and fuel.	Low	High	Refuel points located away from drainage points. All surface water drain points identified. Two spill kits will be available on site, one at the refuelling point and one at the site office. Bunded fuel containers. Drip trays used on all generators.
Silt & Rubbish	Low	Low	We will install a secure fence to the perimeter of the site. This will catch wind blown rubbish. Timber frame construction reduces the likelihood of insulation getting blown around the site. All skips and waste areas to be netted.
Vibration	Medium	Medium	Set up & monitor vibration monitoring at site perimeter.
Parking and vehicular movement	Medium	Low	We will ensure that all deliveries and visiting vehicles receive a copy of our manaagement plan and report to our site manager who can access if there are any concerns.
Damage to existing roads	Low	Low	Immediately prior to commencing work will will employ a proffessional photographer to undertake a full delapidation survey of the existing streets, pavements etc.

Emergency Contacts

The site sign board will identify the contact number for the site manager and an out of hours emergency number. The sign board will be located in a publicly accessible area adjacent to the welfare area. There will also be contact details for the security displayed on the site hoarding at regular intervals.

Dilapidation Surveys

Immediately prior to commencing work on site a full photographic dilapidation survey of the surrounding roads and footpaths will be carried out by a specialist photographer.

Communication & Community Consultation

Prior to starting and at frequent intervals the site will develop and issue a newsletter. This newsletter will inform the surrounding residents of what to expect over the coming weeks, the stage of build and anything that may be unusual such a crane lifts.

We will endeavour to interact with the local community and follow the guidance of the UKCG Good Neighbour Site Guide. Any unusual activities will be communicated to local business and residents via the news letter well in advance with a contact number that people can call to discuss any concerns that they may have.

Lovell are an associate member of the Considerate Constructors Scheme and this site will be registered and all contact details displayed.

CONSIDERATE CONSTRUCTORS

ASSOCIATE

5 YEARS

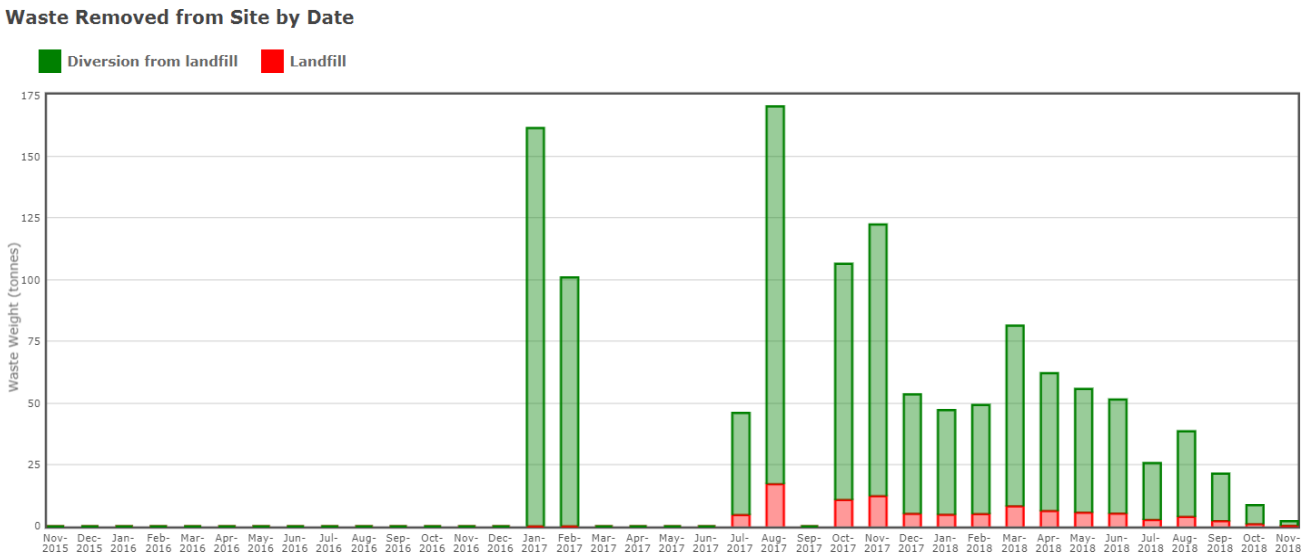
Control of Waste

The site will be monitoring all waste using a Site Waste Management Plan in accordance with Lovell waste management strategy. This is explained later in this document and is intended to minimise all construction waste and recycle/reuse materials whenever possible.
All waste taken off site must be recorded on a waste transfer note and a copy given to the site management. Waste will generally fall into three categories:

Soil & Excavated Waste – this will be removed directly to a designated tip in 20 tonne vehicles loaded using excavator plant.

General waste – this will be collected using tipping skips attached to a forklift and deposited in a general waste skip for removal.

