



Midland Metro Birmingham Eastside Extension

Code of Construction Practice Part 1
MMD-300207-HS30-DOC-0000-1025 Rev B

September 2016

West Midlands Combined Authority

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1 Preface

1.1 General

This document is the Code of Construction Practice ("CoCP") Part 1. It is referred to in agreement(s) relevant to the Birmingham Eastside Extension (BEE) to the Midland Metro. Its purpose is to set down a series of measures to minimise environmental impacts during the construction of the BEE. It defines minimum standards of Construction practice acceptable to the West Midlands Combined Authority (WMCA) and the local authorities, and required of the Contractor. The Code applies equally to Works within the public highway, off the highway and at site compounds unless the context dictates otherwise.

The Contractor, as part of the Midland Metro Alliance (MMA), is to prepare a scheme specific document for the BEE to show how the Contractor intends to comply with CoCP Part 1. The document will constitute the CoCP Part 2.

In preparing the CoCP Part 2, the Contractor shall take due account of the interface between the Works and other on-going or proposed development works in Birmingham City Centre, Digbeth and Eastside, ensuring that proposals for the Works take account of the construction, highway and traffic management measures of other development or highway schemes.

The CoCP addresses the Contractor's general obligations in so far as they affect the environment, amenity and safety of local residents, businesses, the general public and the surroundings in the vicinity of the proposed Works at every Site. It does not attempt to address the Contractor's responsibility to those working on or visiting the Site of Construction activities. These are regulated through statutory controls. Notwithstanding any reference to such controls in this document, the Contractor is to at all times comply with relevant legislation.

1.2 Definitions and Abbreviations

In this Code the following terms are to have the following definition:

Table 1.1: Definitions and Abbreviations

Term	Definition
WMCA	West Midlands Combined Authority.
BEE	The Midland Metro Birmingham Eastside Extension authorised by the Order.
Contractor	The Contractor who forms part of the Midland Metro Alliance.
CoCP	This Code, including a general section Part 1 and a series of Site specific sections Part 2.
Construction	All Site related activities including but not restricted to Site investigations, Site preparation, demolition, materials delivery, spoil and waste materials removal and disposal associated with the Works.

Term	Definition
Environmental Management System (EMS)	An organisational structure, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving and reviewing the Contractor's environmental policy.
Highway Authority	As defined in the Highways Act 1980.
Local Authority	Birmingham City Council.
Midland Metro Alliance (MMA)	Consortium between the West Midlands Combined Authority and alliance design and contractor partners to implement a ten year programme of Midland Metro which includes the BEE. The MMA further referred to as the contractor the 'Contractor'.
Order	The proposed Midland Metro (Birmingham Eastside Extension) Transport and Works Act Order.
Order Plans	Works and Land Plan forming part of the Order documents.
Owner's Brief	Method through which the Contractor will be appointed to construct the BEE.
Planning Direction	A direction made under Section 90 (2A) of the Town and Country Planning Act 1990.
Scheme Boundary	The extent of the area included within the Order over which powers to construct the Works are granted by the Order.
Section 61 Application	An application for a Section 61 Consent.
Section 61 Consent	Consent granted by the Local Authority under the Control of Pollution Act 1974 Section 61.
Site	Specific areas of land used and/or occupied within the Scheme Boundary by the Contractor for the purposes of executing certain elements of the Works.
Traffic Manager	The Traffic Manager of Birmingham City Council as defined in the Traffic Management Act 2004.
Traffic Signs Manual	Manual produced by Department for Transport to illustrate and provide guidance on the use of traffic signs on all purpose roads.
Traffic Signs Regulations	The Traffic Signs Regulations and General Directions 2016 or as subsequently amended.
Works	The Works authorised by the proposed Order.

A list of abbreviations used in this document is given in **Appendix A**.

1.3 Control of Pollution Act

The Contractor is to obtain the agreement of the Local Authority in accordance with the provisions of Section 61 of the Control of Pollution Act 1974.

1.4 Applicable Standards, Codes and Acts of Parliament

There are many Standards, Codes of Practice and Acts of Parliament which cover environmental and related matters and which are applicable to the matters set out in the CoCP. A list of the most relevant of these is given in **Appendix C**, the list is provided for initial guidance only and should not be regarded as being comprehensive. Notwithstanding any references within the CoCP to such documents, the Contractor is responsible for ensuring that he and his agents identify and comply with any legislative requirements, standards or codes of practice applicable at the time of Construction activities. Compliance with this CoCP will not absolve the Contractor, principal contractor and contractors from compliance with all legislation and bylaws relating to their Construction activities.

