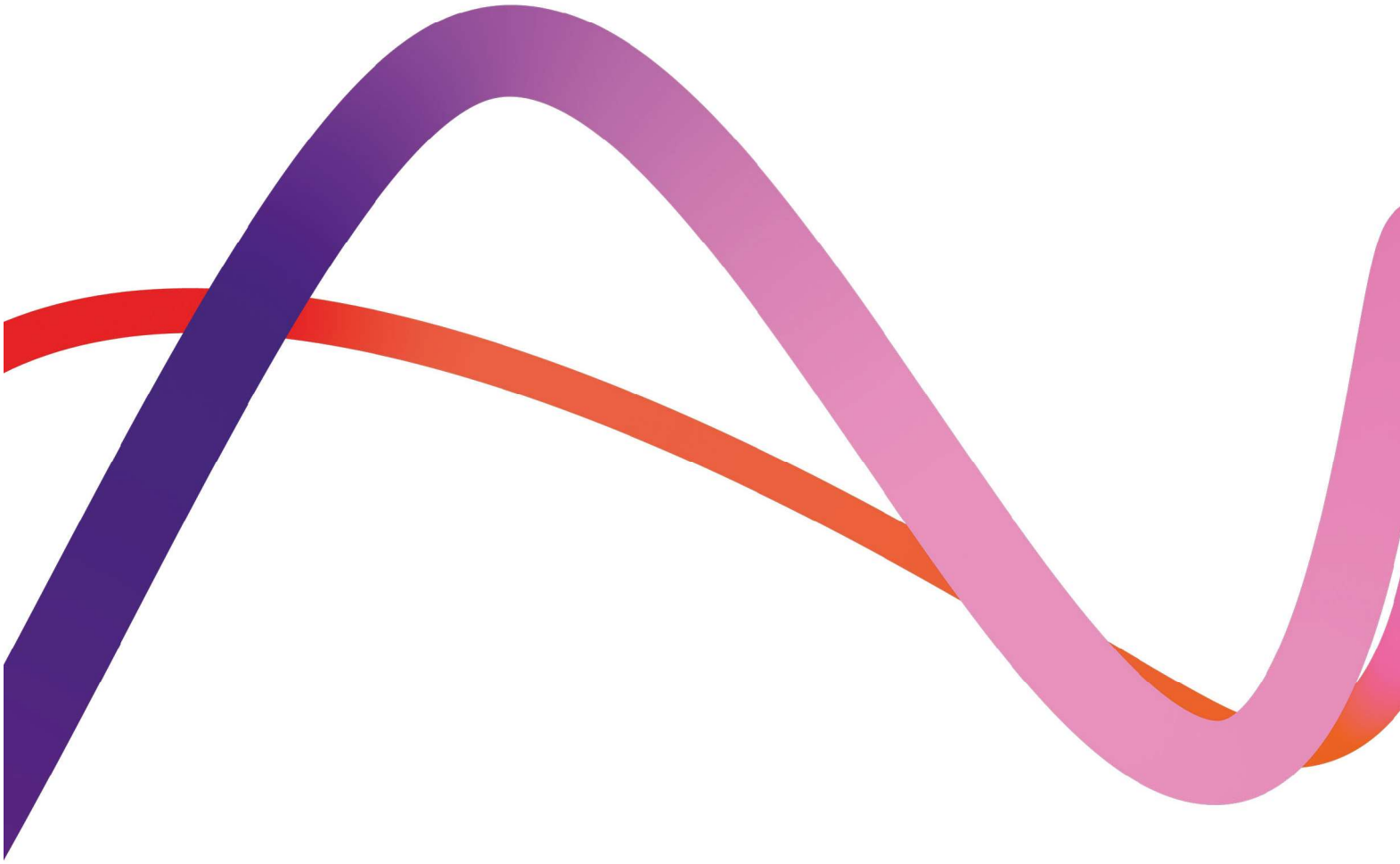
Canford Energy from Waste
Combined Heat and Power Facility



Environmental Statement
Technical Appendix 3.2

Outline Construction Environmental Management Plan

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Contents

Executive Summary

This document is the Outline Construction Environmental Management Plan (Outline CEMP) relating to the Proposed Development. This Outline CEMP sets out the responsibilities and environmental standards that the Applicant will comply with and will require its EPC contractor(s) to comply with during the construction of the Proposed Development. This Outline CEMP covers the following components of the Proposed Development:

- The construction of the EfW CHP Facility.
- The construction of associated buildings and infrastructure including a CHP Connection, District Network Connection and Temporary Construction Compound.

This Outline CEMP will be updated and confirmed by the appointed EPC Contractor ahead of construction commencing and a detailed CEMP will be submitted for approval to the Local Planning Authority. The EPC Contractor will prepare the detailed CEMP which will be referenced by construction staff on a day-to-day basis for the mitigation and management of construction-related effects. It will provide documented procedures for controlling environmental impacts to local residents and businesses during the construction phase of the Proposed Development.

This Outline CEMP details the roles and responsibilities for those managing construction activities, arrangements for inspection and for the auditing and reporting of relevant incidents.

General requirements associated with the environmentally responsible management of the site are set out, including, working hours, pollution control and environmental incident response.

Management measures are detailed relating to environmental risk, pollution prevention, construction nuisance as well as the consideration of topic specific issues and mitigation identified in the environmental Statement (ES), e.g., dust and noise.

1. Introduction

1.1 Background

1.1.1 MVV Environment Limited (the Applicant) has submit a full planning application for a Carbon Capture Retrofit Ready (CCRR) Energy from Waste Combined Heat and Power (EfW CHP) Facility at Canford Resource Park (CRP), off Magna Road, in the northern part of Poole. Together with associated CHP Connection, Distribution Network Connection (DNC) and Temporary Construction Compounds (TCC), these works are the Proposed Development.

1.1.2 The primary purpose of the Proposed Development is to treat Local Authority Collected Household (LACH) residual waste and similar residual Commercial and Industrial (C&I) waste from Bournemouth, Christchurch, Poole and surrounding areas, that cannot be recycled, reused or composted and that would otherwise be landfilled or exported to alternative EfW facilities further afield, either in the UK or Europe.

1.1.3 The Proposed Development would recover useful energy in the form of electricity and hot water from up to 260,000 tonnes of non-recyclable (residual), non-hazardous municipal, commercial and industrial waste each year. The Proposed Development has a generating capacity of approximately 31 megawatts (MW), exporting around 28.5MW of electricity to the grid. Subject to commercial contracts, the Proposed Development will have the capability to export heat (hot water) and electricity to occupiers of the Magna Business Park.

1.2 MVV's Environmental Management System

1.2.1 The Applicant is part of the MVV Energie group of companies, providing sustainable and efficient solutions for waste-fired energy generation to publicly and privately-owned waste disposal companies as well as to Local Authorities.

1.2.2 MVV's environmental management system is certified to ISO 14001: 2015 and MVV's environmental policy targets are applied to reduce its environmental impact. The EPC Contractor(s) selected will be expected to demonstrate the same level of commitment to the principles of ISO 14001: 2015, and to implement procedures and systems that are of an equivalent standard, regardless of whether or not they are certified to the standard.

1.2.3 The Applicant is committed to ensuring excellence in environmental performance for all of its employees, contractors and other stakeholders, and recognises that its activities have an environmental impact. Accordingly, it will adopt MVV's management systems and policy targets and require its EPC Contractor(s) to actively promote and administer a robust environmental culture amongst their staff, subcontractors and suppliers engaged on the contract.

1.3 Statement of MVV's' Health, Safety and Environment Policy

1.3.1 This is a formal statement of company policy in respect of management processes, due diligence, roles and responsibilities.

1.3.2 This policy sets out MVV's commitments and responsibilities to achieve environmental and social sustainability in its projects which will be adopted by the Applicant. MVV believes that sustainable development is a fundamental aspect of sound business practice and adds value to its activities by working for long-term sustainability through effective environmental and social management. It is committed to the principles of corporate transparency, accountability and stakeholder engagement.

1.3.3 Consistent with MVV's policy, the Applicant will, as a minimum:

- comply with all applicable national laws and regulations;
- minimise environmental and social impacts and continually improve environmental and social performance as an integral part of its operating strategy;
- respect stakeholders, the environment and cultural heritage;
- constructively engage with affected communities and other stakeholders and address complaints about any breach of this policy promptly;
- ensure that employees and contractors understand this policy and conform to the high standards required; and
- intervene promptly in unsafe or non-compliant situations.

1.3.4 In addition, the Applicant will actively seek to:

- ensure its activities adhere to good international industry practices in environmental, social and human resource management; and
- contribute to effective implementation of relevant principles and codes of practice related to environment, labour, corporate responsibility and access to information.

1.3.5 The Applicant will develop and maintain an ISO 14001-type environmental management system that provides the procedures and tools to implement MVV's policy.

1.4 The Proposed Development

1.4.1 This Proposed Development is located north of Poole. It will complement the existing waste activities of the integrated waste management park known as Canford Resource Park (CRP), off Magna Road. It is within the administrative area of Bournemouth Christchurch and Poole Council and is centred at National Grid Reference SZ 03436 96720.

1.4.2 The Proposed Development consists of the following key elements:

- EfW CHP Facility;
- CHP Connection;
- Distribution Network Connection (DNC); and
- Temporary Construction Compounds (TCC).

