



SLC Property

**Outline Construction
Environmental
Management Plan**
Prepared in support of a new
planning application for a new
railway station at Ashington

60601435-SLC-P-270-A-CEMP

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1 Introduction

1.1 Background to the scheme

1.1.1 Northumberland County Council (NCC) is seeking to improve connectivity and accessibility in the South East Northumberland Corridor (SEN Corridor) through the development of six new railway stations formerly known as the 'Ashington, Blyth and Tyne Line' which is now known as the 'Northumberland Line'. Works required will include, but are not limited to:

1. the construction of six new stations and associated infrastructure
2. the upgrading of a number of level crossings;
3. construction of footbridges
4. essential upgrading of the existing railway line.

1.2 Purpose of the outline CEMP

1.2.1 This document is the Outline Construction Environmental Management Plan (CEMP) to accompany a planning application for a new railway station at Ashington. The outline CEMP contains control measures, and the standards to be implemented throughout the construction of the works in order to mitigate the potential impacts of the development.

1.2.2 The Contractor would be responsible for producing the final CEMP in accordance with the requirements set out in this document. It is likely that the final CEMP would be a condition of planning to be agreed with and approved by Northumberland County Council before commencement of development. The CEMP will therefore evolve and is subject to refinement, amendment and expansion as necessary.

1.3 Locally sensitive receptors

1.3.1 Whilst this CEMP is produced for the purpose of managing construction activities within the red line boundary of the site, it is acknowledged that a number of sensitive receptors likely to be impacted are located outwith the site. These are listed below.

1.3.2 There are a number of residential properties in close proximity to the proposed station at Ashington which are considered to be locally sensitive. This includes, but is not limited to, properties on:

1. Ashbourne Crescent
2. Kenilworth Road
3. John Street

4. Oakland Terrace

- 1.3.3 Wansbeck Square shopping centre is located immediately to the north of the site of the proposed car park. This shopping centre includes Wilkinsons.
- 1.3.4 Ashington Memorial Gardens is located immediately to the north west of the site. Ashington Cricket Club is located immediately to the west of Kenilworth Road.
- 1.3.5 There are no Public Rights of Way located with, or adjacent to the site of the proposed development. However, a permissive path is located on the site of the proposed car park. Pedestrian and motorist users of Kenilworth Road are likely to be sensitive to construction traffic and activities.
- 1.3.6 There are no designated biodiversity sites located within, or adjacent to the site of the proposed development. The closest designated site is Wansbeck Riverside Park located approximately 1km South West of the site.

1.4 Guidance and other documents

- 1.4.1 The outline CEMP is intended to satisfy the principles of the International Environmental Management Systems (EMS) Standard ISO 14001. The appointed Contractor(s) would ensure that the CEMP for the proposed development complies with the Contractor(s)'s own EMS.
- 1.4.2 The CEMP would be developed in accordance with relevant best construction practice guidance including:
1. Guidance for Pollution Prevention (GPP)¹ 1 – 29. In particular:
 - a. GPP 2 Above Ground oil storage tanks;
 - b. GPP 5 Works and maintenance in or near water;
 - c. GPP 6 Working at construction and demolitions sites;
 - d. GPP 21 Pollution incident response planning;
 - e. GPP 22 Dealing with Spills;
 - f. GPP 26 Safe storage – drums and intermediate bulk containers
 2. CIRIA Environmental handbook for building and civil engineering projects (2000)
 3. Mayor of London THE CONTROL OF DUST AND EMISSIONS DURING CONSTRUCTION AND DEMOLITION SUPPLEMENTARY PLANNING GUIDANCE ²

¹ Department for Environment, Food and Rural Affairs (2019) <https://www.gov.uk/guidance/pollution-prevention-for-businesses>.

²

https://www.london.gov.uk/sites/default/files/gla_migrate_files_destination/Dust%20and%20Emissions%20SPG%208%20July%202014_0.pdf

1.5 Assumptions of the outline CEMP

- 1.5.1 The outline CEMP is based has been prepared in support of the planning application for a new railway station at Ashington as part of the Northumberland Line scheme.
- 1.5.2 Any planning conditions and commitments made following submission of the planning application (if required) would be incorporated into the CEMP by the appointed Contractor(s) who would be responsible for developing the outline CEMP into the full, detailed CEMP to be approved off by the Local Authority. It is assumed that a number of Contractors (including specialist contractors and sub-contractors) may be appointed during construction. All site construction staff, including sub-contractors, would be required to comply with the CEMP throughout the entire construction stage of the proposed development. Regular site monitoring and site audits will be undertaken by the Contractor's Environmental Manager.

1.6 Incident response planning

- 1.6.1 The Contractor(s) will prepare a Pollution Incident Response Plan which identifies the procedures for the event of a pollution incident during construction. The procedures will be in accordance with the guidance set out in GPP 21 Incident Response Planning.
- 1.6.2 All environmental incidents and accidents will be recorded and reported to the Contractor(s)'s Site Foreman and the Project Manager. Following a review of the incident, the Contractor's Environmental Manager will instigate an appropriate change in procedure where necessary.
- 1.6.3 The appropriate equipment required to implement these procedures will be made available by the Contractor(s) and stored within the Contractor(s) compound.

2 Roles and Responsibilities

2.1.1 This section of the outline CEMP identifies the roles and responsibilities of those involved in environmental management during construction.

2.2 Employer

2.2.1 The Employer and will appoint project managers on their behalf to oversee the construction stage of the project.

2.3 Project Manager

2.3.1 The Project Manager will act on behalf of the employer, with responsibility for managing construction of the proposed development within the agreed environmental constraints in conjunction with all other necessary management processes.

2.4 Contractor

2.4.1 It is assumed that a number of Contractor(s) (including specialist contractors and sub-contractors) will be appointed during construction of the proposed development. There may be separate contractors for the Enabling Works and the Main Construction Contract.

2.5 Environmental Manager

2.5.1 An Environmental Manager will oversee the implementation of CEMP including environmental control measures, mitigation and procedures. The Environmental Manager will be appointed by the Contractor prior to the enabling works and will implement the control measures during the enabling works and main construction.

2.5.2 The Environmental Manager will monitor, measure and review the environmental performance of the construction activities.

2.5.3 The Environmental Manager will host regular internal and external meetings and undertake audits to review the operation and effectiveness of the CEMP. The results will be reported by the Environmental Manager at monthly construction progress meetings and used to update the CEMP.