The Contractor shall register the scheme with the National "Considerate Constructors Scheme", or other similar scheme, further information and registration forms can be found on the internet at www.considerateconstructorsscheme.org.uk or by contacting them at Considerate Constructors Scheme, PO Box 75, Ware, Hertfordshire, SG12 9UY. The Contractor will be obliged to offer up any reports carried out under the scheme, or similar scheme, on the request of WMCA or the Local Authority.

In order to maintain stated standards in the field of environmental management tools and systems, the Contractor is to comply with the Contractor's Environmental Management System, which is to be an Eco-Management and Audit Scheme (EMAS), and/or an ISO 14001 accredited scheme.

2 Roads, Footways and Cycleways

2.1 Construction Traffic Management Plan

The Contractor will be required to produce a Construction Traffic Management Plan covering the items in the following sections. The plan is to be agreed with the Local Highway Authority.

2.2 Permanent and Temporary Restrictions Closures and Diversions Affecting Vehicles and Pedestrians

The Contractor must note the provisions of the Order, the New Roads and Street Works Act 1991 and the Traffic Management Act 2004. The Contractor must make early contact with the Traffic Manager to enable the proactive management of road networks.

In order to construct the BEE, it will be necessary to implement traffic restrictions, closures and diversions, including carriageways, footways, cycleways and other rights of way during the Construction period either on a temporary or permanent basis.

It is the Contractor's responsibility to finalise the arrangements for these closures and diversions with the Local Authorities in accordance with the requirements of the Order. The Contractor's proposals must be agreed with the Traffic Manager. These proposals must include all necessary changes to traffic signs and traffic signal equipment to accord with the revised permanent highway and traffic management arrangements.

The Contractor is to ensure, where these are required, that alternative arrangements are put in place where Construction interferes with or affects the normal operation of a street including carriageway and/or footway and/or cycleway. Such arrangements are to be agreed in writing with the Local Authority and include reasonable measures to minimise disruption in the street. The Contractor must provide at all times reasonable access for pedestrians going to or from premises abutting on a street in which works are taking place.

The Contractor is to keep open all public and private roads and footways that cross every Site, unless their permanent or temporary diversion or closure is specified in the Order and agreed with the Traffic Manager, or for any other street, as agreed with the Traffic Manager. Wherever the Works interfere with existing public or private roads or other ways over which there is a public or private right of way for any traffic, the Contractor is to construct diversion ways except where the Order provides for those roads or other ways to be permanently stopped up without provision of a substitute. The standard of Construction and lighting is to be suitable in all respects for the class or classes of traffic using the existing ways, and the widths of the diversions are not to be less than that of the existing way unless agreed with the Local Authority and/or owner of the private road in writing. The Contractor is to agree diversions and closures with the Local Authority in writing with a view to minimising disruption during Construction.

Diversion ways are to be constructed in advance of any interference with the existing ways and are to be maintained to provide adequately for the traffic and pedestrian flows. This will include arrangements for

monitoring traffic flows, maintaining temporary traffic management measures and proactively managing traffic to ensure the safe and efficient movement of traffic in the wider highway network.

The Contractor is to be responsible for supplying, erecting, maintaining for the requisite periods and subsequent dismantling all statutory and public information notices. The nature and location of such notices is to comply with all statutory requirements and the reasonable requirements of the Local Authority.

2.3 Pedestrian and Cycle Routes

All temporary and diverted footways which replace footways that are currently accessible to wheelchairs and pushchairs are to continue to be useable by such users. All temporary and diverted footways are to provide direct links wherever possible and avoid long detours.

Clear signage in accordance with the Traffic Signs Regulations is to be provided at all times for all diverted pedestrian and cycle routes.

In developing a strategy for when closures or diversions will be undertaken, the contractor will pursue the following hierarchy:

- maintain cycle and pedestrian routes on or close to the existing alignment;
- install any permanent alternative cycle route in advance of the main construction works where possible.

2.4 Maintenance and Repair of the Highway

The Contractor is to take every precaution to prevent its operations from damaging the roads and footways in the vicinity of the Works. The Contractor is to carry out all maintenance works as are necessary to maintain the roads and footways included in the Works in a serviceable condition as approved and agreed in writing by the Local Authority.