1.4.3 A full description of the Proposed Development is provided in **ES Chapter 3: Description of the Proposed Development**.

1.5 Purpose of this Document

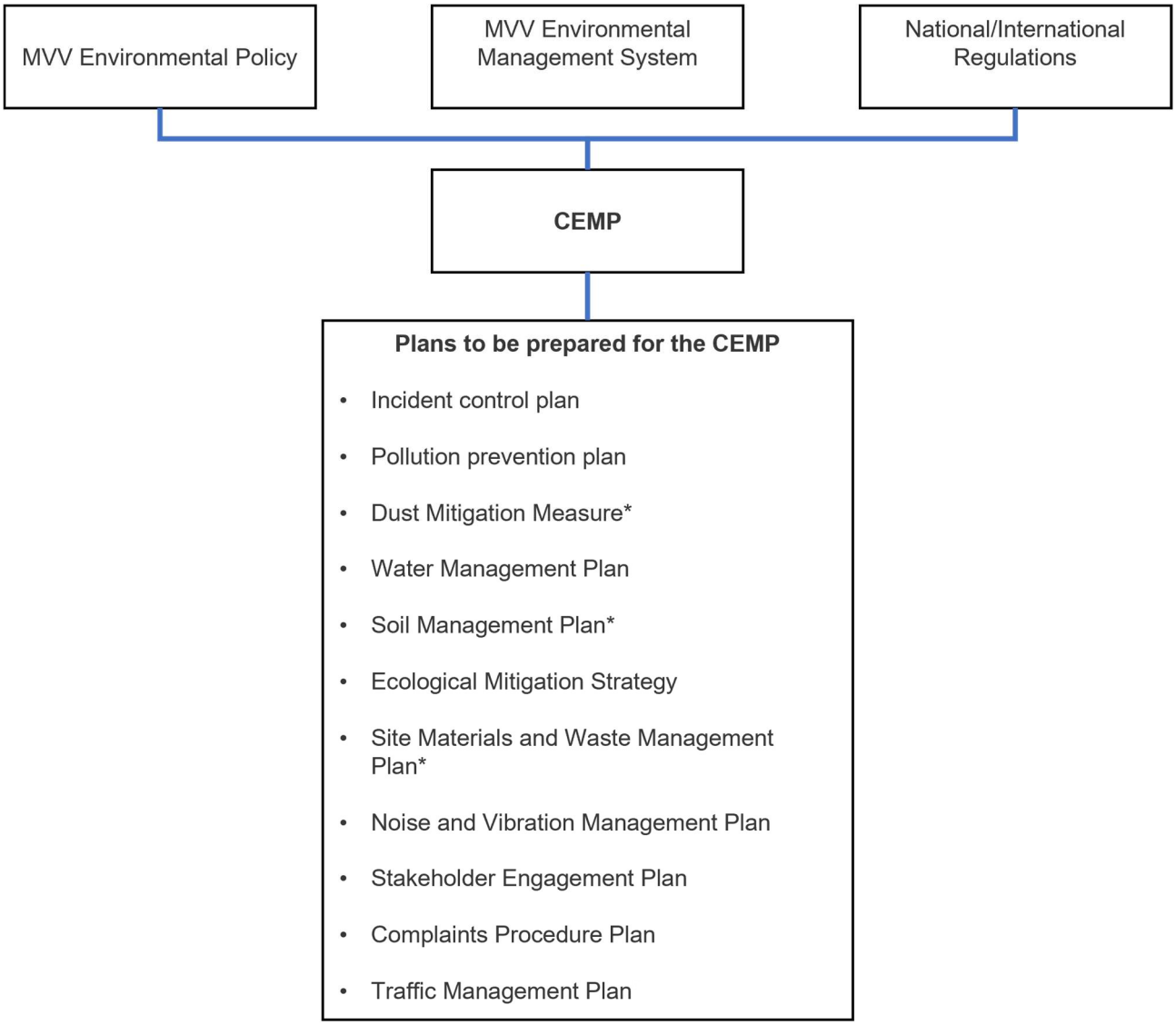
1.5.1 This document is the Outline Construction Environmental Management Plan (Outline CEMP) relating to the Proposed Development. The Outline CEMP sets out the responsibilities and environmental standards that the Applicant will comply with and will contractually require its EPC Contractor(s) to comply with during the construction of the Proposed Development.

1.5.2 Prior to the commencement of construction, a CEMP will be prepared by the EPC Contractor(s) and submitted by the Applicant to the Local Planning Authority (LPA) for approval. Once approved, the CEMP will be the management document that referenced by construction personnel on a day-to-day basis and provide a documented procedure for controlling and mitigating environmental impacts to local residents and businesses during the construction phase of the Proposed Development.

2. Structure of the Outline CEMP

2.1.1 To prepare the Outline CEMP, the Applicant has accounted for mitigation requirements identified in the ES, wider MVV policy and management systems and where relevant, National and International regulations. The structure of the detailed CEMP is summarised in **Figure 1.1.**

Figure 1.1: Outline CEMP Relationship between Higher and Lower Level Policies and Plans



3. Environmental Responsibilities

3.1 Roles and Responsibilities

3.1.1 This Outline CEMP identifies the site management responsibilities regarding the management and reporting of the environmental impact of the construction phase. The overall environmental objectives that will apply to the construction of the Proposed Development are:

- all practicable steps shall be taken to avoid or minimise the environmental effects of construction works;
- all activities shall be conducted in accordance with the CEMP, relevant legislation, Codes of Practice, Guidelines, and any local environmental procedures;
- environmental licenses, permits and consents and other statutory requirements are to be obtained prior to works commencing, and fully complied with;
- all construction personnel (including subcontractors) shall be aware of the environmental issues relevant to the construction of the Proposed Development through the provision of site-specific information on the environmental impacts of construction and the mitigation measures to be applied during inductions, briefings and toolbox talks; and
- regular review of the environmental requirements to ensure that environmental controls remain adequate throughout the duration of the construction phase of the Proposed Development.

3.2 Overall Responsibility

3.2.1 The overall responsibility for ensuring compliance with the CEMP lies with the Applicant.

3.2.2 The Applicant will establish a site management team to oversee the construction process and manage the EPC Contractor(s). On the matter of environmental management, key responsibilities will be:

- to lead by example and champion all areas of environmental management; and
- ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements.

3.3 EPC Contractor

3.3.1 The CEMP shall be implemented and managed on the construction site by the EPC Contractor(s). To ensure that the CEMP remains relevant, it will be the contractual responsibility of the EPC Contractor(s) to take ownership of the CEMP, including regular reviews.

3.3.2 Indicative key responsibilities for the EPC Contractor(s) include:

- ensure that the CEMP and associated documents and control methods are effectively implemented on site on a day-to-day basis;
- fully investigate and act on any environmental incidents and report findings to the senior site manager;
- conduct and document weekly environmental inspections;
- ensure that environmentally orientated briefings and toolbox talks are being delivered to the site workforce;
- implement and maintain environmental controls on site;
- ensure action is taken on any incidents that occur on site; and
- report any activity that has potential to have an environmental effect immediately to the Applicant.

EPC Contractor's Site Management

3.3.3 Site management responsibilities include:

Senior site manager

3.3.4 The senior site manager's responsibilities include:

- ensure that appropriate resources are in place to effectively implement the CEMP and deliver all legal requirements;
- review the CEMP throughout the construction process to ensure it remains relevant and effective in identifying and managing environmental risks;
- report and agree in writing any amendments to the CEMP with the Applicant;
- carry out (or nominate others to carry out) audits;
- monitor environmental performance during construction of the Proposed Development against CEMP objectives and targets;
- ensure the accurate reporting of resource usage e.g., energy and water;
- ensure that all documentation referencing environmental procedures and policy are relevant and up-to-date;
- manage all necessary documentation to demonstrate compliance with relevant legislation for the required period;
- identify necessary levels of environmental competence in staff and ensure necessary training is delivered;
- manage investigation and resolution of complaints; and
- ensure correct procedures are followed in case of an environmental incident.

Construction supervisor(s)

3.3.5 The construction supervisor's responsibilities include:

- ensure that the CEMP and associated documents and control methods are effectively implemented on site on a day-to-day basis;
- fully investigate and act on any environmental incidents and report findings to the senior site manager;
- conduct and document weekly environmental inspections.
- ensure that environmentally orientated briefings and toolbox talks are being delivered to the site workforce;
- implement and maintain environmental controls on site;
- ensure action is taken on any environmental incidents that occur on site; and
- report any activity that has potential to have an environmental effect immediately to the senior site manager.

Subcontractors

3.3.6 The subcontractor's responsibilities include:

- compliance with direction given in the site induction;
- proactively approach environmental issues whilst on site;
- ensure site personnel are fully aware of the environmental procedures in place;
- ensure all construction activities are carried out in line with the procedures detailed in the CEMP; and
- report any environmental incident to the senior site manager.

3.4 Contact Details

3.4.1 EPC Contractor(s) details will be confirmed in the detailed CEMP.

3.5 Environmental Management, Risk Management and Auditing

Overall Site Management Actions

3.5.1 All environmental documentation shall be kept on site and be available for inspection by internal and external auditors and regulators. Site personnel shall be made aware promptly if any significant changes in work procedures are implemented.