Waste that can be reused or recycled – This will be stored in the site compound or a designated area and will be either reused on site, recycled or taken to other sites using the correct certification. Waste for recycling off site, such as timber, will be placed in a designated skip and removed through our skip provider. The waste carrier will provide details of all waste and identify the percentage of recycled material. For example



Waste By Type And Category

Item	Demolition Waste (tonnes)	Recycled (%)	Construction Waste (tonnes)	Recycled (%)	Hazardous Waste (tonnes)	Recycled (%)	Excavation Waste (tonnes)	Recycled (%)
Mixtures of concrete, bricks, tiles and ceramics	40.4 tonnes	100%	222.0 tonnes	100%	0.0 tonnes	0%	0.0 tonnes	0%
Mixed C&D waste	0.0 tonnes	0%	935.2 tonnes	90%	0.0 tonnes	0%	0.0 tonnes	0%
Mixed municipal waste	0.0 tonnes	0%	6.4 tonnes	95%	0.0 tonnes	0%	0.0 tonnes	0%

All vehicles removing waste from site will be sheeted to prevent contamination from dust and wind blown particles.

Control of Deliveries and Wheel Washing

To prevent contamination of the local roads, all materials and plant are to be off loaded onto hard-core areas adjacent to the site entrance. This area will act as a break area; delivery vehicles will remain on the clean hardstanding and materials will be distributed by a forklift that will remain on site.
Due to the confines of the site and the use of haul roads it is considered unnecessary nor feasible to provide a dedicated wheel wash. Should vehicles need to access the site (e.g. concrete deliveries) their wheels will be inspected by the banksman for mud etc. and be washed down with a jet wash if required before being allowed onto the public highway. This process has been utilised on previous developments and has proved successful.
The roads surrounding the site will be monitored and road sweeping provided as required. Details of specific restrictions are identified later in this document. The compound access will utilise existing roads suitable for typical delivery vehicles and as such a swept path analysis is not required.

Hoarding and Access

The site will securely hoarded either using a powder coated mesh fence to public areas or timber hoarding with designated access gates. All access is to remain closed at all times and will be fitted with a combination lock. Internal fencing acting as segregation will be Heras type mesh panels. This hoarding will be erected prior to commencement.

Control of Dust

We will endeavour to construct the new estate roads early in the development to provide a hard running area for site vehicles. Conditions on site will be monitored by the site manager and control measures should dust pollution become a problem include:

- Road Sweeping, either by specialist vehicle or fork lift attachment.
- Damping down using a water bowser.
- Localised mist systems using a fine spray of water from a perforated hosepipe.
- There will be a fork lift sweep attachment available on site at all times and it is preferable to control the dust at source rather than resorting to damping down.

Management of the work and Control of Dust

Prior to starting on site we will have a developed a traffic management plan (TMP) to ensure the effective management of deliveries and construction traffic in order to ensure the safety of the general public. This TMP will take into consideration local residents, businesses, schools and such like. The TMP will indicate:

- Permitted routes for construction traffic and deliveries
- Lay down areas for deliveries (within the safety of the site and using the existing hardstanding or new roads)
- Parking will be discussed during site inductions and under no circumstance will operative cars be permitted to park in designated resident parking spaces.
- All suppliers will be sent the TMP and detailed instructions for drivers so they are aware of the arrangements prior to arriving at the sites. All deliveries will be pre-arranged.
- Site working hours will be restricted to 7.30am until 6pm Monday to Friday and 8.30am to 2pm Saturday. Working outside of these hours will only occur when prior agreement has been made with the Local Authority, client and residents with a minimum of 4 weeks notice, (except in an emergency).
- Due to the residential area, when possible deliveries will avoid the times when pupils are most likely to be arriving and leaving school and passing the site by car or on foot.
- The surrounding estate roads will be swept as required and delivery vehicles restricted to clean haul roads or tarmac. The TMP has been designed to ensure that there will be minimal need for the cleaning of vehicles. When necessary, wheel washing will be provided by a local high pressure jet wash. There will also be regular road sweeping as required.
- Although forklifts will be used to distribute materials around the site they will not be permitted on the roads except for access to completed properties when they will be provided with a banks-man if necessary. The bank-man will be responsible for ensuring that the access road is cleaned using a fork lift mounted road brush.
- A speed limit of 9 mph will be adopted on the site.
- Deliveries will be made in small loads to accommodate the small estate roads and in consideration of local residents and their safety.
- All project stakeholders will be informed in writing in advance of any works outside the site boundary, including temporary works to the highways and drainage.
- Best practice will be adopted, in particular adhering to BSI Code of Practice BS5228-1 2009 for noise and vibration control on construction and open sites
- Noise will be kept to an absolute minimum. As part of their site induction operatives will be given the following instructions relating to the minimisation of noise:
    - Never carry out work outside site working hours. (0730 to 1800)
    - Keep machine covers closed when operating.
    - Do not keep machinery running unnecessarily.

    - Use noise screens for noisy machinery as indicated within the Method Statement.
    - Dust extractors for machinery will be used and water also used to damp down.
- All cleaning of plots will be carried out by the relevant subcontractor using a filtered vacuum cleaner. Operatives will wear suitable respiratory protection during cleaning involving dust and be face fit tested. Should the working area not be cleaned by the subcontractor a Lovell representative will issue a "Subcontractor Notice Q021" and arrange for the area to be cleaned at the subcontractors cost.
- Vehicles carrying dusty materials will be sheeted.
- Damping down of haul roads will be carried out as required.
- Skips will be kept covered when required.

The Site Manager will monitor the level of dust and will suspend any work that is deemed excessively dusty until the necessary minimisation measures are put in place.