All temporary footways and ramps must be surfaced in non-slip material and kept free of mud and debris.

The Contractor is to so order the Construction of the Works as will afford access for the Local Authority to maintain its highway lighting.

2.5 Lorry Movements

The Contractor, its sub-contractors and suppliers moving large and/or heavy loads, Construction plant, materials and spoil (including vehicles used for carrying such when running empty) are to minimise the use of public highways as far as is reasonably practicable, when waiting to enter Sites.

Access routes for HGVs are to be agreed in writing with the Local Authority in advance.

Vehicles arriving or leaving Sites are to do so during normal working hours as specified in Section 4 of the CoCP unless otherwise agreed in writing with the Local Authority.

The Contractor is to take all reasonable measures to ensure that delivery vehicles do not park on the highways prior to entering the Sites. In addition, the Contractor is to take all reasonable measures to ensure that vehicles used by the Contractors' staff for travelling to and from the Works are not parked on the highway.

The Contractor when entering into any sub-contract for the execution of any part of the Works or for the supply or transport of heavy loads, Construction plant, materials or spoil in relation to the Works is to incorporate in any such sub-contract provisions requiring the principal sub-contractor and contractors to comply with the requirements of this section.

2.6 Mud and Debris

The Contractor is to take strict measures to minimise the spillage of mud and debris on roads arising from excavation Works through:-

1. the provision of easily cleaned hard standing for vehicles entering, parking and leaving the Site;
2. the provision of wheel washing facilities including, where practicable, mechanical wheel spinners;
3. the use of mechanical road sweepers, surface flushing apparatus, gully cleaners and other such equipment to clean the hard standing and to remove any mud or debris deposited by Site vehicles on roads, footpaths, gullies or drains in the vicinity of the Site. The road sweepers and other equipment are to be readily available at all times throughout the Construction Works;
4. the complete sheeting of the sides and tops of all vehicles carrying spoil or debris;
5. ensuring that vehicles are loaded in such a manner as to prevent spoil falling off during transit, are not overloaded; and
6. compliance with the requirements regarding dust outlined in Section 6 of this CoCP.

2.7 Traffic Safety and Control and Site Access

All Site accesses to and from the highway are to be of sufficient width to provide safe access and egress, whether such accesses are accommodating two-way or one way in and one way out, traffic arrangements.

The Contractor is to provide, erect and maintain such traffic signs, road markings, new signage, lamps, barriers, traffic control signals and such other measures as may be necessitated by the Construction in accordance with the requirements of the Local Authority. Compliance with this clause is not to relieve the Contractor of any of its other obligations and liabilities under current legislation and Chapter 8 of the Traffic Signs Manual.

The Contractor is not to commence any work that affects the public highway until all traffic safety measures necessitated by the work and as agreed with the Traffic Manager are fully operational.

The traffic signs, road markings, new signage, lamps, barriers and traffic control signals and other measures are to be in accordance with the requirements of the Traffic Signs Regulations. They are to include appropriate advance warning and give way signage as appropriate for Construction traffic.

The Contractor is to keep clean and legible at all times traffic signs, road markings, new signage, lamps, barriers and traffic control signals and is to position, reposition, cover or remove them as required by the progress of the Works and to the approval of the Local Authority.

2.8 Access Across Site and to Frontages

The Contractor is to take all reasonable precautions in carrying out the works to prevent or reduce any disturbance or inconvenience to the owners, tenants or occupiers of adjacent properties, and to the general public.

The Contractor is to provide and maintain any guard rails, fences, gates, lights, bridges, steps, handrails, etc., needed for alternative access and they are to be of such size, strength and construction as will be adequate for their purpose.

The Contractor is to render every reasonable assistance to occupiers of premises and businesses affected by the Construction and must provide reasonable access to enable customers to access and permit materials or goods into or out of those premises and businesses. The key to this is liaison and timely consultation with frontagers affected, in order to establish their particular requirements in this respect. The more general requirements are discussed in Section 15 of this document and should be formulated in a separate Communications Plan to be developed by the MMA.

3 Protection of the Water Environment

3.1 Waste Water and Groundwater

The Contractor is to develop and implement a plan to provide drainage of the Sites during Construction along the route of the BEE. The plan is to include measures to ensure that surface water run-off is contained and managed appropriately.

It should be noted that WMCA has obtained significant ground investigation information in developing the scheme, reports and location drawings, which will be produced for the Owner's Brief.