3.5.2 Relevant documentation shall include the following:

- CEMP;
- site weekly checklist;
- impacts and aspects matrix;

- environmental risk assessment;
- pollution prevention plan including emergency response; and
- training and responsibilities matrix.
- consents schedule

3.5.3 Weekly environmental inspections shall take place on site . The findings of these inspections and any associated actions shall be appropriately documented on the weekly checklist.

3.5.4 The Applicant and/or EPC Contractor will liaise as necessary with the relevant authorities and regulatory bodies with regard to all construction related consents, and planning conditions.

3.5.5 Where specific limitations are set through any licence, consent or condition, this is to be clearly identified and regularly reviewed to ensure compliance.

Pollution Prevention Planning and Emergency Response

3.5.6 The EPC contractor(s) will prepare and implement appropriate measures to control the risk of pollution associated with construction activities, storage and handling of materials and extreme weather events and document these in an incident control plan as part of the detailed CEMP.

3.5.7 The EPC Contractor(s) will be required to investigate and provide a report to the relevant authorities and regulatory bodies in the event a pollution incident occurs, including the following matters:

- A description of the pollution incident, including its location, the type and quantity of contaminant and the likely receptor(s).
- A description of the contributing factors.
- Adverse effects and the measures implemented to mitigate adverse effects.
- Recommendations to reduce the risk of the incident re-occurring.

3.5.8 When preparing response measures, the EPC Contractor(s) will consult with relevant regulatory authorities and other parties which may include the Fire Authority, Environment Agency (EA), Natural England (NE), utilities companies and the relevant local authorities.

3.5.9 The EPC Contractor(s) will develop, prior to the commencement of construction, an emergency procedure in consultation with the emergency services for potential risks during construction and will be required to follow the procedure in any site emergency.

3.5.10 This site emergency response procedure will include contact details to be clearly displayed on site and information explained to all site personnel. The emergency response plan shall contain a clear detailed plan of the site which indicates the location of sensitive receptors such as watercourses and drainage points.

3.5.11 Emergency phone numbers and the method of notifying the relevant local authorities and all other relevant regulatory authorities including emergency services will be included, along with contact numbers for the EPC Contractor's key personnel.

3.5.12 In the event of an environmental incident, procedures must be followed to ensure risks of further spillages/migration of pollutants are minimised. Procedures will contain a clear detailed plan of the site which indicates the location of sensitive receptors such as watercourses and ditches.

3.5.13 An appropriate number of spill kits will be located within these areas and clearly marked on the plan. Drip trays will be utilised under machinery where there may be a risk of leaks of oil and diesel. A trained spill response team will be present on site at all times during construction activities.

Considerate Constructors Scheme

3.5.14 The Applicant intends to register the construction site with the Considerate Constructors Scheme. The Considerate Constructors Scheme is a non-profit making, independent organisation founded by the construction industry to improve its image. The Considerate Constructors Scheme is neither grant maintained, nor funded by the government, and is solely financed by its registrations. The Considerate Constructors Scheme Code of Considerate Practice commits those sites and companies registered with the Scheme to be considerate and good neighbours, as well as respectful, environmentally conscious, responsible and accountable. Registered sites must also consider their appearance and safety.

3.5.15 This commitment is maintained by the Considerate Constructors Scheme monitoring registered sites and by the display of posters around the construction site, setting out the Code to which the sites or companies are committed. If passers-by wish to comment, the name and telephone number of the site management or company contact are clearly displayed, alongside the freephone telephone number of the Considerate Constructors Scheme's administration office.

3.5.16 Considerate Constructors Scheme Monitors who are drawn from the senior ranks of all disciplines within the construction industry, with a fairly even division between architects, engineers, contractors and surveyors, visit the site on a regular basis. The Monitor acts as an 'informed member of the public' and is looking at how the site represents the company and the industry. During the visit, the Monitor will assess the perimeter of the site, the access to the site offices and the facilities provided for the operatives. The Monitor will also review whether the site's procedures are in accordance with the Scheme's Code of Considerate Practice.

3.5.17 The Monitor will write a report which will include the score achieved against each of the eight categories of the Scheme's Code of Considerate Practice. The purpose of this score is to indicate how well the site is performing against the Code.

3.5.18 The construction site will comply with the Considerate Constructors Scheme Code of Considerate Practice and target to maintain a high-level score on each site monitor's visit. The construction site shall clearly display the associated posters and banners allowing local residents to identify all contact numbers. The Applicant and the EPC Contractor(s) will ensure all works carried out are undertaken in a manner

which not only ensures best practice, but also minimal cause for complaint by the public and disruption to third parties.

Stakeholder Engagement

3.5.19 The Applicant in cooperation with the EPC Contractor will develop a Stakeholder engagement plan to set out what engagement with the local community shall be undertaken prior to work commencing on site.

3.5.20 In conjunction with appropriate mitigation, control of working hours and employee training, handling public relations in an appropriate way will help to reduce the potential for complaints. 'Building Research Establishment's (BRE): The Pollution Control Guide: Part 1 – Pre-Project planning and effective management' makes recommendations regarding the handling of public relations. These recommendations will be included in the Stakeholder engagement plan.

3.5.21 A Stakeholder engagement plan will form part of the detailed CEMP.

Complaints Procedure

3.5.22 Notice boards on the perimeter fencing will display telephone and email contacts for enquiries and receipt of complaints, and the name of the persons who should be contacted. All complaints arising from the construction activities will be investigated to:

- identify the cause of the complaint;
- identify and implement appropriate mitigation measures in a timely manner; and
- record the complaint, and any measures taken, and make the complaints log available to the local authority when requested.

3.5.23 A complaints procedure plan will form part of the detailed CEMP.

Training and Awareness

3.5.24 All construction personnel will receive induction training. Induction checklists will be used, and inductees will sign the induction checklist after having received the relevant induction material. This includes reading and understanding relevant environmental construction procedures. Induction training will include:

- introduction to the relevant construction site;
- relevant construction site tour (if deemed appropriate, relative to the spatial and technical extent of works that the personnel will undertake);
- key roles and responsibilities; and
- environmental objectives, targets, applicable improvement plans and key performance indicators.

3.5.25 All personnel will be required to undergo a health, safety and environment (HSE) based briefing as part of the site induction.

3.5.26 The EPC Contractor(s) will arrange HSE induction training at the commencement of construction for all site supervisory staff.

3.5.27 In addition, the EPC Contractor(s) shall develop and deliver specific environmental toolbox talks as appropriate throughout the construction phase. The toolbox talks will act as refresher sessions of key environmental topics covered in the induction training. Potential topics for toolbox talks may include:

- best practice pollution prevention and control.
- identification and management of invasive species; and
- identification and management of protected species.

Environmental Inspection and Audits

3.5.28 The EPC Contractor(s) will be required to undertake a programme of weekly environmental inspections and monthly environmental audits to record performance and identify any corrective actions required. It is the responsibility of the senior site manager to ensure all documentation and evidence required for audit purposes is kept up to date and freely available for inspection at all times. Additional legal compliance audits will also be undertaken as required. Any system failures will be documented, and appropriate corrective actions implemented.

3.5.29 Appropriate environmental inspections and monitoring of the EPC Contractor's environmental performance in the form of regular audits will be undertaken by the Applicant. Where problems are identified, the corrective action will be identified by the auditor and undertaken by the EPC Contractor(s).

Environmental Incident and Near Miss Reporting

3.5.30 A system for reporting environmental incidents or potential hazards will be developed. All reported incidents or hazards will be logged in a database to allow review, auditing and implementation of lessons learned.

4. General Requirements

4.1 Layout and Management of the Construction Site and TCC

4.1.1 The EPC Contractor will implement the following measures, which will reduce the occurrence of potential environmental incidents or nuisances:

- preparation of a construction site environmental risk drawing showing key areas such as material storage, spill kits, material and waste storage and drains. This will be placed on site notice boards;
- control of lighting/illumination to reduce visual intrusion or any adverse effects on sensitive receptors;
- security measures, including, closed circuit television (CCTV);
- adequate welfare facilities for staff, and designated smoking areas and containers for waste at the TCC;
- removal or stopping and sealing of drains and sewers taken out of use.
- preventing discharge of site runoff to ditches, watercourses, drains, sewers or soakaways;
- prohibition of open fires as well as appropriate measures in place to reduce the likelihood of fires;
- wheel washing facilities for all vehicles leaving the construction areas onto the highway; and
- storage areas, machinery, equipment and temporary buildings will be carefully positioned where possible to reduce environmental effects.

4.2 Construction Working Hours

4.2.1 Proposed core working hours would be 07:00 to 19:00 Monday to Friday, 08:00 to 16:00 on Saturdays, and no work on Sundays or Public Holidays, other than the limited works which may be required outside of the core working. The limited works to be permitted are:

- continuous and over running concrete pours;
- X-ray weld testing;
- mechanical and electrical fit out;
- abnormal load deliveries; and
- abnormal lifts.

4.2.2 During the one hour before and one hour after the core working hours, some mobilisation activities would occur and may include;

- arrival and departure of the workforce at the TCC and site and movement to and from areas across the Proposed Development;
- site inspections and safety checks; site meetings (briefings and quiet inspections/walkovers);
- site clean-up (site housekeeping that does not require the use of plant); and
- low-key maintenance including site maintenance, safety checking of plant and machinery (provided this does not require or cause hammering or banging).