Environment

Operational Control

Site management are responsible for ensuring all necessary environmental control measures identified within this plan are followed and implemented prior to start of any construction activities.
Pre start meetings with contractors will assess arrangements contractors have provided for minimising waste. Surveyor and Contracts Manager are responsible for ensuring contractors have included waste controls within their site documentation and they sign the administration document before signing off the order.

Site induction will include environmental controls in place or necessary actions required.

Site management will undertake weekly recorded inspections to ensure relevant environmental control measures are appropriate, and controls are being complied with.
Site environmental performance will also be monitored regularly by our health, safety and environment team. The inspection report will be discussed with site management and any recommendations will be actioned as necessary.

Spillage Kit Provisions

The site will maintain a suitable spillage kit at the re-fuelling point and the main site office.

Soil resource management

The project is generally situated on a green space area and will be subject to a defined remediation strategy. Any soil that can be retained for reuse will be subject to testing and if suitable shall be stockpiled onsite for use in either gardens or public areas.

Control of noise on site

To control noise escaping the site boundary, best practice will be adopted, in particular adhering to BSI Code of Practice BS5228- 1 2009 for noise and vibration control on construction and open sites

BS 5228 -1:2009 'Code of practice for noise and vibration control on construction and open sites

Part 1 of the Code of Practice for Noise and Vibration Control on Construction and Open Sites provides guidance on the methods that can be used to predict and measure noise from construction activities and how to assess the impact on those exposed to it. This applies to both operatives and local existing residents.

The guidance sets out the methods of estimating noise from construction sites to take into account distance, ground effects, reflections from surfaces, and screening by obstacles. Annexes C and D provide generic source noise data for various items of plant used on open sites which can be used in the absence of measured data.
Annex E 'Significance of noise effects' of BS5228 presents various methods of determining the significance of noise effects due to construction works.

Prior to commencing work likely to generate excessive noise at the site boundary, an assessment using the ABC method detailed in Annex E.3.2 will be undertaken together with background readings at the appropriate time of day with the measured ambient noise level rounded to the nearest 5 dB. This is then compared with the total anticipated noise level, including construction activities. If the total noise level exceeds the appropriate category value appropriate noise mitigation measures will be taken.

In particular we will be assessing

- Any anticipated increase in ambient noise due to site preparation, earthworks and construction (fixed and mobile plant on site).

- Any anticipated increase in road traffic noise due to site preparation, earthworks and construction vehicles

Noise Mitigation

The noise impact of the construction phases can be minimised by use of the noise control measures, as suggested in Section 8 of BS 5228-1:2009.
General principles for the control of noise during the construction works are presented below.

- Appropriate choice of plant and equipment

- Regular plant maintenance to keep plant in good working condition and reduce noise from machinery

- Careful phasing of the proposed operations; and

- Provision of temporary barriers.

Operating Methods of Noise Reduction require that all staff and operatives are briefed on the requirement to minimise nuisance from site activities. For example:

No equipment shall operate other than at the manufacturers' rated working levels;

Operatives shall not 'rev' equipment unnecessarily.

Use of breakers on site shall be kept to an absolute minimum and only silenced or sound models shall be used.

No plant and equipment shall be left running if not required for immediate use. Where this is not practicable, equipment shall be set to idle in the quietest manner to minimise noise emissions.

Resilient materials should be used where possible to reduce impact noise where materials are being moved or dropped e.g. lining chutes and dumpers.

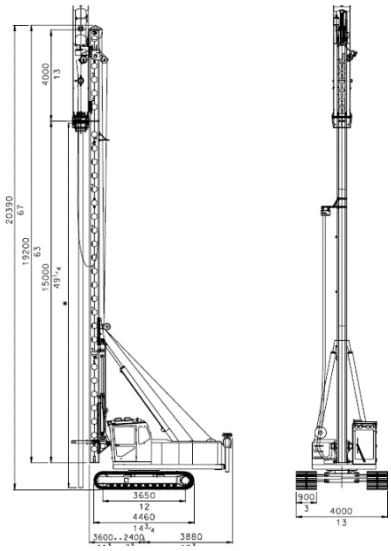
Materials should be lowered whenever practicable and otherwise drop heights should be kept to a minimum.

Noise Reduction of Mobile Plant

- The movement of plant onto and around the site should have regard to the normal operating hours of the site and the location of any noise sensitive receptors.
- Audible reversing alarms should be of a type, which whilst ensuring that they give proper warning, have a minimum noise impact external to the site.
- Internal haul routes should be well maintained and avoid steep gradients.
- Earth moving plant should be fitted with efficient sound reduction equipment and manufacturers' enclosure panels should be kept closed.
- Careful phasing of the works would also aid in minimising their impact.
- Location of the site compound as far away as possible from noise sensitive locations will assist in minimising sources likely to generate nuisance.

Noise from Piling

The noisiest activity is likely to be the provision of piles for foundations. The piling will be a precast concrete driven pile (also known as a displacement pile), driven using a top driven hydraulic hammer as shown below. The use of a precast pile results in no removal of spoil off site and is the quickest method of piled foundation.



Prior to commencing piling we will contact the neighbouring properties and fully explain the process. Whilst they may feel vibration through the structure of their properties it is extremely unlikely that this will result in any form of damage.