Discharge of washout from temporary Construction laydown and storage areas into 4 local watercourses is to be prevented. The Contractor is to take full account of the Environment Agency's Pollution Prevention Guidelines (PPGs).

Waste water and Site discharges are only permitted where effluent quality and discharge location is acceptable to and has been approved by the Environment Agency.

Severn Trent Water should be contacted for both water supply and sewerage details and permissions. Prior to any excavation below the water table, including any Site de-watering, the Contractor is to inform the Environment Agency and the local water supply company of the Works to be constructed. Details of the Works, de-watering and disposal measures are to be agreed with the Environment Agency in accordance with the Water Resources Act 1991, as modified by the Environment Act 1995, and where relevant, the protective provisions for the Environment Agency contained within the Order.

The Contractor will comply with BS 6031: 2009 "Code of Practice for Earthworks", regarding the general control of Site drainage.

In order to prevent the pollution of surface and ground waters arising from the storage, handling and use of silt and cement, the Contractor is to prepare a Silt Management Plan and ensure that the following measures are adhered to:

1. The washout from mortar and concrete mixing plant, or the cleaning of ready mixed concrete lorries must not be allowed to flow into any drain or watercourse.
2. Site roads must be regularly swept in order to prevent silt, oil or other materials from entering any drain or watercourse.
3. Wheel washes and plant washing facilities are to be securely constructed with no overflow and the effluent is to be contained for proper treatment and disposal in accordance with the Environment Agency guidelines, PPG 13 - Vehicle washing and cleaning.

Where contaminated land is identified within the Scheme Boundary, a full management plan is to be prepared by the Contractor to comply with all relevant handling and disposal legislation (including de-watering discharges from piling operations), as required by the conditions contained within the Draft Planning Direction. Detailed Site investigations at all Sites where earthworks or piling are planned are to be carried out prior to Works commencing, in order that appropriate mitigation can be implemented. See Section 7.0 for further guidance.

The Contractor is to ensure that any water that has come into contact with contaminated materials is disposed of in accordance with the Water Resources Act 1991, Control of Pollution (Applications, Appeals and Registers) Regulations 1996 and Water Industry Act 1991 (as amended by the Water Industry Act 1999) (if disposed of to a public sewer) to the satisfaction of the Environment Agency, Severn Trent Water or the Local Authority (as appropriate).

The Contractor is to apply for consents and approvals from the Environment Agency, the Local Authority or Severn Trent Water as appropriate.

Any groundwater discharge from excavation de-watering operations is to be treated appropriately for silt content and contamination, to the satisfaction of the Environment Agency, the Local Authority or Severn Trent Water as appropriate

The Contractor is to make provisions to ensure that oil drums and containers or other potential contaminants stored on the Site are controlled in accordance with the Control of Substances Hazardous to Health Regulations 2002, the Control of Pollution (Oil Storage) Regulations 2001 and the Groundwater Regulations (1998). They must be properly isolated and bunded such that no oil or other contaminants are allowed to reach watercourses, groundwater or, aquifers. Storage locations for such materials are to be positioned away from watercourses.

In the event of a pollution incident involving surface and/or groundwater, the Contractor is to inform the Environment Agency or the Local Authority as appropriate immediately and is to take prompt action to minimise the effect. The Contractor is to develop and agree a Spillage and Emergency Response Plan in consultation with the Environment Agency and the Local Authority.

As part of the Construction Environmental Management Plan (CEMP) which will be produced by the Contractor, the following measures should be included:

- All traps should also incorporate oil or grease removal facilities.
- Sediment traps and surface drains should be regularly cleaned and maintained. Daily inspections of such facilities should be required of the appointed contractor.
- Temporary sanitation facilities will be installed on site to take care of the sewage from workers. Waste water from sanitary facilities will be kept completely separate from the surface water management system.
- Temporary site drainage is to be provided to prevent overflow of site surface water runoff to watercourse and highways.
- Storage tanks on site for potential polluting substances should be surrounded by appropriate bunds to ensure that any accidental spillage or leakage does not lead to contamination.
- Storage areas for materials and plant should take into consideration its distance to the watercourse – the further away the better. Plant should only be parked in hard standing area at night or whilst not in operation.
- Refuelling activities will be carried out at a suitable distance from any watercourses, agreed by the Contractor in consultation with the Environment Agency. Grab packs etc, will be available in the unlikely event of a spill, and site personnel will be trained in their use.