4.2.3 Mobilisation activities would not include HGV movements into and out of the TCC.

4.2.4 The process to be followed when carrying out works outside of the core working hours, other than those set out above, would be subject to prior agreement with the LPA.

4.3 Construction Site Hoarding and Fencing

4.3.1 Fencing and hoarding shall be kept well maintained throughout construction.

4.3.2 The following measures will be applied:

- Maintenance of adequate fencing and hoardings to an acceptable condition to prevent unauthorised access to the construction site, to provide noise attenuation, screening and site security where required;
- Consideration of artwork or other decoration to keep them free of graffiti or posters; and
- Provision of site information boards with 'out of hours' contact details, telephone helpline number (for comments/complaints) and information on the works.

4.4 Emergency Preparedness

4.4.1 Prior to the commencement of construction, the EPC Contractor will develop an emergency procedure in consultation with the emergency services for potential incidents during construction and will follow the procedure in any site emergency.

4.4.2 The procedure will contain emergency contact phone numbers and the method of notifying local authorities and all other relevant authorities including the emergency services.

4.4.3 The EPC Contractor will ensure that the requirements of the relevant fire and rescue authority will be followed for the provision of construction site emergency access points. Emergency access points will be identified in the emergency procedures and reviewed and updated as required.

4.5 Extreme Weather Events

4.5.1 The EPC Contractor will consider the environmental impacts of extreme weather events and related conditions during construction and take measures deemed necessary and appropriate to manage the effects of extreme weather events.

4.5.2 The contractor will register with the Environment Agency Floodline to receive advanced flood warnings.

4.6 Construction Site Security

4.6.1 The necessary infrastructure and personnel to provide a secure and safe construction site will be provided. This includes:

- site security fencing;
- appropriately positioned CCTV system;
- full time (24 hour, 7 days a week) monitoring by security personnel;
- access control at all entrances to and exits from the site;
- adequate temporary lighting; and
- acoustic and visual fire and emergency alarm system.

4.6.2 Before the commencement of the construction, the EPC Contractor will, in close cooperation with the local police authority, develop adequate security plans for the construction site.

4.6.3 The following will be carried out at the EfW CHP Facility Site and the TCC:

- daily visual inspections of the fence lines;
- daily inspections of the CCTV systems;
- regular testing of the audible and visual emergency warning system; and
- prompt repair of any faults or damage to the security systems.

5. Topic-Specific Management Measures

5.1 Environmental Risk Assessment

5.1.1 An Environmental Impact Assessment (EIA) has been prepared which identifies and assesses the aspects of construction that could have an environmental impact. The proposed mitigation measures described in the relevant sections of the EIA will be applied and are described in the applicable sections of this Outline CEMP.

5.1.2 The information obtained through the EIA will be used to determine the mitigation methodology to be utilised during construction. Where significant risks are identified, specific mitigation measures will be put in place and details of these are found within this Outline CEMP. Method statements will incorporate the mitigation for the assumed risk. Any changes to work packages will be reassessed prior to the commencement of work.

5.2 Guidance for Pollution Prevention

5.2.1 Guidance for Pollution Prevention (GPPs) documents are replacing the old series of guidance document (PPGs). The new series provide environmental good practice guidance for the whole UK but form regulatory guidance for Northern Ireland, Scotland and Wales only. There are currently 29 guidance documents available with the following considered to be of greatest potential relevance to the construction of the Proposed Development:

- GPP 1: Understanding your environmental responsibilities - good environmental practices;
- GPP 2: Above ground oil storage tanks;
- GPP 3: Use and design of oil separators in surface water drainage systems;
- GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer;
- GPP 5: Works and maintenance in or near water;
- PPG 6: Working at construction and demolition sites;
- GPP 8: Safe storage and disposal of used oils;
- PPG 18: Managing fire water and major spillages; and
- GPP 21: Pollution incident response planning.

5.2.2 Guidance specific to England is issued by Defra on its website entitled, ‘Pollution prevention for businesses’. Activities during the construction process shall be undertaken in line with the guidance, relevant topics are:

- polluting substances;

- activities that produce contaminated water;
- correct use of drains;
- storing materials, products and waste;
- unloading and moving potential pollutants; and
- construction, inspection and maintenance.

5.3 Dust

5.3.1 Mechanical disturbance of granular material exposed to air creates atmospheric dust, this type of dust generation is termed as 'fugitive' as it is not discharged into the atmosphere in a confined stream. The potential sources of these fugitive dust emissions are:

- site clearance;
- on site earth moving operations, site levelling, cut and fill etc.;
- vehicle movements over haul roads;
- vehicle movements on site during dry periods;
- wind blowing across the site during dry periods;
- stockpiling of excavated materials;
- cutting and grinding;
- accidental spillage and loss of load from vehicles carrying loose material; and
- deep excavations.

5.3.2 The generation of this fugitive dust requires consideration of additional factors such as:

- prevailing wind (speed, direction);
- prevailing climate, including rainfall; and
- location of sensitive receptors (including residential and commercial properties, habitats and watercourses).

5.3.3 Prevailing winds are specifically important when considering fugitive dust. The speed of winds can determine the dispersion of dust; high winds can increase the initial generation of dust, in addition to carrying the dust over greater distances.

5.3.4 Appropriate preventative measures to control dust emissions can significantly reduce the potential for dust generation.

5.3.5 Based on the IAQM Guidance on the assessment of dust from demolition and construction (Feb 2014), **Annex A: Dust Management Measures** outlines the measures to be implemented.

5.4 Noise & Vibration

5.4.1 Noise and vibration has the potential to cause disturbance. In general, noise levels from construction activities will be monitored to ensure that a total ambient sound level of 75 dB $L_{Aeq,T}$ is not exceeded at any identified noise sensitive receptor. Where measured construction sound levels exceed the construction noise level criteria, action will be taken to investigate the cause of the exceedance and identify appropriate measures to reduce noise emissions from the specific activities giving rise to the exceedances.

5.4.2 Measures to control and reduce construction noise emissions may include:

- selection of quieter plant;
- reducing intensity of works;
- scheduling works to avoid multiple activities near to noise sensitive locations;
- scheduling works to avoid noise sensitive times of day;
- provision of local screening;
- provision of boundary screening; and
- provision of plant movement alarms that vary the loudness level according to ambient noise levels.

5.4.3 Emissions will be monitored against the predicted noise levels.

5.4.4 The EPC Contractor will, in so far as is reasonably practicable use 'Best Practicable Means' (BPM) to control and limit noise levels so that sensitive receptors are protected from excessive noise throughout the construction programme.

5.4.5 Requirements for specific measures to avoid significant effects will be determined based on the detailed construction programme, once available, with reference to the results of the assessment of construction noise and vibration contained in **ES Chapter 13: Noise and Vibration**.

5.4.6 Noise and vibration mitigation measures which may be implemented where appropriate, are presented below and are consistent with guidance in BS 5228 'Code of practice for noise and vibration control on construction and open sites', Part 1: Noise (+A1:2014), and Part 2: Vibration (+A1:2014).

- Construction will generally be confined to core working hours. Where planned activities external to buildings must be undertaken outside core working hours or are predicted to exceed BS 5228-1 threshold values at nearby dwellings, or other agreed construction noise limits at dwellings or non-domestic premises, these specific works will be subject to agreement with the relevant local authorities.
- Items of plant are to be selected so that they conform with national, or international standards. Plant items are to be operated using BPM and manufacturer's recommendations are to be followed to reduce unnecessary noise emissions.

- All plant items are required to comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument (SI) 2001/1701 (as amended). The EPC Contractor will maintain a register of plant and equipment and statutory certification.
- Where potentially significant vibration impacts are predicted, building condition surveys should be undertaken prior to and following the works.
- If complaints due to construction vibration are received, the requirement for vibration monitoring should be considered.
- Acoustic screening is to be implemented where practicable and necessary. Screening measures may include site hoardings, acoustic barriers, acoustically rated enclosures, temporary bunds and acoustically rated plant housing. To provide adequate attenuation from activities, barriers will need to be located as close to the activity as is practicably possible. BS 5228 recommends a minimum mass per unit area of 7 kg/m^2.
- Plant items that operate using a combustion engine will require effective exhaust silencers. Silencers will be subject to regular inspection and maintenance so that good efficient working order is maintained.
- Repairs and scheduled maintenance of plant items shall be undertaken within core working hours. Where repair and maintenance is required outside of the core working hours, activities will be kept to a practicable minimum and undertaken within the boundaries of the site with suitable screening.
- Compressors are required to be “low noise” models that have an acoustically lined and sealed cover. Covers are to be kept closed whilst in operation.
- Pneumatic percussive tools will be fitted either mufflers or silencers dependent upon manufacture guidance and recommendation.
- When equipment or plant items are being operated intermittently, in the intervening periods they will be shut down, or throttled down. Lorry engines are to be switched off when stationary.
- Plant and equipment such as flatbed lorries, skips and chutes will be lined with noise attenuating materials. Materials will be handled with care and be placed, not dropped. Materials will be delivered during normal working hours.
- Equipment or plant items that run continuously are required to be housed within a suitable acoustic enclosure.
- To minimise the impact when multiple noisy activities are scheduled, activities should be distributed throughout the working period and across the site area.
- Equipment and plant that is likely to generate noise and/or vibration will be located as far as practicably possible away from sensitive receptors or behind close boarded noise barriers.
- Where it is deemed suitable, fixed plant items will be powered electrically in preference to diesel or petrol alternatives.