The expected noise levels of the piling operation is as follows:

POSITION	**Average Noise Levels dB(A)**				**Peak Sound Pressure, dB(C)** *(limit 140dB)*	
	DISTANCE				DISTANCE	
	1m	5m	10m	15m	1m	5m
Front of rig (during piling)	**-**	**88**	**86**	**84**		**93**
Rear of rig (during piling)	**-**	**88**	**84**	**83**		**93**
Side of rig (during piling)	**-**	**90**	**86**	**84**		**92**
Operator Position (with door open)	**85**				**92**	
Operator position (with door closed)	**78**				**83**	

Tick Over	**74**	**dB(A)**

Sound levels generally reduce by 6db with every doubling of distance

Given the size and location of the site it is unlikely that the piling operation will affect the neighbouring properties however a number of control measures can be followed to reduce the impact of piling operations.

This may include:

- Vibration & noise monitoring at the site boundary
- Noise monitoring at the work area and site boundary.
- The piling rig can be orientated away from neighbouring properties
- Noise during piling can be further reduced by shrouding the drop hammer.
- Pile positions can be pre-bored in areas where the ground near the surface is more compact or dense.

Waste Definitions

Waste
Article 3 (1) of the Waste Framework Directive defines waste as '…any substance or object which the holder discards or intends or is required to discard…' Discard in this sense differs to the dictionary meaning as it includes not only the disposal of a substance or object but also its recovery and recycling.

Hazardous waste
Waste can either be hazardous or non-hazardous. A waste is deemed as hazardous when it contains dangerous substances that can cause harm to human health or the environment and is signified in the European Waste Catalogue (EWC) as hazardous.

Reduce
To buy/use less

Reuse
Elements of the discarded item are used again e.g. using aggregate for footpaths.

Recycle
Discards are separated into materials that may be incorporated into new products. This is different from reuse in that energy is used to change the physical properties of the materials e.g. skip waste segregation.

1) Waste Management on site

During the pre-start stage the construction team will develop and implement a site specific Site Waste Management Plan (SWMP). The SWMP shall record any design decisions made to reduce waste and forecasts must take into account subcontractor waste forecasts determined during the pre-order meeting. The project estimator will provide waste forecasts on the SWMP during the tender stage.

Prior to works commencing on site, likely waste streams (i.e. inert wastes, non-hazardous wastes, hazardous wastes) must be correctly identified by the estimator. In addition, the European Waste Catalogue (EWC) code (table 1) for each individual waste stream must be identified and recorded in the SWMP. This provides forward notice for waste management on the site.

When managing waste onsite the waste hierarchy must be applied. Consideration must be given to the following during the pre-start (by procurement teams during the tender stage) and construction stages (by site management):

Pre-start

- Order the correct amount/ arrange just in time deliveries
- Organise take back schemes
- Explore packaging reduction methods

Construction

- Ensure suitable and sufficient handling and storage of materials
- Reuse materials where possible, put offcuts back in storage facility
- Control the amount of materials leaving stores
- Ensure work methods are efficient
- Include waste management at induction
- Include waste minimisation on co-ordination meeting agendas
- Ensure materials are not delivered damaged or unsuitable (organise collection for damaged goods)
- Review the SWMP comparing forecasted amounts with actuals at monthly management reviews
- Introduce incentives and where necessary discipline measures on site
- Where possible waste segregation should occur
- Provide waste toolbox talks

Site management must enforce good housekeeping when managing waste on site. The following must be encouraged:

- All skips, drums or other appropriate containers are clearly labelled, identifying the type of waste that can be disposed of into each. Signage will help allocate waste destinations (table 2)
- Waste containers must be strong enough to hold waste securely, prevent loss or leaks
- Waste containers must be located a minimum of 10 m from any drainage or water course wherever possible, kept in designated areas and away from vehicle traffic to avoid damage.
- Waste containers must not be overfilled and waste areas must not become littered
- Where possible skips should be covered when not in use to prevent theft and loss of materials due to wind
- Waste must not be burned on site

- Table 2. Waste segregation guidelines

Plasterboard and gypsum products must not contaminate with other waste	Gypsum
Asbestos, solvents, mastics, oils, some paint, fluorescent tubes, contact adhesives, diesel, petrol	Hazardous
Clean concrete, bricks, blocks, hardcore or that which does not decompose	Inert
Any waste which cannot be recycled in other bins but not contaminated	Mixed
Any carbonaceous material which is not contaminated	Packaging
Clean clear not etched stained or leaded.	Glass
Only timber/wood products which are not treated with preservatives	Wood
Only uncontaminated examples include rebar cuts, bandings, empty paint containers, electrical wires	Metal

Waste management will be inspected by the health, safety and environmental teams as part of the inspection regime and will be subject to LIMS auditing both internally and on occasion, by our external accrediting body to ensure that an effective waste management plan is being implemented by the site management.

2) Waste re-use and disposal

3.1 Disposal of waste-duty of care
Whenever a non-waste is transferred to an authorised person this must be supported with a controlled waste transfer note. This also applies even if you have produced and carry waste yourself. Waste transfer notes for inert and non-hazardous waste must be maintained for two years.

The transfer of hazardous waste must be supported by a consignment note. In England and Wales the project manager will complete the register for hazardous waste disposal for all hazardous waste movements. This must be maintained for three years with the hazardous waste transfer notes, schedule of carrier forms and details of the sites registration with the Environment Agency.