2.5.4 The Environmental Manager will be responsible for the implementation of other environmental management plans.

2.6 Community Liaison

- 2.6.1 The Employer and the Contractor will prepare a procedure for local community liaison with regards to construction activities. Regular community engagement will take place to keep the community informed of project progress including anticipated issues which may be of interest.
- 2.6.2 The Employer will provide the community with general enquiry and emergency contacts for them to use, such that any issues may be raised directly with them, in the event that people feel it appropriate to do so. However, the primary contact would be through the Contractor which will provide a site-based Community Liaison Officer (CLO) and will ensure all site generated enquiries and/or complaints are effectively logged, communicated and actioned in agreement with The Employer. The CLO will align with and assist the delivery of the overarching Communication and Engagement plan.
- 2.6.3 The CLO will represent the Contractor at any required internal and external partnership/stakeholder meetings including virtual meetings. These meetings will relate specifically to community initiatives or communications tasks for the proposed development.
- 2.6.4 The CLO will be the primary point of contact for the Community Development Manager relating to matters on the ground. Themes the CLO will regularly communicate are progress of construction; barriers to progress; reported issues; resolution of those issues; and report impact on overall objectives. The CLO will also be responsible for:
- 2.6.5 Building and maintaining positive relationships with stakeholders facilitating a dynamic and effective communication procedure with established communications team and generating an acceptance of a common vision with all partners/stakeholders;
- 2.6.6 Ensuring positive awareness of the project brand to all internal and external stakeholders;
- 2.6.7 Working closely with the communications team and particularly the Community Development Manager to plan and deliver community liaison tasks to ensure the delivery of the Key Performance Indicators (KPI's) of the communication and engagement plan;
- 2.6.8 Communicate and administer all enquiries and/or complaints in an effective and timely manner, reporting up when required.
- 2.6.9 The contractor and the site will be registered with the Considerate Construction Scheme and will be monitored and measured against the code of Considerate Practice.

3 Control of construction processes

3.1 Training, awareness and competence

- 3.1.1 The Contractor(s) will set out a programme of training to enable all site personnel to be aware of the potential risk to the environment during the construction progress.
- 3.1.2 The Environmental Manager will set out a series of induction courses for all site personnel including sub-contractors. The induction courses will ensure all site personnel (including any new personnel) are aware of the environmental risks which have the potential to happen during construction. The inductions will inform the construction team on how to identify relevant environmental risks on site, record actions taken to protect the environment and implement best practice to minimise pollution.
- 3.1.3 Environmental Awareness Toolbox Talks will be delivered by the Environmental Manager on a regular basis. These will provide an update to the site team on any relevant environmental issues as the construction progresses.
- 3.1.4 Selected members of the site management team including the Construction Site Foreman and Environmental Manager will be given practical training in the use of the spill kits, appropriate PPE, clean-up procedures and the appropriate disposal and recycling plans.

3.2 Environmental inspections, monitoring and reporting

- 3.2.1 The Environmental Manager will prepare a monthly environmental report to be tabled at the monthly site progress meetings. This report will monitor the implementation of the CEMP and review the ongoing site monitoring and inspections.
- 3.2.2 The monthly reports will be circulated to the Employer and the Contractor(s) for consultation and review.

3.3 Internal communications

- 3.3.1 All staff and Contractor(s) will be informed of the content and location of the CEMP and associated management plans and method statements. Method Statements will be used to communicate specific environmental requirements as appropriate.
- 3.3.2 The Environmental Manager will have responsibility for communicating any changes and updates in policy, procedure, best practice guidance and legislation.
- 3.3.3 The Contractor(s) will have responsibility for maintaining internal communication, including changes to material on display.

3.4 Communications with the Statutory bodies and the public

- 3.4.1 The Contractor(s) will organise and facilitate regular meetings with statutory environmental bodies to provide an update on risk mitigation, progress against targets and a review of site monitoring and inspections. This will provide a mechanism for updating and adapting the CEMP as the project progresses.
- 3.4.2 The Contractor(s) will maintain a record of all meetings held with statutory bodies during the construction stage.
- 3.4.3 A notice board will be identified on site where environmental information on the project will be displayed.

4 Environmental Control Measures

4.1 Background

4.1.1 The following sections of the outline CEMP identify the control (i.e. mitigation) measures that have been identified for each environmental topic assessed in support of the planning application for the proposed development.

4.2 General Measures

4.2.1 General site management measures include those listed below

1. Excavation plant machinery will be fitted with fuel spill kits.
2. Lighting will be positioned and directed so as not to unnecessarily intrude on adjacent buildings and land uses (including foraging habitats) and prevent any unnecessary interference with local residents.
3. Welfare facilities will be provided on site and maintained by a licenced Waste Carrier.
4. Vehicle/equipment washing facilities will be positioned away from watercourses and constructed with a drainage system which will capture runoff and effluent which will then be contained for proper treatment as per the Surface Water Management Plan.
5. To minimise noise, vibrational and air quality impacts from vehicles and plant/equipment, the Contractor(s) will instigate behavioural policies for all site staff. This will include:
 - Minimising traffic to site by 'sharing' vehicles or by the use of a site bus (this will be detailed in the Construction Traffic Management Plan (CTMP));
 - Avoidance of part load deliveries (this will be detailed in the CTMP);
 - Utilisation of a pre-booked delivery policy to minimise holding vehicles prior to loading or unloading (this will be outlined in the CTMP); and
 - Ensuring that all construction plant, vehicles and equipment are turned off rather than left idling while awaiting usage (this will be detailed in the CTMP). Where feasible use of hybrid generators which help reduce noise and fuel consumption.
6. Areas will be clearly marked and managed to prevent them becoming overfilled and ensure that the areas are suitable for the materials stored.
7. Hazardous materials such as fuel will be stored within secure compound areas to prevent spillage, theft or malicious damage. A single Control of Substances Hazardous to Health (COSHH) area will be established to ensure the correct level of protection against

fire spills and other chemical hazards. This will prevent sub-contractors and others creating individual stores, which are then not recorded or controlled.

5 Archaeology and Cultural Heritage

5.1 General Provisions

- 5.1.1 A watching brief will be required to be in place during construction, to mitigate the discovery of any previously unidentified features.

5.2 General mitigation

- 5.2.1 Monitoring must be undertaken in any areas where the ground level is to be reduced or excavated, either for the development itself or for any associated service trenches. As the technique of piling is not conducive to the recovery of archaeological material, the requirement for monitoring any such operations needs to be determined by consultation with the Employer's archaeologist and NCC.
- 5.2.2 Works compounds or heavy vehicle working areas and routes associated with the construction phase of the Project will avoid sites and surface features which may be particularly vulnerable to inadvertent damage where feasible. Any significant adverse impact here would be mitigated through inclusion in the proposed controlled soil strip or watching brief in consultation with the Archaeologist.
- 5.2.3 Archaeological excavation may be appropriate for features found during controlled soil strip, or watching brief, as determined by the Employer's Archaeologist and consultation with NCC.