- Any areas of exposed soil should be minimised in order to reduce the potential for increased siltation and contaminated runoff.

3.2 Protection of Aquifers

The Contractor is to have due regard for underlying aquifers and adhere to the Environment Agency's Groundwater Protection Policy and the Groundwater Regulations 1998. In all instances, appropriate protection of aquifers is to be undertaken, following liaison with the Environment Agency and the local water supply company regarding piling and Construction techniques to be employed. Details of appropriate measures to prevent groundwater contamination (including monitoring) are to be agreed with the Environment Agency prior to commencement of the Construction.

3.3 Control and Management of Foul Drainage

Foul water produced by the Construction workforce is to be contained by temporary foul drainage to be installed by the Contractor. All foul water is to be deposited off Site by a licensed operator, or disposed of to the public foul sewer if approval from the relevant sewerage undertaker is obtained per the Water Industry Act 1991 (as amended by the Water Industry Act 1999).

4 Noise and Hours of Working

4.1 Hours of Working

The normal hours of working and permissible levels of noise may vary from Site to Site depending upon the nature of the area through which the Works are being constructed. These are to be as stated in Part 2 of this CoCP, and are to be agreed by the Contractor with the Local Authority in writing.

Except where otherwise stated in Part 2 of this CoCP, normal working hours are to be as follows:

Monday – Friday 0700 – 1900

Where work is in the vicinity of residential properties, there shall be a start-up period from 0700-0800 hours on all days, and a shutdown period from 1800-1900 hours Monday to Friday, when there shall be no disturbing construction-related noise audible beyond the Site Boundary.

Construction outside of these hours must be approved by the Local Authority in writing. These hours of work do not apply to equipment which is required to operate continuously, although thorough consideration to the types of equipment employed should be given and silent or acoustically shielded equipment given preference over other types where available. In general, night time working (any time outside the hours quoted above in para 4.1.2 and all day Sunday) is to be kept to a minimum. Where reasonably practicable, noisy work and the timing of deliveries should be programmed to avoid the start and end of standard hours of work. However, for some sites where night-time working is required and agreed in advance, in writing, with the Local Authority, it is to be subject to specified noise limitations as stated in section 4.2 below and any Section 61 consent.

Additional or alternative working hours needed for emergency reasons are to be advised to the Local Authority at the earliest practicable opportunity. The method of notifying the Local Authority in such an emergency, shall be agreed and specified within the Section 61 consent.

4.2 Noise Mitigation on Site

The Contractor is to have a general duty to take all practicable measures to minimise disturbance from noise. In relation to all construction activities, the Contractor is to apply in good time under the Control of Pollution Act 1974 for a Section 61 Consent.

The Section 61 Application should demonstrate that the best practicable means of controlling noise have been adopted and should also specify the system by which site noise levels will be monitored. The noise limits specified in this section or which may be agreed with the Local Authority must not be regarded as a licence to make noise up to the allowable limit.

The Contractor is to liaise with and consult the Local Authority with regard to permissible levels of noise and take such other steps as may be necessary to enable the Works to proceed in accordance with the Contract. Where piling is proposed in the vicinity of residential properties or hotels, noisier percussive or driven piling techniques are to be avoided.

The Contactor shall liaise with occupiers of sensitive receptors in the vicinity of and adjacent to the Works, in order to ensure noisy operations are not undertaken at particularly undesirable times.

Prior to the commencement of any Construction work at any work Site, the Contractor will be required to demonstrate to the Local Authority and Centro that it can comply with the agreed noise limits for that work Site. This is to be done on the basis of its Contractor's intended and clearly stated methods of working, types of plant to be used and noise mitigation measures. A requirement to demonstrate that this will be done will part of the Section 61 Consent.

Where practicable, a minimum of 1 week prior to the commencement of any Construction work, occupiers of all accommodation in the vicinity shall receive notification from the Contractor detailing the work to be undertaken, the start and end times / dates and a telephone number which residents can use to contact the Contractor at any time that work is on-going to discuss noise and any other relevant issues. Section 15 of this document generally details Public Relations and notes the need for a separate Communications Plan which is to be developed by the MMA.

The Contractor is to allow representatives of WMCA and the Local Authority to access Sites at any time to monitor noise levels.

If the Contractor wishes to change its proposed method of working from that upon which it has demonstrated compliance with the agreed noise levels, then it must repeat the above process and submit as an amended Section 61 consent application.