Site management must ensure all waste transfer/consignment notes are correctly completed by the waste carrier. Copies of the notes will be kept onsite.
If it is found that any haulier/subcontractor/disposer is not complying with the duty of care requirements, the site management shall cease transferring waste via the associated company and notify line management.

3) Hazardous Waste disposal

All hazardous waste must be segregated from non-hazardous waste, the mixing of different types of waste should be avoided and the mixing of hazardous waste with non-hazardous waste to dilute the materials below the threshold concentration is banned.

When a hazardous material is removed off site a hazardous waste consignment note must be prepared.

Where waste is generated by a subcontractor for excavation or demolition, the subcontractor will provide data on the waste movements in a format as agreed with Lovell. Waste information is to be reported to the national Lovell Sustainability Co-Ordinator as part of our duty under the Morgan Sindall Sustainability Policy Framework and Carbon Reduction Commitment (CRC).

Significant environmental impacts and controls (Environmental risk assessment)

ASPECT	IMPACT	CONTROLS
POLLUTION PREVENTION PLANNING	Pollution can be caused to land, air and water at the point of delivery, especially with fuels, oils and hazardous materials; or when the area is unsuitable for storing that material.	Prepare tool box talks to site workers on deliveries and preventing pollution. Ensure the site boundary is secure and access to site is controlled. Ensure that polluting substances are securely locked away when not being used, e.g. fuel Communicate this plan and control actions to everyone working on site (For more information Reference Page 10 PPG6)
DRAINAGE	Drainage systems act as a pathway to spread pollutants small amounts of oils can spread large distance drains can make pollution invisible and can happen without the site knowing it	Identify existing drainage on the site by type surface water, soakaways, land drains, foul and combined sewers If any pollutant enters a drain, immediately stop the pollution with a physical block, stop the activity causing the pollution, then notify the EA for surface water drains or the local sewerage provider for foul water drains. If there's a spill, accident or emergency, try and prevent pollutants entering other drains. Seek advice from the environmental regulator before any pumping or disposing of water (For more information Reference Page 21 PPG6)
EXCAVATIONS AND DE-WATERING	Excavations can increase the risk of pollution on site by generating excessive dust, producing silt and silty water spreading contaminated soils finding contamination or objects, such as old fuel tanks; this is often indicated by smells, discoloured soils and oily residues water such as rain or contaminated water run-off, or groundwater entering excavations (ingress), if your water table is high	Contact the EA if you need permission to extract and/or dewater on site, permission to discharge anything to surface waters or groundwater control measures such as a settlement lagoon or tank, silt trap or a grassed area need to be in place before operations commence. To remove water (dewater) from excavations, this is high risk and permits to pump must be in place and directed by the site management. Before any excavations are made be aware of the ground investigations looking out for known contamination of the ground. Check with the Environment Agency and obtain any necessary written consent prior to any dewatering. Use the Permit to discharge HSE028 for control and consent adherence on site. Typical systems include: settlement tanks or lagoons, discharge over grassed areas, through silt socks or hay bales. Check that the point of discharge is to the correct location that is to the sewer, manhole or gulley as set out by your line manager. Check that all couplings and other pipework fittings are secure. Periodically check that any treatment systems are working and that water being finally discharged is clear of silt or solids that may give rise to pollution, and is not causing damage to the bed or banks of any watercourse. Notify your line manager immediately if you notice pollution (muddy water, oils etc.) occurring, the discharge causing flooding, any pipework is damaged or connections have broken or are leaking. Do not leave pumping operations unattended for long periods unless authorised to do so by your line manager. Do not continue with over pumping if the receiving sewer or pipeline cannot cope with the capacity. Do not ignore signs that

		pollution is occurring, for example muddy water entering watercourses or gullies. Do not tamper with pipework or discharge points without the authorisation of your line manager. (For more information Reference Page 24 PPG6)
MATERIALS STORAGE, STOCKPILES AND EXPOSED GROUND	Deliveries to site can be a common cause of pollution Vehicles can cause water, noise and dust pollution as they enter and exit site, for example by spreading mud or contaminated material on neighbouring roads.	Identify an area where all deliveries will be completed and communicate the requirements to the suppliers and those working on site. Ensure all deliveries are made as far away from watercourses and drains as possible. Define times for deliveries to site and communicate these to suppliers Make sure these delivery times are suitable for neighbours, i.e. after 9am. Ensure that all material deliveries are well be supervised (For more information Reference Page 27 PPG6)
OIL STORAGE, USE AND REFUELLING	Oil is one of the most common pollutants in the UK. Spilt oil can pollute streams, rivers and (if it soaks through the soil and rock) groundwater supplies which can be used for drinking water. Oil is toxic and harmful to plants and animals, and is a threat to their habitats. A small amount of oil can cause a large problem; five litres of oil can pollute an area of water the size of two football pitches.	Avoid storing oil in high risk locations. Don't store oil where there is risk of damage by impact or collision e.g. from site traffic within 50 metres of a spring, well or borehole, within 10 metres of a watercourse, ditch or drainage channel where spilt oil could enter open drains, loose fitting manhole covers or soak into unmade ground where it could pollute groundwater where a spill could run over hard ground to enter a watercourse or soak into unmade ground where it could pollute groundwater, where a tank vent pipe outlet can't be seen from its filling point on roofs as spilt oil can run down guttering which is connected to surface water systems Avoid storing or using oil in areas at risk from flooding. Containers may float in a flood causing oil to spill and pipelines to break Provide drip trays for all fuel bowers and associated pipework to catch any spills or leaks. Take all necessary security measures to prevent theft, or unauthorised use, by providing suitable locks, lockable containers and/ or lockable valves where necessary. Make sure the locks are used when oil storage facilities are not in use. This may be a legal requirement for some oils. (For more information Reference Page 31 PPG6)
NUISANCE	Dust, Light, Noise, Insects and vermin, Emissions/smoke, Vibration	Where possible, use machinery or plant with noise control measures e.g. silencers, mufflers, acoustic covers. Ensure that potential to cause nuisance through exhaust emissions is minimised by maintaining plant to prevent black smoke and positioning mobile or fixed plant away from site boundaries. Comply with any restrictions on operating hours or emissions set out in the planning consent. Talk with our neighbours, explain what we are doing and try to find solutions before problems arise. Only use temporary lighting where absolutely necessary. Only use temporary lighting where absolutely necessary Define access routes to and from site to prevent nuisance. Make arrangements to reduce mud leaving the site on delivery vehicles use of Anti-