6 Traffic and Transport

6.1 General provisions

6.1.1 A CTMP will be prepared that outlines a range of measures to minimise potential traffic impacts arising from the construction associated with the Planning application. It is anticipated that the CTMP will be secured via a planning condition.

6.1.2 The CTMP will be reviewed and updated in line with the construction programme and is anticipated to include details of the following:

1. Designated construction traffic routes to avoid disruption on local roads;
2. Temporary traffic control measures, where required, such as temporary traffic signals and Banks persons;
3. Heavy Good Vehicle (HGV) movements will be restricted as far as reasonably possible so as to avoid peak traffic flow periods (08:00-09:00 and 16:30- 18:00);
4. Temporary and permanent site access proposals, alongside an access management strategy to avoid potential traffic congestion in the peak hours;
5. Speed limits will be put into place on site for all vehicular movements;
6. Sufficient parking and circulation will be provided within the site to avoid impacts on the neighbouring highways nuisance car parking;
7. Where appropriate, all vehicles carrying loose material will be covered;
8. A wheel wash facility will be used for vehicles egressing the site;
9. Where necessary, use of road sweepers will be incorporated to ensure highways remain clear of dust and mud;
10. Road edges and pathways will be swept by hand and damped down and necessary;
11. Stockpiles to be damped down enclosed or covered as appropriate, be sealed or sprayed with chemical bonding agents as required, and located away from any sensitive receptors wherever possible; and
12. Neighbouring communities and businesses will be consulted and kept informed of the traffic management proposals.

7 Noise and Vibration

7.1 Introduction

7.1.1 This outline CEMP details the reasonably foreseeable worst-case working hours for the works including extended working hours for elements of work which cannot practicably be carried out within normal working hours. It also details the generic noise and vibration suppression measures to be employed.

7.1.2 The Contractor's Environmental Management System will include procedures for implementing the requirements of the CEMP with respect to noise and vibration.

7.2 Working Hours

7.2.1 Control of working hours is a fundamental means of controlling the adverse effects of noise and vibration and is likely to form part of a planning condition. The Contractor will carry out the works in such a way as to limit, as far as reasonably practicable, the adverse noise and vibration impact of the construction activities.

Normal working hours

7.2.2 Normal working hours will be from 0700 to 1800 on weekdays (excluding public and/or bank holidays), from 0800 to 1300 on Saturdays with no working on Sundays. The Contractor will undertake works within these normal working hours as far as reasonably practicable and, where practicable, operations anticipated to cause disturbance will be limited to these hours.

7.2.3 Where this is not practicable, preference should be given to undertaking noise generating works during the daytime over the weekend. Where this is not possible, noisy works should be confined to evening periods rather than night. Night working will only be undertaken when absolutely necessary, for example due to the need for road or rail possessions.

7.2.4 Construction of the new railway stations, whilst maintaining a rail service, will require engineering works to be scheduled to minimise disruption on existing freight services. Construction works associated with the stations and railway will therefore include overnight and weekend working. These works will be planned in advance and information will be made available to local residents.

Start up and shut down periods

7.2.5 In order to maintain the above working hours, the Contractor may require a period of up to one hour before and up to one hour after normal working hours for start-up and close down of activities. The list below sets out the foreseeable specific activities that may need to be carried out in the start-up and close down periods;

1. arrival and departure of workforce and staff on site;

2. deliveries;
3. maintenance and checking of plant and machinery;
4. start-up of machinery and movement to/from work site;
5. general refuelling;
6. site inspections and safety checks prior to commencing work;
7. site meetings; and
8. site clean-up.

7.2.6 Particular care will be taken to limit and control disturbance to local residents during start-up and close down periods. These activities will be undertaken as close to the normal working hours as reasonably practicable. These activities will not include the operation of plant or machinery giving rise to appreciable noise levels.

7.2.7 The Contractor will be held responsible for ensuring these restrictions on working hours are given to all drivers, including those delivering all site materials.

Construction plant repair and maintenance works

7.2.8 It is the intention to undertake all repairs and maintenance of construction plant during normal working hours. However, by exception repair and maintenance may need to be carried out on Sundays, limited to the hours of 09.00 to 16.00, or during extended working hours during the week. Activities outside normal working hours that could give rise to disturbance will be kept to a practicable minimum. Such maintenance activities will only be undertaken within a construction site compound behind the site hoarding.

Extended Working Hours: Foreseeable specific activities of a shorter duration

7.2.9 Certain activities or phases of work which for reasons of safety or engineering practicability will require periods of night-time, Sunday and/or bank holiday working from time to time. Such activities include, but are not limited to:

1. major concrete operations and other continuous operations;
2. setting up of traffic management schemes;
3. short term construction activities requiring road and railway closures/possessions;
4. the delivery of abnormal loads in accordance with the requirements of the Highways Authority and Police, for example during mobilisation and demobilisation;
5. delivery of materials, personnel and equipment by road and rail to construction activities requiring road and railway closures/possessions; and
6. essential maintenance work.

7.2.10 Where construction activities have to be undertaken during possessions of operational railways, the site-specific evaluation of best practicable means to minimise noise should give due weight to the need for operational availability of the railways and the adverse impact on the public associated with any constraint on availability.

7.3 Assessment of Construction Impacts

7.3.1 Once the Contractor has been appointed, a detailed construction noise and vibration assessment will be undertaken based on the proposed working methods, locations and durations. The assessment will take into account the guidance in BS 5228:2009-1+A1:2014 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise' when establishing criteria, controls and working methods for noise management.

7.3.2 The Contractor will take into account the following guidance when establishing criteria, controls and working methods for vibration management:

1. BS 5228:2009-2+A1:2014 Code of practice for noise and vibration control on construction and open sites, Part 2 – vibration;
2. ISO 4866: 2010 Mechanical vibration and shock. Vibration of fixed structures. Guidelines for the measurement of vibrations and evaluation of their effects on structures; and
3. BS 7385 – 2 Evaluation and measurement for vibration in buildings – Part 2: Guide to damage levels from groundborne vibration.

7.3.3 As part of the assessment, the noise and vibration sensitive receptors (NVSRs) identified in the Noise Impact Assessment will be reviewed and any new NVSRs will be identified.

7.3.4 The detailed construction noise and vibration assessment is an iterative process to predict the noise and vibration levels resulting from the various construction activities at the NVSRs and to identify activities or processes which could result in noise or vibration limits being exceeded.

7.3.5 The detailed construction noise and vibration assessment will be undertaken as soon as the construction programme and preferred methods are known and will be updated as necessary.