Subject to the specific requirements of the Local Authority, the minimum requirements set out below must be met.

In the event that higher noise levels than those specified below are necessary for certain specific activities, the Contractor will obtain permission from the Local Authority in respect of such higher levels.

4.3 Noise Limits

Maximum noise levels measured 1 metre from any window of any occupied part of a dwelling or other building used for residential purposes, generated by Construction plant and equipment, including the movement of vehicles to and from the Site are not to exceed the following limits, except by prior agreement with the Local Authority.

Table 4.1: Normal Working Hours

Day	Time	Averaging Period (hrs)	Limit LAeq,T dB
Monday – Friday	0700-0800	1	70
Monday – Friday	0800-1800	10	75
Monday – Friday	1800-1900	1	70
Saturday	0700-0800	1	70
Saturday	0800-1300	5	75

Table 4.2: Outside Normal Working Hours (with consent of Local Authority)

Day	Time	Averaging Period (hrs)	Limit LAeq,T dB
Monday – Friday	1900-2200	1	65
Saturday	1300-2200	1	65
Sunday	0700-2200	1	65
Any Day	2200-0700	1	55

The maximum noise levels measured 1 metre from any window of any school, college or other teaching facility resulting from any operation by the MMA on the Site and concerned in any way with the Construction of the Works are not to exceed the following limits during the periods when the teaching facility is in use:

- At any time LAeq dB(A) 65 (1 hr)
- Peak Noise Level LAmax dB(A) 70 (1 min)

The maximum noise level measured 1 metre from any window of any office building or other noise sensitive building during the periods when the building is in use is to be as defined in the tables 4.1 and 4.2 above.

Noise limits and noise control requirement will not apply for emergency Works.

4.4 Noise Mitigation at Receptor Properties

In extreme circumstances and where the Contractor's predictions, or actual sound level measurements, indicate that for occupied dwellings the noise limits set out in Section 4.3 will be exceeded for more than 10 out of any 15 consecutive working days, even after the Contractor has exhausted all Best Practicable Means (BPM), the Contractor will install appropriate mitigation measures as specified in BS 5228:2009 part 1. (Best Practicable Means are defined in Section 72 of the Control of Pollution Act 1974 as those measures which are "reasonably practicable having regard among other things to local conditions and circumstances, to the current state of technical knowledge and to financial implications").

Where these measures comprise noise insulation, this is to be in accordance with the specification contained in Schedule 1 of the Noise Insulation (Railways and Other Guided Transport Systems) Regulations 1996 (as amended 1998).

4.5 Noise Control

Without prejudice to Clauses 4.1 to 4.4 above, the Contractor is to comply with the recommendations set out in BS 5228-1 2009 "Code of practice for noise and vibration control on construction and open sites (Noise)" and BS 5228-2: 2009 "Code of practice for noise and vibration control on construction and open sites (Vibration)".

All equipment is to be operated, sited and maintained so that disturbance to people living or working in the immediate vicinity is minimised. In particular, all items of machinery powered by internal combustion engines must be properly silenced and/or fitted with effective and well maintained mufflers in accordance with the manufacturer's instructions. Where reasonable practicable, construction vehicles with reverse alarms will not be used outside the standard hours of work described above, and equipment or vehicles will be throttled down or shut down when not in use and not used unnecessarily.

Where practicable, inherently quiet plant will be selected. Machines in intermittent use to be shut down in the intervening periods between work or throttled down to a minimum. All ancillary plant such as generators, compressors and pumps as far as practicable to be positioned so as to cause minimum possible noise disturbance. If necessary, acoustic barriers or enclosures to be provided as far as practicable.

Any items to be loaded and unloaded, or placed into position carefully and not dropped, thereby minimising the levels of noise generated as far as practicable. Good working practices can potentially significantly influence construction noise levels in practice, for example, BS 5228 states that up to 15 dB reduction can be achieved by not dropping materials from excessive height.

No employees, subcontractors and persons employed on the site to cause unnecessary noise from their activities e.g. excessive 'revving' of vehicle engines, music from radios, amplified music, shouting and general behaviour etc.

Local residents will be advised in writing of the reason for, extent and duration of the works and contact details for enquiries and to report disturbance will be provided.