		vibration mountings should be fitted to rotating / impacting equipment where practicable. Keep haul roads as smooth as possible and maintain them to reduce vibration impacts caused by heavy plant movements (For more information Reference Page 39 PPG6)
CEMENT, CONCRETE AND GROUT	Cement, concrete and grouts are highly alkaline and corrosive and can cause serious pollution to the ground and watercourses. Water wildlife, such as invertebrates and fish, are very sensitive to changes in pH (acid/alkaline) levels. Whereas oil in water is easy to see, changes to pH are not, so pollution can occur for some time before the extent of damage to wildlife is noticed	Concrete and cement mixing should be sited on an impermeable designated area, at least 10 metres away from a watercourse or surface water drain, to reduce the risk of run-off entering watercourse. Surplus dry concrete, cement and grout should be used elsewhere on site if possible, or as inert rubble; if not, it will need to be disposed of offsite. Equipment, such as chutes, portable mixers, barrows, pump lines, shovels, should be washed out in a designated area that has been specifically designed to contain wet concrete/wash water e.g. designated skip. Concrete mixing and delivery lorries should return to the batching plant for washout. Excess concrete should be sent back to the batching plant. With design concrete this may not be possible, a designated area to allow the concrete to cure without polluting the ground or watercourses will need to be established. Ensure all cement bags are sealed after use, stored appropriately to prevent leaks or dust (preferably in a waterproof. Do not over-order materials; you'll either have to store them, or pay to have them taken away. Consider timing of deliveries; it is more likely to have waste cement and concrete if it's delivered at the wrong time. Identify all watercourses, gullies and drains prior to commencing work. Store bulk and bagged cement and concrete additives at least 10 metres away from watercourses, gullies and drains. Undertake mixing/batching well away from watercourses and drains. Use only designated areas for concrete washout. Where necessary protect nearby drains against washout and water running into them. NOTIFY your manager IMMEDIATELY if you see any concrete spillages or concrete washout likely to cause pollution. Do not hose down spills of concrete or cement into surface water drains. Do not allow ready-mix trucks to washout anywhere other than in areas designated for the purpose. Do not wash off any tools or plant in watercourses. Do not allow mortar wash out to be tipped directly onto the ground – allow to set and remove to site skip. (For more information Reference Page 41 PPG6)
LAND CONTAMINATION	Common pollutants especially on brownfield sites include asbestos, hydrocarbons such as oils and fuels and hazardous heavy metals and solvents. They might be present in either the soil or groundwater or both.	Ensure you're aware of any planning conditions or requirements to investigate or remediate any land contamination. A specialist contamination assessment will need to have been undertaken, even if the site is not classed as 'contaminated land'; this should help to identify the location of any contaminants and the measures required to manage them Ensure that we work to agreed methods to prevent pollution. If you discover unexpected contamination on the site, stop works and seek advice from the environmental manage,