7.3.6 The detailed construction noise and vibration assessment will form part of the finalised CEMP and will have to be submitted to and approved by Northumberland County Council as appropriate, prior to commencement on site.

7.4 Noise and vibration control

7.4.1 The Contractor will, in so far as is reasonably practicable, seek to control and limit noise and vibration levels so that residential properties and other sensitive receptors are protected

from excessive noise and vibration levels arising from construction activities. Best practicable means will be employed at all times and at all sites.

7.4.2 Generic measures to be considered in implementing Best Practicable Means will be consistent with the recommendations of BS 5228 and will, where reasonably practicable, include the following:

1. Selection of quiet and low vibration plant, construction methods and programming.
2. Only plant conforming to SI 2001/1701 (UK implementation of EC directive 2000/14/EC on noise emission) will be used if placed on the market or put into service since January 2002. Plant placed on the market or put into service prior to that date will conform to SI 1985/1968 (as amended) or to SI 1988/361 (as amended) as appropriate to the type of plant.
3. Equipment to be sited as far from sensitive receptors or as close to any acoustic screen located between the activity and the receptor as reasonably practicable.

7.4.3 Specific measures to be employed may include, where reasonably practicable:

1. provision of acoustic enclosures around static plant, where necessary
2. regular maintenance of all equipment;
3. operation of equipment in the mode of operation that minimises noise;
4. shutting down equipment when not in use;
5. avoiding waiting or queuing on the public highway with engines running;
6. construction of temporary infrastructure to minimise noise and vibration e.g. solid site hoarding;
7. selection of piling methods which minimise noise and vibration;
8. breaking out concrete by means other than percussion;
9. noise reduction measures for temporary ventilation equipment;
10. handling all materials in a manner which minimises noise and vibration;
11. the use, by preference, of non-audible warning systems and where audible warnings are necessary for reversing, vehicle operations will be planned to minimise reversing;
12. fitting of silencers to all plant, machinery and vehicles;
13. design and use of site hoarding and screens, where practicable and necessary, to provide acoustic screening at the earliest opportunity. Where practicable, doors and gates will not be located opposite occupied noise-sensitive buildings;

14. erection of operational noise barriers as early as practicable in the construction process to provide additional protection against construction noise; and
15. choice of routes and programming for the transport of construction materials, spoil and personnel.
16. Site specific best practicable means measures will be identified by the Contractor on a site-by-site and activity-by-activity basis and agreed with the local authority through s.61 consents if required. Additional mitigation will be provided, where reasonably practicable, for activities that are of longer duration, are close to noise sensitive receptors and/or have to be undertaken at more sensitive times such as night-time, weekends and bank/public holidays.
17. plant will be started up sequentially rather than all together;
18. all appropriate personnel will be instructed on BPM measures to reduce noise and vibration as part of their induction training, and followed up by 'tool box' talks;
19. no start-up or shut down of vibratory plant e.g. rollers or compactors, within 50 m of receptors where feasible.

7.5 Noise and vibration measurements

7.5.1 Monitoring of noise and vibration will be carried out as necessary and requirements for monitoring will be reviewed as further consents and licences are received and consultations completed.

Pre-Construction Baseline Monitoring

7.5.2 As stated in Section 6.3, before construction starts noise-sensitive locations will be identified. Appropriate ambient noise and vibration monitoring will be undertaken prior to the start of the Contractor's works. Early discussion should be held by the Contractor with the local authority to determine whether additional pre-construction noise data needs to be collected to re-assess the baseline noise environment. This will allow for appropriate construction noise and vibration limits and mitigation measures to be put in place. Monitoring will then be undertaken during construction to ensure compliance with the stated limits.

Monitoring During Construction (Pro-active Monitoring)

7.5.3 The Contractor will carry out representative construction noise and vibration monitoring once construction works commence in order to: verify construction noise predictions; ensure the effectiveness of attenuation measures; and/or demonstrate compliance with the noise threshold criteria.

7.5.4 All monitoring will be in accordance with the construction monitoring guidelines presented in BS 5228 Parts 1 and 2. Representative monitoring will be carried out periodically e.g. at the

start of new works phases or when works commence in new locations. The schedule of monitoring will be agreed with NTC/NCC once the construction programme is confirmed.

7.5.5 Measurements will be carried out by a suitably trained consultant or member of the construction works team on a nominal fortnightly basis. The frequency of measurements will vary, as measurement surveys will also be dependent on the construction schedule and the timing and location of specific noisy or vibration generating activities. It will be ensured that these activities are fully captured in the construction noise monitoring surveys.

7.5.6 Suitably trained is defined as someone who has attended a recognized course in environmental noise measurement and reporting.

7.5.7 The monitoring locations are to be selected depending upon the phase of works and location of the construction works. The monitoring locations must be representative of the potentially worst affected NVSRs and will be agreed with NCC/NTC.

Construction Noise and Vibration Monitoring –Complaints (re-active monitoring)

7.5.8 If noise and/or vibration complaints are received during the construction phase, it may be necessary to undertake noise and/or vibration monitoring to determine if the construction noise and/or vibration limits are being exceeded. The monitoring will be undertaken at the complainant's property or a suitability representative location.

Construction Noise and Vibration Measurement Procedures

7.5.9 The following measurement procedure will be adhered to:

1. A Type 1 integrating sound level meter and calibrator will be employed (the sound level meter will have a calibration certificate dated within the previous 2 years and the calibrator will have a calibration certificate dated within the previous year).
2. The sound level meter will be calibration checked prior to the measurement at the first receptor, and calibration checked following the measurement at the last receptor. The calibration levels will be noted.
3. At each location, noise levels will be logged for a minimum of 30 minutes. This will give an indication of whether or not the approved maximum noise limits are being met.
4. Logged noise parameters will comprise $L_{Aeq,T}$ and L_{Amax} values.
5. Meteorological conditions will be checked for suitability for noise monitoring. If this is not the case, the measurements will be postponed until the following day.
6. Where necessary attended short term vibration monitoring will be undertaken at the same time as the construction noise monitoring, measuring PPV levels.