In addition, the Contractor will be required to apply for 'Prior Consent' under Section 61 of the Control of Pollution Act 1974. This process enables the management of noise and vibration using 'best practicable means'. This would include provision of hours of work, methodology, programme, details of plant (including sound power levels), predicted noise and vibration levels and mitigation measures proposed.

5 Vibration

5.1 Vibration - general

The Contractor is to have a general duty to minimise the disturbance caused by vibration from construction activities. The Contractor is to ensure that measures are taken to:

1. protect residents and users of buildings close by from disturbance or harm; and
2. protect buildings from physical damage.

To protect residents and users of buildings from disturbance and harm the Contractor is not to, as far as practicable, exceed Vibration Dose Values as specified in BS6472-1: 2008 "Guide to evaluation of human exposure to vibration in buildings (Vibration sources other than blasting)" which would result in a "low probability of adverse comment".

To protect buildings from physical damage, peak particle velocity levels are not to exceed 5mm/sec except for particularly sensitive buildings where the level is not to exceed 3mm/sec.

5.2 Vibration - Percussive/Driven Piling

Where such piling is required in the vicinity of sensitive buildings or structures the Contractor is to consult and liaise with the Local Authority and is to in good time submit a Section 61 Application in order to establish the maximum permissible levels of vibration. The Section 61 consent is to also specify the system for monitoring of vibration levels where necessary. Information on the vibration level policies of the Local Authorities, where they exist, should be included for in the relevant Site Specific sections in Part 2 of the CoCP.

6 Dust and Air Pollution

6.1 Dust

The Contractor is to take all reasonable measures to keep dust to within acceptable levels during the Construction Works. Such measures are to include, but not be limited to:

- General
 - a. the provision of easily-cleaned hard standing for vehicles;
 - b. the enclosure of loose material stockpiles at all times and damping down of dusty materials using water
 - c. sprays during dry and windy weather;
 - d. hard surfacing of heavily-used areas is to be kept clean by wet brushing and regular water spraying;
 - e. control of cutting or grinding of material on Site by water suppression to cutting and grinding machines,
 - f. to minimise or mitigate dust;
 - g. complete sheeting of sides and tops of all vehicles carrying spoil and other dusty material;
 - h. watering of unpaved surfaces and roads, and
 - i. limitation of vehicle speeds on unpaved surfaces to 20kph.
 - j. Storage of cement and other dust generating materials in silos with appropriate filters and overflow alarms or storage bags.
 - k. When the contents of vehicles carrying materials which may be dusty are tipped on site, the materials
 - l. shall be subject to water spray during the tipping process, where deemed necessary and agreed by the
 - m. Contractor and Local Authority. However, water must not be deposited on the highway when sub-zero
 - n. temperatures are anticipated.
 - o. develop and implement a stakeholder communications plan that includes community engagement before work commences on site;
 - p. display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary;
 - q. display head or regional office contact information;
 - r. make complaints log available to local authority when asked;
 - s. record any exceptional incidents that cause dust and/or air emissions, either on- or off-site, and the action taken to resolve the situation in the log book;
 - t. plan site layout so that machinery and dust causing activities are away from receptors, as far as is possible;
 - u. erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. Keep clean using wet methods;
 - v. avoid site run off of water or mud;
 - w. keep site fencing, barriers and scaffolding (where used) clean using wet methods;
 - x. 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;
 - y. no idling vehicles;

- z. produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.
- Demolition
 - a. soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust);
 - b. ensure effective water suppression is used during demolition operations; and
 - c. bag and remove any biological debris or damp down such material before demolition.
- Earthworks
 - a. re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
 - b. use hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and
 - c. only remove the cover in small areas during work and not all at once.
- Construction
 - a. avoid scabbling (roughening of concrete surfaces) if possible;
 - b. 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; and
 - c. ensure bulk cement and other fine powder materials are delivered in enclosed tankers and stored in solos with suitable emission control systems to prevent escape of material and overfilling during delivery.
- Track out
 - a. 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;
 - b. avoid dry sweeping of large areas;
 - c. ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport;
 - d. record all inspections of haul routes and any subsequent action in a site log book;
 - e. implement a wheel washing system where reasonably practicable; and
 - f. access gates to be located at least 10m from sensitive receptors where possible.

The Contractor is to agree, in writing, action levels for dust pollution with the Local Authority. The Contractor is to monitor the level of dust pollution using an objective method of measurement. In the event that the action levels are exceeded, the Contractor is to implement such further reasonable measures as are necessary to bring the levels of dust below the levels agreed with the Local Authority.