- Traffic associated with the development will not idle or queue on the public highway and designated access routes will be used. Traffic movements will comply with the Construction Traffic Management Plan (CTMP).
- Mobile plant will be required to have a reversing alarm fitted which incorporates one or more of the following features:
  - highly directional sounders;
  - broadband reversing alarm;
  - flashing warning lights; and
  - reversing alarms will be set to the minimum allowable output level which complies with health and safety requirements.
- All construction personnel will be trained in the application of Best Practicable Means to reduce noise and vibration as part of the induction process. Site personnel will also receive role appropriate training, with specific information covering noise and vibration management.

5.4.7 If noise monitoring is identified as a requirement following a complaint or is otherwise required during the works for example, where receptors may be exposed to construction noise for extended periods, or could be exposed to construction noise levels which may exceed the BS 5228-1 thresholds, the following procedure will apply:

- measurements will be undertaken in accordance with British Standard BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures'[1];
- noise surveys will be undertaken at the complainant's property, a receptor closest to the works of interest or a proxy/boundary location, depending on which is most practicable at the time;
- noise surveys are to be undertaken during representative working hours and for a period of time representative of the activity's duration. Surveys should include, where possible, worst-case activities, or the activities responsible for the complaint;
- results from the noise monitoring will be used to assess compliance with any agreed noise limits or to identify potential impacts;
- noise monitoring will be undertaken by competent and appropriately qualified personnel; and
- noise survey results will be recorded by the EPC Contractor and made available to the relevant local authority environmental health department upon request.

[1] BSI (2014). British Standards Institution. British Standard BS 7445-1:2003 'Description and measurement of environmental noise. Guide to quantities and procedures'

5.5 Lighting

5.5.1 The following mitigation measures and best practice will be implemented in the installation and use of lighting for the construction phase:

- adequate lighting of working areas is an essential safety consideration and lighting units will be placed in such a way as to pose minimal risk of light disturbance beyond the construction and TCC site boundaries;
- lighting will be suitable for the works being undertaken and unnecessary lighting will be avoided;
- works area lighting will be switched off when not needed. This will include periods outside of normal site working hours;
- any security lighting will be kept to a minimum and powered by mains supply where practicable; and
- checks will be made each evening to ensure no lights are left on in error.

5.5.2 Lighting arrangements will also take into consideration the potential disturbance to wildlife and ecology. The lighting design will minimise the impacts of light spillage on adjacent retained habitats through the attachment of directional hoods to lights. Non-essential lighting will be fitted with automatic cut-off switches.

5.6 Waste Management

5.6.1 All waste materials arising from construction of the Proposed Development will be managed in accordance with a Site Waste Management Plan (SWMP) to be developed by the EPC Contractor prior to the commencement of construction.

5.6.2 The SWMP will include matters relating to:

- waste policy;
- site waste management procedures;
- the identification and storage of waste;
- segregation of waste;
- disposal of non-hazardous and hazardous waste;
- waste reporting and records; and
- roles and responsibilities.

5.6.3 **Annex B** provides the draft SWMP.

5.7 Management of Excavated Material

5.7.1 Construction strategies will be implemented that will seek to maximise the reuse of excavated clean materials where practicable and feasible. Prior to construction, a materials management plan (MMP) will be prepared that outlines where excavated

non-waste materials will be re-used in line with the CL:AIRE Definition of Waste Code of Practice (DoWCoP). The MMP will include a declaration by a Qualified Person that the MMP has been completed in accordance with the DoWCoP and that best practice is being followed.

5.7.2 Any excavated materials suspected or confirmed to be contaminated will be temporarily stored on impermeable sheeting, covered over and provided with appropriate leachate/runoff drainage to prevent migration of contaminants from the stockpile. Materials will be segregated where possible to prevent cross-contamination occurring. Such materials will only be reused if they are confirmed as suitable for use in line with the requirements of the MMP.

5.7.3 **Annex C** provides the draft Soil Management Plan.

5.8 Traffic and Transport

5.8.1 A Construction Traffic Management Plan (CTMP) will be produced and included within the detailed CEMP.

5.8.2 The CTMP will be agreed with the LPA in consultation with the relevant highways authorities where necessary prior to the commencement of construction.

5.8.3 The CTMP will include a construction staff travel plan which will provide for the monitoring of construction staff travel to and from the construction site and will have the following objectives;

- Objective 1: To enable sustainable travel choices to/from the TCC during the construction phase to encourage behavioural change opportunities, increase sustainable travel awareness and increase use of sustainable modes of travel.
- Objective 2: To reduce single occupancy car trips during the construction phase.

5.8.4 Based in the principles in **Figure 5.1**, the detailed CTMP will include route restrictions for HGV's and staff.

Figure 5.1: Construction route restrictions

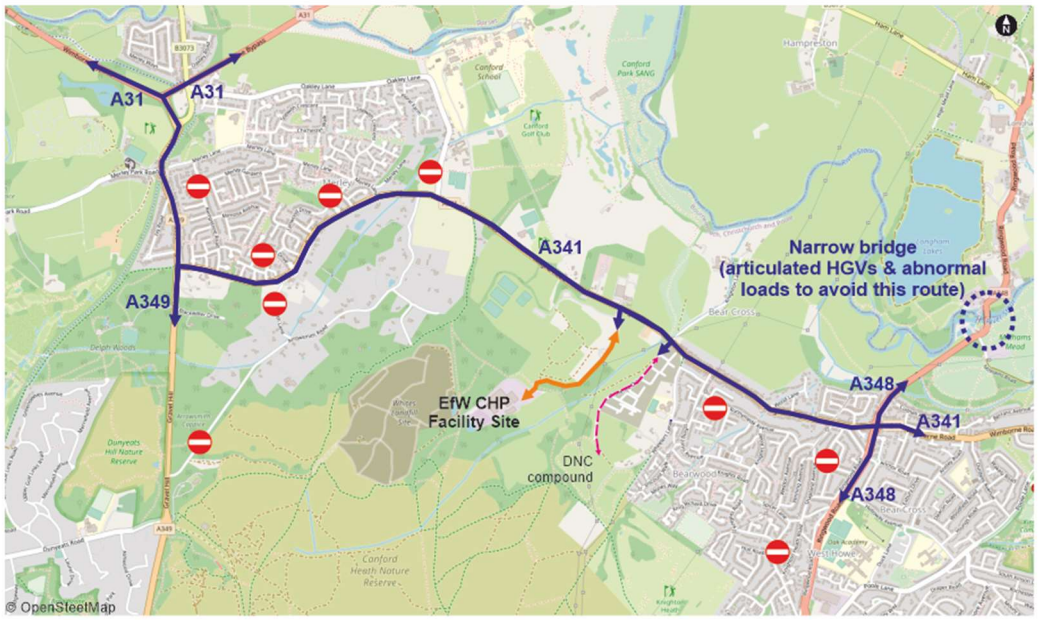
CANFORD EFW CHP FACILITY:
CONSTRUCTION TRAFFIC MANAGEMENT PLAN:

Aim of the CTMP:
Heavy Goods Vehicle (HGV) traffic shall use the primary highway network to access the Proposed Development site for the purpose of construction, thereby avoid unnecessary journeys through local towns and villages.

HGV access:
HGV traffic shall access the Proposed Development site from the A341 (Magna Road (and its connecting routes)). The Applicant will require the EPC contractor and sub contractors to adhere to the permitted HGV routes to access the Proposed Development site.

HGV routing exemptions:
1) Local collections/delierives to and from the Proposed Development site.
2) In the event of matters beyond the control of the Applicant, such as, temporary road closures, HGV access route restrictions would be temporary suspended.

Staff, visitor and Light Goods Vehicle (LGVs) access:
To accommodate local employment/access; no route restrictions



Adopted highway permitted HGV access routes

Arena Way: access to TCC1, TCC2, CHP Connection and the EfW CHP Facility Site

Provence Drive: access to the DNC compound

Construction HGV route restrictions (unless local collections)

5.9 Ecology

The tree survey (**ES Appendix 8.4**) identifies existing individual and groups of trees with root protection zones calculated with reference to BS 5837. Partial clearance of existing scrub within the CHP and DNC corridor, in preparation for the excavation works to install pipes/cables, may reveal additional trees that require survey and protection. All retained trees within or adjacent to the Proposed Development shall be protected with fencing in accordance with the BS 5837 (2012) and if required, other detailed measures to be set out in an Arboricultural Method Statement in accordance with BS 5837 (2012) and subject to a planning condition. In the unlikely event that a veteran tree is identified, this would be avoided by micro-siting the design where practicable, and protected by the measures outlined above. If impacts to a veteran tree are unavoidable, mitigation would be set out in the Arboricultural Method Statement.

5.9.1 All other retained structural vegetation and ditches within or adjacent to the Proposed Development that could be adversely impacted by the construction activities will be protected by temporary fencing.