Reporting of Construction Noise and Vibration Monitoring

- 7.5.10 The following information will be provided for all noise and vibration measurements. Consideration should be given to preparation of a pro-forma for noise and vibration surveys, to include those items listed below:
1. maximum permitted level of noise and/or vibration at the relevant receptor as documented within the final CNMP, and the measured noise levels at the relevant receptor.
 2. calibration levels at the beginning and end of the measurement period;
 3. make, model and serial number of all noise and vibration monitoring equipment used during the measurement period;
 4. a site plan, drawn to scale, showing the location of the measurement points; monitoring position (height, free field/façade, microphone orientation, etc);
 5. method of fixation of transducers/geophones used for vibration monitoring;
 6. the date, start time and duration of all measurements taken;
 7. the noise and vibration indices being measured e.g. L_{Aeq} , $L_{Amax,F}$, PPV etc.
 8. the response time of the measurement;
 9. weather conditions, in particular with respect to wind and rain;
 10. construction activities taking place at the time of the readings;
 11. any relevant comments relating to the works and ambient noise or noisy intrusions including other events not related to the works causing high levels of noise and/or vibration;
 12. the name and designation of the person taking the readings.
- 7.5.11 The reporting sheets will be examined immediately following their completion. If the data show that the approved noise or vibration limit is likely to be exceeded at any receptor, the actions outlined below in Section 7.5.13 will be followed.
- 7.5.12 The noise and vibration reports will:
1. Verify whether all Best Practicable Means are being used to control noise and vibration levels;
 2. Compare measured noise and vibration levels against the noise limits set out in the CNMP;
 3. Log any noise or vibration nonconformities including nature, status, corrective and preventive actions and potential for statutory intervention;

4. Provide information on any environmental noise and vibration complaints; and
5. Adapt to changes in programme work requirements and likely associated noise and vibration impacts.

Noise and Vibration Monitoring Records

- 7.5.13 The results of noise and vibration monitoring undertaken by the Contractor will be submitted to the relevant local authority, if requested, for review. A logbook will be kept on-site containing records of all noise and vibration monitoring. This logbook will be kept available for inspection by the local authority and will contain records for at least the previous three months.
- 7.5.14 Noise monitoring results will be presented in accordance with recommendations in Annex G of British Standard BS 5228: Part 1: 2009 + A1 2014 and in a format to be agreed with relevant local authorities.
- 7.5.15 The Contractor will be cognisant of the advice given in BS 5228 Part 2: 2009 + A1: 2014, ISO 4866: 2010 and BS 7385: Part 2: 1993 with respect to appropriate data to be recorded when carrying out vibration monitoring.

8 Air Quality

8.1 General Provisions

8.1.1 The air quality assessment identified “high risk” for dust soiling, “low risk” for human health and “low risk” for ecological impact during construction. As a result, the appropriate mitigation measures relevant to the risks of the site has been identified. These mitigation measures are in line with the recommendations from the Institute of Air Quality Management (IAQM) guidance³ and will include:

Communications

1. Develop and implement a Dust Management Plan (DMP), which may include measures to control other emissions, approved by the Northumberland County Council .The level of detail will depend on the risk and should include as a minimum the recommended measures in this document. The desirable measures should be included as appropriate for the site. The DMP may include monitoring of dust deposition, dust flux, real-time PM₁₀ continuous monitoring and/or visual inspections.

Site Management

1. 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;
2. Make the complaints log available to the local authority when asked;
3. 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; and
4. Hold regular liaison meetings with other high-risk construction sites within 500m of the proposed development boundary, if any, to ensure plans are coordinated 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

1. 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 windowsills within 100m of site boundary, with cleaning to be provided if necessary;

³ IAQM (2016) Guidance on the Assessment of Dust from Demolition and Construction (Version 1.1)

2. 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 asked;
3. 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; and
4. Agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with NCC and NTC. Where possible commence baseline monitoring at least three months before work commences on site or, if it a large site, before work on a phase commences. Further guidance is provided by IAQM on monitoring during earthworks and construction.

Preparing and maintaining site

1. Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible;
2. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site;
3. Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period;
4. Avoid site runoff of water or mud;
5. Keep site fencing, barriers and scaffolding clean using wet methods;
6. 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; and
7. Cover, seed or fence stockpiles to prevent wind whipping.

Operating vehicle/machinery and sustainable travel

1. Ensure all vehicles switch off engines when stationary - no idling vehicles;
2. Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable;
3. Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph 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);
4. Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials; and

5. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing).

Operations

1. 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;
2. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate;
3. Use enclosed chutes and conveyors and covered skips;
4. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate; and
5. 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

1. Avoid bonfires and burning of waste materials

8.2 Activities-specific mitigation measures

8.2.1 The following mitigation measures, specific to the earthworks, construction and track out activities, will be adopted.

Earthworks

1. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
2. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
3. Only remove the cover in small areas during work and not all at once.

Construction

1. Avoid scabbling (roughening of concrete surfaces) if possible;
2. 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;

3. 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; and
4. For smaller supplies of fine powder materials ensure bags are sealed after use and stored appropriately to prevent dust.

Track out

1. 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;
2. Avoid dry sweeping of large areas;
3. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
4. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable;
5. Record all inspections of haul routes and any subsequent action in a site logbook;
6. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned;
7. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable);
8. 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; and
9. Access gates to be located at least 10 m from receptors where possible.

9 Water Resources

9.1 General Provisions

- 9.1.1 Site compounds will be located away from all surface water features and watercourses and where possible not within areas at risk of flooding.
- 9.1.2 Wherever practicable, grey water systems will be used at site compounds to reduce run-off from site, improve water efficiency and reduce the potential for polluting discharges to surface watercourses.
- 9.1.3 A site drainage plan will be prepared in advance of construction works, identifying the location of all watercourses and drains/drainage paths and showing mitigation measures to protect the receiving water environment from pollutants from the scheme's construction.
- 9.1.4 All drainage on site will be identified and mapped, with colour coding used to distinguish between surface water, foul sewer and combined drainage. This will ensure that all those working on site are aware of the type of drain in the event of a pollution incident.
- 9.1.5 Pollution control measures such as the use of oil interceptors, the placement of bunds or sediment traps will be used to prevent sediment run-off entering drains.
- 9.1.6 All personnel will attend a site induction before commencing work on site. The briefing will emphasise the sensitivity of the watercourses, surrounding habitat and methods and working practices employed to protect the water environment.