		the EA or the local council. (For more information Reference Page 45 PPG6)
INVASIVE WEEDS SPECIES	Some plants in the UK are designated as invasive non-native species; these are plants that don't naturally occur in the UK but, when introduced, establish themselves very quickly. They have a significant impact on construction sites as they spread easily, are difficult to eradicate, can damage structures, contaminate soil and also damage the natural ecology in your area. Invasive plants can be either land or water based e.g. Japanese Knotweed, Himalayan Balsam and Giant Hogweed. The owner / occupier of a site is required by law to manage and prevent the spread of invasive plants. If we knowingly spread, or allow these plants to spread, through our activities we will be committing an offence	Before work starts, identify any invasive plants on site. If you're unsure, seek a site visit from a competent expert (e.g. an ecologist, or Health, Safety and Environmental manager). We must contact the EA if we propose to use herbicides to manage invasive plants in or near watercourse. We have a duty of care to dispose of waste responsibly. Contact the EA if you need advice on how to dispose of invasive plants. Obtain and collect pictures and information to identify invasive species for use on site. Talk with an expert advisor so you're familiar with the contaminants / invasive plants and how to deal with them. Communicate this to staff on site so that they are aware of how to deal with them or what to look out for. If you think you've identified any invasive plants on site, stop work and contact site management Do not carry out any works within 7 metres of the suspect plant and engage specialists for instructions. Do not excavate or move any soil from within 7 metres of a Japanese Knotweed plant without instruction. Do not track plant or vehicles over the area. Do not stockpile potentially contaminated material within 10 metres of a watercourse or drain. Do not carry out any works in the immediate area and engage specialists for instructions. Do not disturb the seedpods. Do not move soil that may contain seeds or other plant material without specific instructions. Do not carry out any works in the immediate area and engage specialists for instructions. Seek medical advice if you have been in contact with the sap. Wear protective clothing before touching the plant. Do not handle the plant until further advice is taken. Do not move soil that may contain seeds without specific instructions. (For more information Reference Page 45 PPG6)
CHEMICALS AND HAZARDOUS SUBSTANCES	All chemicals and hazardous substances or materials we store and use such as oils, cleaning products, solvents and pesticides could cause pollution if they spill onto land, enter surface waters or groundwater or are released into the air. If we cause or allow pollution to occur we may be prosecuted and fined.	'Safety Data Sheet (SDS)' should be provided with chemicals and hazardous by the supplier, or manufacturer. If you receive a chemical without an SDS, contact the supplier to find out whether or not they have to provide one. Follow these instructions carefully as they tell you how to store, use and dispose of chemicals and hazardous materials safely. Attempt to replace hazardous products with non-hazardous alternatives. Ensure that a responsible person is designated to control the issuing of chemicals and hazardous materials Store all chemicals and hazardous substances away from areas where there is risk of damage from impact or collision e.g. site traffic Ensure all chemicals and hazardous substances are stored securely, stored on impermeable surfaces, labelled, and that containers are sealed when not in use, inspected regularly and fit for purpose i.e. free from damage, no leaks Dispose of any damaged / old containers in line with your duty of care requirements, these may be considered hazardous waste Develop incident /

		emergency plans to help you deal with spills and train individuals how to use them from the SDS sheets. Ensure that incident / emergency equipment is available at storage point. Train staff in the use of spill kits / emergency procedures. Lock storage facilities when not in use. Limit orders to what we need and limit storing substances. Never wash any spilt oil, chemicals or other pollutants away into drains or into the ground or use detergents to clean up the oil; you could cause a more serious pollution incident (For more information Reference Page 49 PPG6)
WASTE MANAGEMENT	Poor waste management is a common cause of pollution at construction and demolition sites; failing to comply with 'duty of care' leading to illegal disposal of waste such as fly tipping, illegal disposal such as burning of waste on site causing air pollution, or emissions caused by the transportation and break down of the waste in landfill sites.	Everyone on site must comply with the waste 'duty of care'; store your waste safely and securely on site e.g. prevent windblown materials such as plastics leaving the site; covered skips and bins will assist in this prevent any liquid wastes leaching from bins or skips – this includes dry wastes that may become wet, e.g. through exposure to rain; check waste storage has no holes or damage develop a site procedure for selecting and managing waste contractors, those that remove your waste, to ensure that you meet your duty of care requirements only pass waste to authorised persons and companies have appropriate duty of care documentation, i.e. completed waste transfer notes or consignment notes for hazardous waste for each load of waste removed from the site prevent hazardous wastes being mixed with other hazardous wastes or non-hazardous wastes keep all waste transfer notes and consignment notes for 2 and 3 years respectively Ensure materials aren't over-ordered to avoid waste in the first place. Lock waste storage areas, bins and skips. (For more information Reference Page 52 PPG6)
SILTY WATER	Poor management of silt and silty water is a major cause of serious pollution incidents from construction sites Silt for these purposes is fine inert sediment derived from soil and rocks. Silt pollution can: damage and kill aquatic life by smothering and suffocating reduce water quality cause flooding by blocking culverts and channels	Use of cut-off trenches, vegetation corridors adjacent to waterways to act as 'buffer strips' and reduce the amount of exposed ground for runoff. Plant, wheel and boot washing Run-off should be collected in a sump, with settled solids removed regularly and water recycled and reused where possible. Any excess water should be discharged to foul sewer with prior permission from your local sewerage provider or tankered off site for authorised disposal. Do not strip all site of vegetation when not building in that area, limiting the amount of run off. Provide silt barriers as detailed previously.
INCIDENT RESPONSE	Although careful planning and preparation reduces the risks of a pollution incident, accidents can still happen. If site	Train site staff and contactors how to use the plan and equipment such as spill kits – using tool box talks Test our plans When working near water include daily visual inspections into your incident planning. Reporting incidents Report all pollution incidents as