5.9.2 Pre-construction update surveys would be undertaken for protected species where relevant and necessary, i.e., to maintain up-to-date baseline data for known ecological receptors to inform mitigation requirements and European Protected Species licensing, or to identify potential additional ecological receptors which may become established within the Study Area (i.e., mobile species) prior to construction commencing.

5.9.3 Ecological good practice and receptor-specific mitigation will be implemented that will negate or minimise the risk of any potential impacts on ecological receptors that have the potential to be within or close to working areas at the time of works and avoid contravention of relevant legislation.

5.9.4 Additional control measures provided within this Outline CEMP, relating to factors such as pollution prevention and control of dust, noise, vibration and lighting, would be implemented during the construction phase to further avoid damage to habitats/species.

6. Conclusion

6.1.1 The Outline CEMP establishes the mechanisms, management systems, plans and procedures appropriate to the control of environmental effects during the construction of the Proposed Development. As an outline document it will be updated with additional detail once the appointed EPC Contractor(s) is/are engaged and the exact methods and means by which the Proposed Development will be constructed is confirmed. A detailed CEMP will be produced in line with this outline CEMP following grant of the planning consent and would be agreed with the LPA before starting the construction works.

Annex A
Dust Management Measures

Construction dust mitigation measures

6.1.2 Based on the IAQM Guidance on the assessment of dust from demolition and construction (Jan 2014), **Table A1-1** sets out the proposed construction dust effects mitigation measures.

Table A1-1: Construction dust mitigation measures

ID	Measures
COMMUNICATION	
DM01	Develop and implement a Stakeholder engagement plan that includes community engagement before work commences on site.
DM02	Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary.
DM03	Display the head or regional office contact information.
SITE MANAGEMENT	
DM04	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.
DM05	Make the complaints log available to the local authority when requested.
DM06	Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the logbook.
DM07	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.
MONITORING	
DM08	Around the boundary of the active construction areas, undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars, and window sills.

ID	Measures
DM09	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when requested.
DM10	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.
PREPARING AND MAINTAINING THE SITE	
DM11	Plan site layout so that machinery and dust causing activities and stockpiles are located away from receptors, as far as is possible.
DM12	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.
DM13	Where possible enclose specific operations where there is a high potential for dust production and the site is active for an extensive period.
DM14	Avoid site runoff of water or mud.
DM15	Where possible, keep site fencing, barriers and scaffolding clean using wet methods.
DM16	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
DM17	Cover, seal, seed, or fence stockpiles to prevent wind whipping.
OPERATING VEHICLE/MACHINERY AND SUSTAINABLE TRAVEL	
DM18	When safe to do so, ensure all vehicles switch off engines when stationary - no idling vehicles.
DM19	Where possible, avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable. Where not practical to use ultralow sulphur diesel.
DM20	Impose and signpost a maximum-speed-limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate).
OPERATIONS	
DM21	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.

ID	Measures
DM22	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate and deploy this in bowsers on site at regular intervals.
DM23	Use enclosed chutes and conveyors and covered skips.
DM24	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
DM25	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods
WASTE MANAGEMENT	
DM26	Prohibition of bonfires and burning of waste materials.
MEASURES SPECIFIC TO DEMOLITION	
DM27	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.
MEASURES SPECIFIC TO EARTHWORKS	
DM28	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable.
DM29	Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable.
DM30	Where possible, only remove the cover in small areas during work and not all at once.
MEASURES SPECIFIC TO CONSTRUCTION	
DM31	Avoid scabbling (roughening of concrete surfaces) if possible.
DM32	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.

ID	Measures
DM33	Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. Otherwise spray to reduce dust potential.
DM34	For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.
MEASURES SPECIFIC TO TRACKOUT	
DM35	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
DM36	Avoid dry sweeping of large areas.
DM37	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.
DM38	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
DM39	Record all inspections of haul routes and any subsequent action in a site log book.
DM40	Install hard surfaced haul routes, which are regularly damped down and regularly cleaned.
DM41	Implement a wheel washing system.
DM42	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.
DM43	Access gates to be located at least 10m from receptors where possible.

Annex B
Site Waste Management Plan

Management Arrangements

6.1.3 The EPC contractor will appoint a senior member of the site management team to take overall responsibility for the implementation of the SMWMP and management of waste generated on site during the construction phase. The appointed person is responsible for instructing all subcontractor construction managers, overseeing and documenting progress against the SMWMP.

Communication, Training and Distribution of the SMWMP

6.1.4 The training and communication of the SMWMP will be embedded into the site induction process.

6.1.5 The training shall be implemented in order to highlight the importance of the SMWMP and individual responsibility in ensuring effective waste minimisation and management on site.

6.1.6 All parties on the distribution list for this SMWMP will receive the latest version of the SMWMP from the appointed person, with the responsibility for removing superseded copies (hard copy and electronic format) residing with those on the distribution list (in their relevant work area).

6.1.7 A copy of the latest version of the plan will be displayed in the site induction room.

Materials and Waste Policy

6.1.8 The following must be implemented on site by all personnel and contractors:

1. All materials on site are to be handled efficiently:
    - a nominated person needs to ensure ordering is monitored closely, preventing over ordering as this can result in waste production;
    - ensure dedicated storage areas are provided and that materials susceptible to water damage, e.g., cement bags, are stored within weatherproof areas;
    - ensure materials are stacked/stored in a manner that will not result in damage; and
    - ensure stores are locked when not in use to prevent misuse or vandalism.
2. Dedicated waste storage area with suitable hardstanding for containers to be established in a secure location, and preferably set back from public access to prevent fly tipping. Area to be suitably signed, clearly identifying permitted wastes aiding segregation and shown on both the site plan and the traffic management plan.

3. Provision for hazardous wastes to be made as necessary, timescales of which will be dictated by the works phase and likelihood of generation, e.g.:
    - used aerosols throughout the lifetime of the construction phase to be stored in segregated and labelled container;
    - any asbestos containing materials encountered during the groundworks;
    - contaminated arisings encountered during the groundworks; and
    - contaminated ground due to poor refuelling practices/accident on site.
4. All waste transfers from site must be dealt with in strict accordance with the Waste (England and Wales) Regulations 2011 (as per section 34 of the Environmental Protection Act 1990).

Materials storage

6.1.9 The arrangements for materials storage should be discussed and agreed between contractors and the project client and where appropriate included in the Construction phase plan.

- Storage areas - designated storage areas for plant, materials, waste, flammable substances e.g. foam plastics, flammable liquids and gases such as propane and hazardous substances e.g. pesticides and timber treatment chemicals.
- Pedestrian routes – no storage of materials where they obstruct access routes or where they could interfere with emergency escape.
- Flammable materials - to be stored away from other materials and protected from accidental ignition.
- Storage at height - if materials are stored at height e.g. on top of a container, ensure guard rails are in place if people could fall when stacking or collecting materials or equipment.
- Tidiness - all storage areas to be kept tidy, whether in the main compound or on the site itself.
- Deliveries – deliveries are to be planned to keep the amount of materials on site to a minimum.

Waste Identification

6.1.10 The construction contractor will identify and detail all likely waste streams generated including likely volumes. The SMWMP will also assign volume targets to achieve in terms of re-use, recycling and disposal of material both on and off site, in order to identify opportunities for savings in both financial and environmental terms. The assessment will include site-generated wastes, e.g., arisings and construction specific waste, and imported materials.

6.1.11 The construction contractor will ensure the principles of the waste hierarchy, i.e., eliminate, reduce, re-use, recycle, disposal, are applied to this SMWMP to enable best practice on site and to improve the overall sustainability. It is intended that this

SMWMP will evolve and as such, regular monitoring and reviews will be undertaken to ensure continual improvement, legal compliance and that cost effective solutions are in place.

Waste storage

6.1.12 Space for the storage of construction waste arisings will be made available. The space required will be determined from the waste forecast to be generated from construction activities, and according to the specific waste's potential for re-use, recycling or disposal. Residual waste that cannot be utilised on site shall be sent off site for re-use/recycling or disposed of at a suitably permitted facility.

6.1.13 Waste storage containers with appropriate signage will be used to store waste. Segregated waste containers will be provided. When full, containers shall be collected by a registered waste carrier.

6.1.14 The construction contractor in conjunction with their waste management contractors shall determine the size and number of storage containers and collection frequency required for the works. Storage, handling, use, and disposal of any potentially hazardous materials shall be in accordance with the relevant statutory provisions and Health and Safety Executive (HSE) Codes of Practice and Guidance notes.

Segregation of waste

6.1.15 To ensure maximum potential for reducing waste to landfill, and encouraging reuse and recycling, waste will be segregated. Separate skips will be made available for all types of waste. Each skip will be clearly labelled and site personnel will be informed of procedures within the site induction. Regular monitoring will be undertaken to ensure correct procedures are followed at all times. The skips will be emptied at regular intervals to prevent overfilling. Toolbox talks will be undertaken with all site personnel to ensure full understanding of waste procedures.

Re-use and recycling

6.1.16 The following initiatives will be considered and agreed upon, aiming to reduce the amount of waste produced in the first instance, and assisting in the recycling and re-use of waste as an alternative to offsite disposal.