10 Ground Conditions

10.1 General Provisions

10.1.1 It is envisaged that many of the risks identified in relation to the earthworks will be covered by the use of the following measures:

1. Dust control measures during the works, wheel washers for any offsite movements, construction of appropriate temporary transport networks within the construction area, covering of loads during on site transport;
2. Health and safety training, guidance notes and signs and suitable welfare facilities. Promotion of good hygiene practices implemented for the duration of the works with no smoking, eating, or drinking in the locale of excavations in potentially contaminated areas;
3. The use of protective clothing and equipment; appropriate Personal Protective Equipment (PPE) provided to all construction workers. The assessment of risks to construction workers and the provision of appropriate PPE would be the responsibility of the contractor involved in the works;
4. Health and safety risk assessments will consider available chemical testing results for soils, groundwater and surface water, and will inform identification of adequate mitigation measures;
5. Health and safety risk assessments will consider available information on ground conditions and ground gas monitoring data, and will inform identification of adequate mitigation measures with respect to potential risk arising due to encountering isolated pockets of methane during deep intrusive works like piling or band drain installation. As a minimum, this should include development of an appropriate method statement, which will set out procedures allowing for control and monitoring of exposure to ground-gas during any intrusive construction activities;
6. Health and safety risk assessments will consider and implement recommendations made within the detailed UXO risk assessments;
7. Where there is a potential risk of asbestos published guidance (Ciria 733) with respect to managing risk of asbestos in soil and made ground will be considered.
8. Materials management plan will be developed to manage movement, import, reuse and disposal of materials. This will include a specification for materials suitability for use criteria that are protective of both the water environment and human health.
9. An Action Plan for safely dealing with unexpected contamination to be developed. This will include provisions to appoint a suitably qualified and experienced contaminated land practitioner to provide a watching brief and supervisory role should unexpected

contamination be encountered. This role will include assessment of the risks to the construction works and workers. In addition, the Action Plan will set out procedures for dealing with unexpected contamination to allow for assessment of identified contamination, review of health and safety provisions, review of remediation/disposal options, identification of measures limiting environmental impact of these materials. As a minimum, this should include sampling and testing of the encountered materials in-situ or upon excavation, assessment of risk to the environment, storing contaminated materials in a designated and suitably controlled location i.e. lined and banded, and appropriate waste disposal procedures;

10. Environmental monitoring to ensure environmentally sound working practises are being adopted and adhered to and allowing for early warning system preventing detrimental impact on the water environment surrounding the development. A monitoring plan will be prepared by the Contractor and agreed with regulators. It should include baseline monitoring, monitoring during and post construction of controlled water receptors identified by a suitable risk assessment, and set out an Action Plan should impact be identified.

10.2 Site specific measures

- 10.2.1 Site specific measures will be proposed as the design evolves.

11 Biodiversity

11.1 Introduction

11.1.1 The purpose of this section is to outline appropriate measures to safeguard biodiversity resources, with special attention to identified European Protected Species. This section will:

- Specify measures that will be implemented during construction to ensure that impacts on sensitive ecological features are reduced;
- Outline principles for the monitoring and maintenance for these features.

11.1.2 If significant new ecological information comes to light, then these measures should be revised accordingly by the proposed development ecologist. A detailed final CEMP will be produced by the Contractor(s).

11.1.3 The following important receptors will be considered and protected through the implementation of the detailed CEMP:

1. Statutory designated sites including Sites of Special Scientific Interest (SSSIs)
2. Local Nature Reserves (LNR)
3. Protected and notable species (e.g. bats, great crested newt, otter, reptiles, white-clawed crayfish, water vole, red squirrel, badger, birds and migratory fish).
4. Other habitats and features of ecological importance

11.1.4 Where reasonably practicable, environmental mitigation will be provided via the design and implemented by the contractor within the works. This will require preparatory work to be undertaken ahead of the start of construction to permit timely progress of the programme.

11.1.5 Detailed measures to deal with ecological constraints will be prepared including the following, as appropriate:

1. Summary of features of interest for all known areas of nature conservation interest which may be affected due to construction;
2. Provision of guidance on ecological best practice methods to be followed to mitigate potential ecological effects during construction;
3. Procedures to be adopted in the event of unanticipated discovery or disturbance of protected species;
4. Reference to the relevant procedures, including any special measures, to be implemented in the event of a pollution incident, where this occurs on or adjacent to an area where protected and/or notable species are known to be present; and

5. Individual species or habitat management plans to include the information above (where appropriate) for:

- Terrestrial Habitats
- European Protected Species
- Badgers
- Breeding birds
- Other protected and/or notable species

11.1.6 Species or habitat management plans will be prepared by the Contractor.

11.1.7 The Contractor will, where reasonably practicable, reduce any habitat loss within the land provided for the scheme by keeping the working area to the minimum required for construction of the Scheme.

11.2 Measures to reduce potential impact on bats

11.2.1 Areas of particular importance for commuting / foraging bats (including woodland and linear features such as hedgerows) will be retained where possible in order to maintain connectivity for bats for as long as possible during the construction phase.

11.2.2 Following the severance of these features to accommodate the works, dead hedges will be installed during the remainder of construction stage to maintain the flight paths. These must be in place from dusk until dawn during the bat activity season.

11.2.3 A Toolbox Talk regarding bats and foraging and commuting routes should be given by the Ecological Clerk of Works (ECoW) prior to any works commencing.

11.2.4 Where potential presence of roosting bats in any building or tree cannot be ruled out after the full suite of field surveys and pre-construction surveys (undertaken in accordance with best practice guidance), these precautionary measures must be carried out, including the soft-felling of trees and the soft-stripping of buildings, or other built structures.

11.2.5 Where possible planting for the scheme will take in to account general habitat requirements for bats and seek to create habitat and to replace severed linkages/ commuting corridors such as hedgerows through translocations and/ or new planting through habitat creation.

11.2.6 As a general precaution, tree felling would only be undertaken in autumn, between late August and October/early November. This is because bats do not have dependent young at this time and are not hibernating and should therefore be active enough to escape harm if proper precautions are taken.

- 11.2.7 Night working should be avoided where possible. If it cannot be avoided, it should be restricted in the vicinity of known bat commuting routes and valuable areas of foraging habitat (i.e. commuting routes should not be illuminated nor have generators placed next to them).
- 11.2.8 Production of a construction stage lighting strategy to limit the use of construction lighting and ensure all essential lighting is specified and designed to reduce light spill. This is to include locations of lighting and lighting level details. The following measures should be considered within the construction stage lighting strategy:
1. No bat roosts, or important foraging and commuting habitat to be directly illuminated— lighting should be positioned and directed to ensure no light spill over 0.5 Lux onto any retained or created habitats;
 2. Lighting levels to be as low as current standards and guidelines allow;
 3. Lighting will only be provided in essential areas;
 4. Lighting will be directed to where it is needed, and light spill avoided;
 5. LED lighting produces no ultraviolet component and therefore is ideally suited as it greatly reduces the attraction of insects;
 6. The height of lighting columns in general will be as low as possible. However, there are cases where taller columns will enable light to be directed downwards at a more acute angle and therefore reduce horizontal spill light.
- 11.2.9 During construction, mitigation for the temporary loss of habitat will include the provision of new roosting habitat including bat boxes in trees to be retained.

11.3 Measures to reduce potential impact on badgers

- 11.3.1 Any holes/excavations created during construction period which badgers or other mammals could fall into must be covered and a ramp provided.