	workers know how to deal with an incident, and can use the necessary equipment, they can help prevent the pollution spreading and minimise damage to the environment.	soon as possible to site management or the EA Hotline: 0800 80 70 60 (Freephone, 24 hour service)
EMISSIONS TO AIR:	Activities generate air pollution above regulatory control levels or cause a public nuisance	Keep surfaces swept and damp down with water at regular intervals. Minimise drop heights into haulage vehicles. Ensure cutting and grinding operations are adequately shielded or wetted. Sheet lorries carrying dry materials off site. Keep to site speed limits to minimise dust generation. Implement wheel washes, for appropriate vehicles, where appropriate. Store fine, dry materials within buildings or provide adequate protection from the wind. Position silos and stockpiles away from residential areas or watercourses. Clean up or damp down any spillage of dry dusty materials.
EMISSIONS TO LAND:	Previous land use caused any contamination. Storage of potential pollutants, i.e. diesel fuels, hydraulic oils etc.	Fuel stored in a double skinned tank away from sources of heat and flame. Drip trays used when refuelling
RESOURCE USE	Will there be excessive resource consumption from construction activities, excessive energy consumption leading to CO^2 emissions, poor air quality, and excessive water consumption leading to demand upon natural water resources?	Envirocabins are used on sites where possible to reduce waste and energy usage. Staff are informed to conserve energy where possible by switching off lights, equipment and site machinery when not in use and to report any damage that may be discovered. Staff are required to follow the company handbook when selecting private vehicles with sensible emissions. Staff are informed to conserve water where possible by turning off taps when not in use and reporting any leaks or damage that may be discovered. Use any offcuts of materials, monitor skip usage and what is being thrown away.
ECOLOGY:	Are there any protected Wildlife or natural features in or around the site (bats, birds, reptiles, snakes, amphibians, badgers Great Crested newts, trees, hedges, flowers etc.?)	BATS Refer to or arrange to carry out ecology surveys prior to any works commencing. Instruct workforce that should they think they have found a bat or a bat roost on site to immediately stop all works in the area and inform the site management. Do not try to touch or handle a bat. They are very delicate and are likely to suffer serious harm – it is also breaking the law. Refer to the wildlife planner at the end of this section. BADGERS Check to see whether licences will be necessary if works near badgers' habitats involve heavy machines within 30 metres, use of light machines within 20 metres or hand digging or scrub clearance within 10 metres of a badger sett. Refer to the wildlife planner at the end of this section. BIRDS - Refer to or arrange to carry out ecology surveys prior to any works commencing. Most birds are fully protected and you must allow the young to leave the nest before taking any action to block the entrance holes or commence construction works. Some birds' nests can be removed, but only if they are causing a threat to health and safety. The

		nests of feral pigeons can be legally removed anywhere in the UK, and house sparrows and starlings in Wales, Scotland and Northern Ireland. If possible, please allow them to remain until the breeding cycle is complete. Refer to the wildlife planner at the end of this section for guidance on recommended survey and commencement periods. FISH Before any works in, on, under or over a river are commenced, the EA / SEPA should be consulted as these works could require consent. Points to consider include: - The pollution of watercourses by run off and sedimentation has led to a decline in fish habitat and populations. Silt is one of the most common sources of pollution. Undertaking of works at the wrong time of year could damage breeding populations. Any changes to a river channel could obstruct migratory routes, alter habitat, change flow regimes, increase flood potential etc. The introduction of fish could have a negative impact on the ecosystem. Types of mitigation for protected fish are varied and must be agreed prior to construction. Mitigation measures may include the zoning of works, buffer zones, scheduling to avoid breeding season, construction of fish passes and post construction monitoring. There may also be potential to improve the habitat, advice can be sought from the relevant Statutory Nature Conservancy Organisation (SNCO). A written Consent must be obtained from EA /SEPA for introducing fish or spawn to any inland water. It is also illegal to pollute controlled waters (rivers streams, lakes, canals, coastal water and groundwater and a system of permitting for abstracting and discharging from and to controlled waters exists and for working in, on or over waterways. (See previous section for additional information on pollution avoidance and spill control). If protected species are found after work has commenced, works in that area must stop immediately as it is illegal to injure, kill, capture or disturb any fully protected species of fish or to damage its sheltering place. Advice must be sought from an experienced person. GREAT CRESTED NEWTS Refer to or arrange to carry out ecology surveys prior to any works commencing. Instruct workforce that should they think they have identified Great Crested Newts on site to immediately stop all works in the area and inform the site management. Watch out when moving logs, stones or rubble or clearing the site near to ponds. These are favourite habitats for Great Crested Newts. Do not try to touch or otherwise disturb any Great Crested Newt. Refer to the wildlife planner in the environmental section of LIBMS.
ARCHAEOLOGY AND BUILT HERITAGE:	The works directly affecting archaeological remains, built heritage i.e. listed buildings involving construction activities	Refer to Pre Construction Information (PCI) from client. Engage and obey the advice provided by any appointed archaeologist. Instruct workforce to stop work if they find any archaeological features and immediately inform management for instructions. Do not assume that any artefacts or features discovered are unimportant. Do not remove any 'finds' such as coins, pottery, or bones from the site. It is illegal.

		Don’t undertake work adjacent areas of archaeological importance without considering if any damage may be caused as vibration may cause cracking and dewatering may cause a preserved feature to settle and crack. Do not drive vehicle through protected sites.
TRAFFIC MOVEMENTS:	Public highways suitable to accommodate anticipated construction vehicles (narrow roads, junctions, low bridges, local traffic incl. public transport) public amenities (hospitals, schools etc.)	Refer to site layout plan and TMP displayed on site
OTHER: Are there any requirements from stakeholders which might affect the project? Any design/spec constraints; Other Local and/or national government restrictions.	Any other environmental risk that has not been covered above but has been identified in the project risk list	