Re-Use on Site:

- Waste soil and subsoils will be re-used wherever possible. There is no exemption required (under Environmental Permitting Regulations (EPR) 2016) as not classed as waste.
- Waste materials crushed or processed to WRAP quality protocol, e.g., concrete will be re-used wherever possible. Under new Environmental Permitting Regulations (EPR) 2016 there is no exemption required as it is not classed as waste.

Recycling Off-Site:

- soils – recycled at licensed/permitted facility;
- aggregates - recycled at licensed/permitted facility;
- wood - recycled at licensed/permitted facility;
- metals - recycled at licensed/permitted facility;
- plastic packaging – where suitable, recycled at licensed/permitted facility; and
- paper and cardboard – recycled at licensed/permitted facility.

Disposal of Non-Hazardous Waste

6.1.17 All non-hazardous waste will be removed from site within strict adherence to all waste legislation requirements, including the Waste duty of care: code of practice (Section 34(9) of the Environmental Protection Act 1990.) Prior to any agreed use of hauliers or waste disposal sites, the appropriate licenses will be thoroughly checked to ensure that particular waste streams can be accepted and carrier licenses are valid. This can only be undertaken by the EPC contractor's authorised staff and copies of all necessary licenses must be retained on site at all times and reviewed for expiry. No waste will leave site without appropriate waste transfer notes. It is essential that all waste transfer notes are inspected for detail and must contain the correct description of the waste as well as the correct waste code, in line with the List of Waste Codes. Only suitably trained personnel may sign waste transfer notes. Regular audits will be carried out following loads from site to the designated licensed tip.

Disposal of Hazardous Waste

6.1.18 No hazardous waste must leave site without the correctly completed consignment note. The consignment notes must contain all necessary information including waste description. Any carriers removing hazardous waste must have appropriate licenses and disposal sites must be verified to be able to accept waste being sent. These checks and signing of consignment notes can only be undertaken by authorised personnel. All hazardous waste must be stored on site in appropriate, covered or locked skips. No mixing of hazardous and non-hazardous waste will take place. Any hazardous waste will be disposed of in accordance with the Hazardous Waste Regulations 2005 and the Waste duty of care: code of practice.

Waste Reporting and Records

6.1.19 All waste transfer and consignment notes will be held on site throughout the duration of construction.

6.1.20 Each waste transfer will be fully documented and updated accordingly. Each month, the team, detailing the exact movements of the previous month's waste, including destination and treatment, will compile a comprehensive waste report. Regular auditing will be undertaken of all waste management systems.

Reviews of Site Waste Procedures

6.1.21 Reviews of site waste procedures will be undertaken at 3-monthly intervals, or less if required. Site personnel will be trained in accordance with the waste management procedures.

Roles and Responsibilities

Senior Project Management

- responsibility to ensure suitable resources are made available during the preconstruction phase within the technical team to ensure the SMWMP can be developed;
- responsibility to ensure the implementation of the SMWMP;
- ensures the environmental manager is aware of his responsibilities and that these are enacted on site;
- responsible for the initiation of the SMWMP at design stage,
- responsible for estimating total volumes of waste expected to be generated during construction;
- responsible for the setting of targets relating to re-use, recycling, and disposal of wastes on and off site; and
- responsible for identifying key SMWMP related issues to contractors at tender stage, including information required to complete the site waste matrix.

Senior Site Management

- overall responsibility for the implementation and ongoing monitoring of the SMWMP;
- responsibility for the production and issue of the site waste matrix to sites; and
- responsibility for the collation of weekly data sheets/ information relating to waste management and the input of data into the nominated monitoring tool.

Site Management

- responsible for on-site operations and the assignment of resources on site to meet the requirements of the plan; and
- responsible for arranging for all waste information/weekly summary sheets to be sent to the senior site management on a weekly basis.

Annex C
Soil Management Plan

Soil Management Plan

Introduction

6.1.22 Soil is effectively a non-renewable resource which provides essential ecosystem services. Key soil functions include providing a growing medium for food, timber and crops, filtering and storing water, and supporting terrestrial biodiversity (and soil is also rich in biodiversity). Poor soil handling during construction and reinstatement can result in damage to the soil health and structure, resulting in effects including waterlogging/flooding, soil erosion, and subsequent degradation of surface water quality, and poor plant growth. The measures set out in the Soil Management Plan shall be implemented by the construction contractor to protect the soil resource during construction and reinstatement.

Soil management measures

6.1.23 The EPC Contractor will develop a plan so that the following measures are implemented in grassed/vegetated areas where the natural topsoil and subsoil is still likely to be in place and uncontaminated, or where previous landscaping works have taken place and natural or imported topsoil is likely to be present:

- Ground investigation/survey will be completed as part of pre-construction work to assist in defining the soil resources present (soil type, extent, and thickness), this will also serve as a pre-condition survey for soil and should be recorded with a written description and photographic record. The results of this survey will feed into soil management planning, in addition to the Site Materials and Waste Management Plan (SMWMP).
- Soil storage areas for different types of topsoil, subsoil and/or mineral substrate will be identified prior to construction activities to avoid the mixing of these resources.
- Stripping, stockpiling and placement of soil should be completed in the driest conditions possible.
- Methodical soil stripping should be carried out using a toothed excavator bucket wherever possible. Excavator size should be proportionate to the size of the area needing soil stripped. The use of tracked vehicles will further reduce soil compaction. An example of good practice for soil stripping from Defra (2009) *Construction code of practice for the sustainable use of soils on construction sites* is shown below as **Figure 2.1**.
- Construction traffic will keep to designated routes to minimise soil compaction.

- If ground conditions require it, a temporary track of either metal, wood or plastic, would be used for vehicles to access the working areas. This track would be removed once construction is complete.
- Daily records of soil operations undertaken, and site and soil conditions, should be maintained during soil handling activities.
- Soil storage periods will be kept to the minimum required, this is to limit impacts on soil health.
- Topsoil and subsoil will be excavated separately and stockpiled separately. Stockpile heights of 3 to 4m can be used for topsoil that can be stripped and stockpiled in a dry state.
- During excavation, if unexpected potentially contaminated materials are encountered, this material should be segregated to prevent cross-contamination with clean soils occurring and appropriate containment measures put in place to limit the potential for leaching of contaminants, contaminated surface run-off, or dust release to occur. The protocol for encountering unexpected contamination should then be followed.
- Ground to be used for storing the topsoil should be cleared of vegetation or waste arising from the Proposed Development (e.g., building rubble and fill materials).
- Topsoil should first be stripped from land to be used for storing subsoil (subsoil can only be stored on subsoil or mineral substrate).
- Soil stockpiles will be located away from surface watercourses.
- Soil stockpiles will be clearly defined and identified (e.g., with clear signage) in accordance with the Site Materials and Waste Management Plan.
- Once the stockpile has been completed, the area should be cordoned-off with secure fencing to prevent any disturbance or contamination by other construction activities.
- If soil is to be stockpiled for more than six-months, the surface of the stockpiles should be seeded with an appropriate grass/clover mix to minimise soil erosion and to help reduce run-off and infestation by nuisance weeds that might spread seed onto adjacent land. Management of weeds that do appear should be undertaken during the summer months, either by spraying to kill them, or by mowing or strimming to prevent their seeds being shed.
- Soil will have a natural angle of repose of up to 40° depending on texture and moisture content but, if stable stockpiles are to be formed, slope angles will normally need to be less than that, for stockpiles to be grass seeded and maintained, a maximum side slope of 25° is appropriate.
- If sustained heavy rainfall (e.g., >10mm in 24 hours), occurs during soil handling operations, work must be suspended and not restarted until the ground has had at least a full dry day or agreed moisture criteria (such as ‘drier than the plastic limit’) can be met.

- To minimise damage to soil during handling, topsoil and subsoil stripping methods should be based upon the examples of good practice set out in Defra (2009) *Construction code of practice for the sustainable use of soils on construction sites* and presented below in **Figure 2.2** and **Figure 2.3**. In order to determine the soil moisture/soil consistency state, and the appropriate method of soil stockpiling, soil samples will need to be assessed by a suitably experienced person.
- Soil should be stored in an area where it can be left undisturbed and soil movements/soil handling should be kept to a minimum.
- During soil reinstatement or placement, damage to soil structure should be minimised by handling soil only when dry or slightly moist and using suitable machinery in an appropriate way. The 'loose tipping' method, using dump trucks and hydraulic excavators to move and spread topsoil, is the most appropriate method for topsoil placement, as shown in the example of good practice from Defra (2009) *Construction code of practice for the sustainable use of soils on construction sites*, shown below in **Figure 2.4**.
- If the receiving basal layer or subsoil has been compacted by vehicles, foot trafficking or the storage of building materials prior to placement of topsoil, the substrate should be decompacted to break up any panning to reduce flood risk and to promote deeper root growth. This can be achieved, even in restricted areas such as planting beds or road verges, using a small (1-5 tonne) to medium sized (13 tonne) tracked excavator, fitted with a single rigid tine.
- In general reinstatement should aim to restore the land to its former condition or to where soil is being translocated, to provide a suitable platform for establishment of the intended landscaping. Following reinstatement, the EPC Contractor will carry out an inspection to confirm that reinstatement has been completed adequately. In some instances aftercare may be needed, specific requirements for reinstatement will need to be agreed with landowners in advance of the construction work.