11.4 Measures to reduce potential impact on birds

- 11.4.1 During construction, mitigation for the temporary loss of habitat will include the provision of new nesting habitat including bird boxes in trees to be retained. Procedures for vegetation clearance to minimise the impact on birds are described below.

11.5 Pre-construction surveys

- 11.5.1 Prior to the construction phase pre-construction surveys will be undertaken in accordance with best practice guidelines. These surveys will include:

1. Follow up bat surveys of (high risk) buildings and trees up to 50m from any construction activities to determine if roosts are present.
2. Follow up otter and water vole surveys on waterbodies and associated habitat within the construction area and up to 250m from construction activities to determine any breeding or resting sites.
3. Badger surveys up to 50m from any construction activities.

11.5.2 The results of the pre-construction surveys will be reviewed to determine if any protected species licences (or changes to the Draft licences as provided for the application) are required and shared with the Statutory Environmental Bodies.

11.6 Procedures for vegetation clearance

General Site Clearance

11.6.1 Any site clearance activities must be in accordance with any mitigation licences from Natural England including European Protected Species mitigation licences (for dormice or otter).

Bats

11.6.2 Dead hedges can be used to allow bats to continue using a favoured flight line during construction after tree lines/hedgerows/other structures are removed to accommodate the development.

11.6.3 Dead hedges may comprise a line of heras fencing panels or similar with hessian or netlon fencing stretched across them to provide a solid feature along which bats can commute during the construction phase. Such structures are only really suitable to maintain connectivity for bats across short distances and are only required during the bat activity season. If they need to be moved during the day due to construction activities, they must be put back before dusk so that the mitigation is effective between dusk and dawn every night.

Birds

11.6.4 Where possible vegetation clearance will be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, an ECoW should be appointed to carry out a nesting bird check on any vegetation to be cleared, or vegetation directly adjacent to major works, no more than 48 hours prior to works commencing. If an active nest is identified, an appropriate exclusion zone will be decided by the ECoW based on the construction activity taking place. This exclusion zone will be marked out and protected from any clearance activity until the young are fully fledged and have left the nest.

Amphibians and reptiles

11.6.5 Amphibians, reptiles or other species encountered will be carefully moved out of the construction areas to suitable receptor areas outside of the construction footprint.

11.6.6 Within grassland areas the following methods will be considered:

1. The height of the vegetation sward will be reduced in stages (Phased habitat manipulation) within works footprint to encourage reptiles to move out of these areas – strimming to 300mm above ground level. The use of this method may vary depending on the time of year and ambient temperatures;
2. Installation of exclusion fencing and placement of artificial refugia (roofing felt, corrugated tin) installed at a density of at least 100 per hectare;
3. Capture and translocation of reptiles to receptor area;
4. Any drift fencing can be removed prior to construction but exclusion fencing to remain in place throughout construction; and
5. Inspection of reptile fencing, if required, throughout construction period and maintenance where necessary.

11.6.7 Habitat manipulation methods should be used first, but reptile translocation programme may also be required.

11.6.8 Reptile enhancement features such as stone and/or log pile hibernacula's will be provided in the habitat adjacent to that being removed. If required one-way exclusion fencing will be used to prohibit amphibians and reptiles returning to the construction area.

11.7 Habitat Damage to Retained Habitats

11.7.1 The Pollution Incident Response Plan will be developed by the Contractor(s) to ensure no damage to retained habitats through pollution incidents such as accidental fuel and chemical spills, as described above under Section 1.6 of this document (Incident response planning).

11.7.2 Habitat damage through sediment damage will be prevented through measures identified in Section 9.1 of this document.

11.7.3 Activity-species mitigation measures have been identified in Section 11.2-11.4 of this document.

11.7.4 A detailed Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) will be prepared and will describe how trees and hedges will be protected and managed during construction. The AMS will provide an instruction manual and work schedule for the site manager to inform tree and hedge root protection measures prior to and during construction, and is likely to include information on the following:

1. A schedule of remedial tree surgery and tree removal works to be completed prior to the commencement of all other operations on site;
2. The final location, specifications and installation details of the construction exclusion zones to include both tree protection fencing and ground protection measures;

3. The final details and specifications for the special engineering measures where works are proposed to take place within the Root Protection Areas (RPAs) of trees to be retained;
4. Arrangements for works at the tree protection orders in order to undertake special engineering measures;
5. The location of site compounds, site offices and facilities, including parking arrangements, and areas for the storage of materials. Access routes for heavy plant and machinery, delivery vehicles and issues related to lifting plans for proposed crane use or access to site where aerial tree crown parts may affect intended operations;
6. Positions of responsibility on site, communication channels and details of intended contractors to be employed to undertake all arboricultural-related operations;
7. A programme setting out the sequence and timing for all works related to the trees on the site;
8. The system to be employed for monitoring the completion of each stage of the works and the protection measures specified;
9. The appointment of an Arboricultural Clerk of Works. This will be an appropriately qualified and experienced person charged with the supervision and monitoring of the works related to trees and the reporting of satisfactory completion of operations to the client and the Local Planning Authority.

11.7.5 A Hedgerow Translocation Method Statement will be provided with the final CEMP to avoid damage to hedgerows that are to be translocated during the works. A Turfs and Soils Method Statement will be provided with the final CEMP to avoid damage to the turfs and seed bank within the soils during the works.

11.8 Invasive species management plan

11.8.1 A full Invasive Species Management Plan will be produced by the Contractor(s) (in consultation with specialist contractors) to set out the requirements and management of invasive species to prevent the spread of species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), with exact methods of removal and disposal. General measures that may potentially be used for the invasive species identified within the proposed development boundary are laid out below.

11.8.2 No invasive species were identified recorded on site. However, species including Japanese knotweed *Fallopia japonica* and cotoneaster are known to be present in the surrounding area. Only one record of Japanese Knotweed located 1.5m North East of the site.

11.8.3 In addition to the control measures set out below, a pre-construction survey will be undertaken of all areas within the construction footprint to identify the location of any

invasive species not already identified. General control measures that may be included within the full Invasive Species Management Plan are as follows:

1. Details of invasive species will be included within the project induction and toolbox talks given to operatives working in areas where the species are or have been known to grow. Any early regrowth will be reported and dealt with as per methodology detailed below and within the full Invasive Species Management Plan. If the cells have been completed when new growth is discovered this will be excavated and taken for offsite disposal at licenced facilities;
2. There will be a vehicle cleaning area adjacent to the burial zone and all vehicles used will be cleaned prior to leaving this area. This area will not be greater than 7m from the burial zone, material left in the clean down zone will be collected and deposited into the burial cell;
3. The excavation will remove and transfer invasive species contaminated material with haulage to the holding area being supervised;
4. Areas where invasive contaminated material is buried will be accurately recorded and details of this included within the final CEMP;
5. Excavation is to begin from the furthest point of the works and move backwards to avoid traffic on excavated, potentially contaminated ground;
6. Vehicles collecting and removing material should be positioned over part of the geotextile prior to loading. Any material that may be dropped by the hopper will be caught by the geotextile;
7. Once the works have been completed, the excavator is to be thoroughly cleaned and all arisings placed into the final load of contaminated material;
8. In the event of material requiring storage prior to burial this will be stored in a designated location on an impermeable membrane to prevent spread of the plants. This area will also have a clean down zone; and
9. If any material is to be removed for offsite disposal this will only be performed once a disposal location has been identified and this location has confirmed that it will accept the waste. This will require ground investigation data and may need up to 10 days to obtain this information.

12 Landscape

12.1 General Provisions

12.1.1 The following measures will be implemented to help mitigate the impact of the development on the landscape and visual resource:

1. removal, handling, storage and transplanting of any vegetation which is to be reused, relocated or transplanted;
2. a programme for undertaking planting works;
3. maximising the retention and protection of all existing trees and vegetation, whether statutorily protected or not, within or in the vicinity of the site, in accordance with BS 5837: 'Trees in relation to design, demolition and construction';
4. replace/plant trees with suitably sized trees to the approval of NCC and NTC Tree Officer (s), and in accordance with the approved programme for undertaking planting works at the first available planting season;
5. use of well-maintained fencing and hoardings to prevent unwanted access to the construction site, to provide noise attenuation, screening, and site security where required;
6. use of different types of fencing and hoarding to minimise visual intrusion;
7. painting the side of hoardings facing away from the site, and to keep them free of graffiti or posters;
8. protect and retain existing walls, fences, hedges and earth banks for the purpose of screening as far as reasonably practicable;
9. temporary lighting to avoid unnecessary intrusion onto the adjacent buildings and wider landscape to prevent unwanted impacts on night-time lighting;
10. Maintain a clean and tidy site, using road sweepers and other appropriate methods.

12.2 Protection of trees and vegetation

12.2.1 The Employer will appoint a suitably qualified consultant or arboricultural consultant to oversee works relating to the protection of trees. Retained trees will be protected in line with the recommendations in BS 5837: Trees in relation to design, demolition and construction.

12.2.2 Any tree surgery and felling operations will comply with the recommendations in BS3998: Tree work. Recommendations, as appropriate.

- 12.2.3 The Arboricultural Method Statement will be followed for works adjacent to existing trees, tree protection and tree removal measures.
- 12.2.4 Vegetation clearance would be undertaken, during the appropriate season/time of year, with great care to remove the minimum necessary and to protect and retain adjacent vegetation. Trees to be retained would be protected with fencing in accordance with British Standard BS 5837:2012 Trees in relation to design, demolition and construction and as shown on the TPP in the arboricultural report. These works are to be undertaken outside of the bird nesting season (March to October inclusive) and are to be supervised by a qualified Environmental Clerk of Works.
- 12.2.5 To prevent the spread of non-native invasive plant species, the appointed contractor must follow the latest guidance as set out by Natural England or other relevant authority.

12.3 Tree planting and replacement

- 12.3.1 The supply, storage, handling, planting and maintenance of new planting will be undertaken in accordance with appropriate British Standards, including BS 5837 Trees in relation to design, demolition and construction; BS 3998 Tree Work. Recommendations; BS8545 Trees from nursery to independence in the landscape- Recommendations; and BS 4428 Code of practice for general landscape operations (excluding hard surfaces) and other appropriate guidance including the UK Forestry Standard and the UK Woodland Assurance Standard.
- 12.3.2 Sourcing of plants and seed will be in accordance with current Defra/Natural England and industry guidance to prevent the spread of pests and diseases and non-native invasive species. Contractor to refer to UK Plant Health Information Portal and Natural England's latest publications on this topic.

12.4 Measure to reduce potential impacts on landscape and visual resource

- 12.4.1 Planting and other landscape measures will be implemented as early as is reasonably practicable where there is no conflict with construction activities or other requirements of the project. The Employer will require its contractors to consider where measures can be implemented early and programme the landscape works accordingly. Locations for landscape measures will be discussed and agreed with the relevant local authority and will be aimed at the protection and mitigation of adverse effects on sensitive views and valued landscape features and characteristics.
- 12.4.2 A record of how the implementation of the works meets control measures, relevant to protection of the landscape and key landscape features, will be maintained and regularly reviewed.

- 12.4.3 The Employer, Local Planning Authority, Natural England and other bodies (where they have an interest), and adjacent landowners will be consulted, as appropriate, regarding the landscape and planting proposals.
- 12.4.4 Potential impacts on trees or other mature vegetation will be considered, seeking to avoid and minimise unnecessary impact, when positioning site access and egress points.
- 12.4.5 Excavated material (especially topsoil) will be handled in an appropriate manner to ensure its viability for reuse. The quality of excavated material (topsoil/subsoil) will need to be tested by a suitability qualified specialist for its suitability to be used for either structural embankments, landscaping or agreed third party use. Appropriate construction good practice in handling all material re-use will be implemented.
- 12.4.6 The sourcing, testing, stripping, handling, storage and spreading of site-won and imported topsoil will comply with BS 6031: Code of practice for earthworks. Imported topsoil will comply with the BS 3882: Specification for topsoil and requirements for use.
- 12.4.7 Planting, seeding, wildflower seeding, and other landscape works will consider the recommendations of the latest version of the following standards. Alternatively, where a British Standard does not exist, works will follow industry best practice and agreement will be sought from the Employer.

12.5 Monitoring

- 12.5.1 Appropriate inspection, monitoring and maintenance of landscaping and planting and seeding works provided as part of the proposed development, will be undertaken by the contractors throughout the construction period.
- 12.5.2 The Employer will supply its contractors with information prior to construction to verify the landscape planting and seeding design and arboricultural requirements as set out in relevant drawings and specifications. This will allow the contractors to fully understand the required mitigation measures.
- 12.5.3 The Employer will require its Contractors to undertake appropriate maintenance of planting and seeding works and implementation of management measures, through the construction period as landscape works are completed. The Contractors will monitor the progress of new landscape works through the construction period. Any failures of planting and seeding will be replaced in accordance with the approved specification and works requirements. This will ensure annual replanting and reseeding works are undertaken (as required) to achieve successful establishment of the landscape mitigation proposals at completion of the construction work.

Document ends