Figure 2.1: Good practice for topsoil stripping

Method

Remove surface vegetation by blading off, by scarification and raking, or kill off by application of a suitable non-residual herbicide applied not less than two weeks before stripping commences.

The method illustrated below is the preferred method for minimising damage to topsoil. It shows the transport vehicle running on the basal layer under subsoil as subsoil is also to be stripped. If only topsoil is to be stripped, the vehicle would run on the subsoil layer.

Stripping should be undertaken by the excavator standing on the surface of the topsoil, digging the topsoil to its maximum depth and loading into site or off-site transport vehicles.

Alternative stripping methods that can be shown to afford the same degree of soil protection are acceptable.

An archaeological watching brief might have to be accommodated during topsoil stripping.

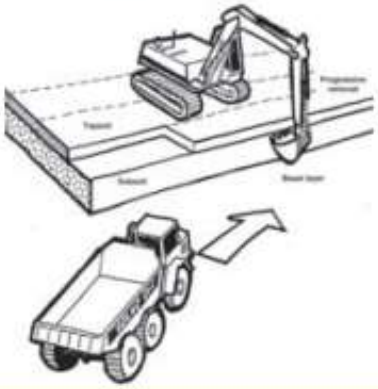


Figure 2.2: Stockpiling method to be applied to soil in a dry and non-plastic state

Soil stockpiling

Soil should be stored in an area of the site where it can be left undisturbed and will not interfere with site operations. Ground to be used for storing the topsoil should be cleared of vegetation and any waste arising from the development (e.g. building rubble and fill materials). Topsoil should first be stripped from any land to be used for storing subsoil.

Method 1 – Dry non-plastic soils

The soil is loose-tipped in heaps from a dump truck (a), starting at the furthest point in the storage area and working back toward the access point. When the entire storage area has been filled with heaps, a tracked machine (excavator or dozer) levels them (b) and firms the surface in order for a second layer of heaps to be tipped. This sequence is repeated (c & d) until the stockpile reaches its planned height. To help shed rainwater and prevent ponding and infiltration a tracked machine compacts and re-grades the sides and top of the stockpile (e) to form a smooth gradient.

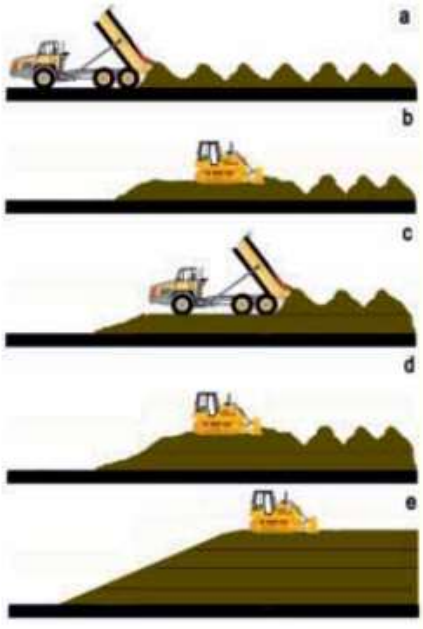


Figure 2.3: Stockpiling method to be applied if the construction programme or prevailing weather conditions result in soil having to be stockpiled when wet and/or plastic in consistency

Method 2 – Wet plastic soils

The soil is tipped in a line of heaps to form a 'windrow', starting at the furthest point in the storage area and working back toward the access point (a). Any additional windrows are spaced sufficiently apart to allow tracked plant to gain access between them so that the soil can be heaped up to a maximum height of 2m (b). To avoid compaction, no machinery, even tracked plant, traverses the windrow.

Once the soil has dried out and is non-plastic in consistency (this usually requires several weeks of dry and windy or warm weather), the windrows are combined to form larger stockpiles, using a tracked excavator (d). The surface of the stockpile is then regraded and compacted (e) by a tracked machine (dozer or excavator) to reduce rainwater infiltration.

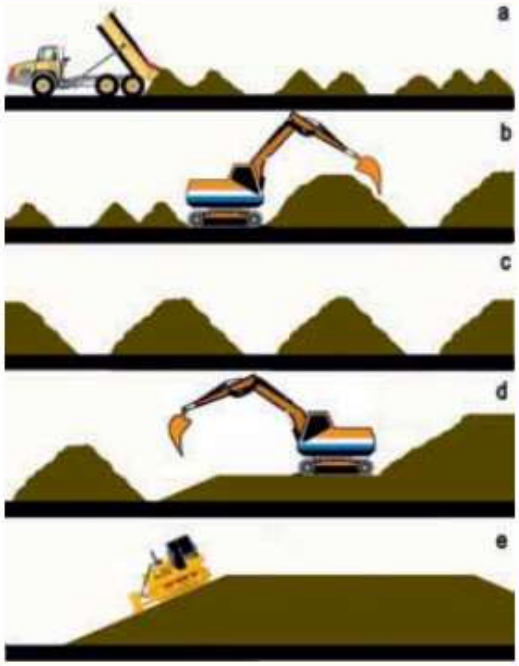


Figure 2.4: Good practice for placement of soil

Loose-tipping method

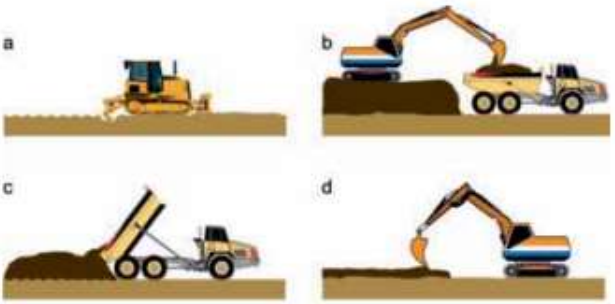
This method entails working to a strip system (the width of the strip determined by the reach of the excavator), and replacing soil sequentially across the soiling area. The receiving ground, whether a basal layer or compacted subsoil is first loosened with a wing-tine ripper.

A hydraulic excavator, fitted with a toothed-bucket to avoid excessive smearing, should be used to load the soil materials from the source area or stockpile into a dump truck which then discharges them onto the receiving surface. An excavator stands next to the newly dropped soil and spreads this to the required thickness. If there is to be more than one soil layer (i.e. if both topsoil and subsoil are being replaced) then the whole length of the strip is restored with subsoil before the process is repeated with topsoil. The topsoil is lifted onto the subsoil without the excavator travelling on the newly placed subsoil. Only when the strip has been completed is the next one started.

If soil is cloddy in structure, the excavator bucket can be used to break up the clods. Large stones can be removed during the operation.

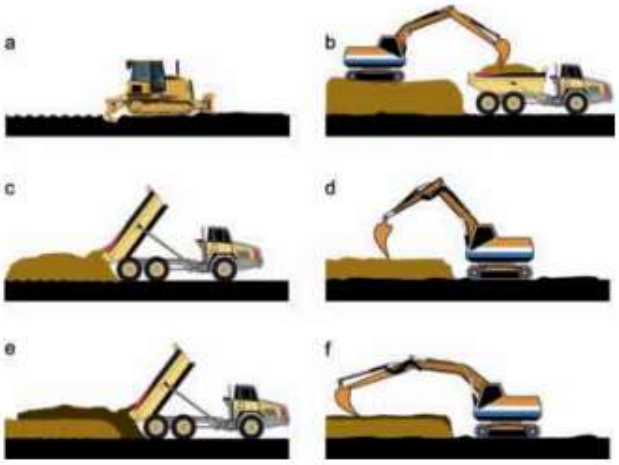
Modified versions of the loose-tipping method, for use when both subsoil and topsoil are to be placed, include spreading the subsoil as described above but then spreading the topsoil layer out using a low ground pressure dozer. Providing that soil conditions are suitably dry and dozer movements are minimised, this can gently consolidate the placed soil without causing over-compaction.

The loose-tipping method (topsoil spreading only)



a) loosening the subsoil of the receiving ground
b) loading of topsoil from stockpile
c) backtipping topsoil onto loosened subsoil
d) levelling topsoil

The loose-tipping method (topsoil and subsoil spreading)



a) loosening the substrate of the receiving ground
b) loading of subsoil from stockpile
c) backtipping subsoil onto loosened substrate
d) levelling subsoil
e) backtipping topsoil
f) spreading topsoil over subsoil using excavator working on substrate

Protocol for encountering unexpected potential land contamination

6.1.24 The EPC contractor will develop a protocol for encountering unexpected contaminated material (soil or groundwater) during excavation works. This will include measures to:

- Segregate and label the suspected contaminated soil or groundwater/liquid, keeping records and photographs of the observed material – where encountered, lateral extent, depth, colours, odours etc.
- Provide adequate containment for the material so that it cannot migrate to cross-contaminate clean soils, reach the surrounding ground or surface water.
- Cease excavation in the location of the unexpected contaminated material until suitable chemical testing, as set out below, has taken place and the results have been assessed.
- Arrange for suitable chemical testing by a UKAS and MCERTS accredited laboratory through discussion with a contaminated land specialist, and follow-on assessment of the contamination in accordance with UK contaminated land guidance i.e., the Environment Agency (2020) *Land contamination risk management* (LCRM) to identify the next steps e.g., to allow decisions to be made about the reuse, treatment or disposal of the material, and to define any other investigative or remedial actions that may be needed.