6.2 Air Pollution

The Contractor is to comply with the provisions of the Environmental Protection Act 1990, Environment Act 1995, the Clean Air Act 1993, the Pollution Prevention Control Act 1999, the Pollution Prevention Control (England and Wales) Regulations 2000, and the Health and Safety at Work Act 1974.

The Contractor is to comply with the Control of Substances Hazardous to Health Regulations 2002 and comply with Health and Safety Executive Guidance Note EH 40 (2011) on Occupational Exposure Limits.

The Contractor is to also comply with the Control of Lead at Work Regulations 2002.

The Contractor is to take precautions to limit smoke emissions or fumes from Site plant or stored fuel. Plant is to be well maintained and measures are to be taken to ensure that it is not left running for long periods when not directly in use.

No materials, of any kind, will be burned on site. Also see Section 11.

7 Disposal of Waste and Contaminated Materials

7.1 Waste

The Contractor should note that the Local Authorities encourage sustainability and recycling of materials wherever possible, suitable and practicable. Discussion with the relevant Local Authority should be carried out as early as possible in the process with regard to recycling and identification and treatment of potentially contaminated materials.

The Contractor is to take precautions and develop a management plan which is to:

1. define responsibility for waste management to a named individual;
2. provide clear information on Site waste management, including disposal routes and licensing requirements;
3. identify, quantify and categorise the various types of waste likely to arise from the Construction of the scheme;
4. identify waste minimisation measures;
5. identify which materials are to be segregated on Site for re-use or recycling; and
6. describe facilities for the collection of data.

The plan is also to be developed in accordance with the principles of the Reduce - Re-use - Recover (i.e. recycling, composting, energy production) - disposal waste hierarchy outlined in the UK Waste Strategy, 2000. Where necessary, the plan is to outline what is required to fulfil the waste minimisation procedure, including for example, the provision of skips, designated for the collection of different materials. The plan should also be developed in accordance with the Waste management Plan for England 2013, published by DEFRA.

The plan is to include an audit programme to be undertaken by the Contractor to demonstrate compliance with the statutory requirements.

Waste arising from the Works which is classed as acceptable fill is wherever practicable to be used in Construction

The disposal of waste, including any surplus spoil, is to be managed so far as is reasonably practicable to contribute towards the environmental and development benefits arising from the use of surplus material and reduce any adverse environmental effects of disposal.

The Contractor is to comply with approved guidance and procedure on the identification, handling, storage, recovery and dispersal of waste. The Contractor is also to comply with the measures set out in Section 3 of this CoCP concerning discharges to controlled waters and waste water.

The Contractor shall make provision for a suitable environmental specialist to identify any Hazardous Waste as defined in the Hazardous Waste (England and Wales) Regulations 2005 (as amended) so that it can be suitably managed, treated and disposed of during the Works. Hazardous Waste is defined in Part 2 of the above referenced Regulations.

7.2 Contaminated Land and Materials

The Contractor will utilise the risk based approach for identifying and remediating contaminated land put forward by the Environment Agency in their document "Contaminated Land Report 11 - Model Procedures for the Management of Contaminated Land", internet download available free of charge from www.environment-agency.gov.uk, published by the Environment Agency.. Additional reference information is given in **Appendix C**.

Before the development commences a desktop study and Site investigation is to be carried out with respect to land affected by the Works (including land that has already been remediated) in order to identify all potential contaminants, pathways and receptors and other relevant characteristics of the site and its setting.

It should be noted that WMCA has obtained significant ground investigation information in developing the scheme, reports and location drawings, which will be produced for the Owner's Brief. This information should be reviewed as necessary and used as the starting point for any further site investigation deemed necessary.

A contaminated land assessment report and management plan is to be prepared by a reputable consultant, and approved by the Local Authority, pursuant to the draft planning condition contained within the request for a Planning Direction. This is to identify any necessary measures to render the land fit for the intended purpose and long term measures that are necessary with respect to contamination remaining on the Sites. These measures are to be implemented by the Contractor.

The contaminated land assessment report and management plan is to be developed in consultation with and submitted to the Local Authority.

Any contaminated material encountered is to be dealt with in compliance with best practice, statutory guidance and Local Authority requirements and, if necessary, disposed of at Sites possessing a valid waste management licence.

The Contractor is to identify those areas within the Site where contaminated land may be encountered and is to be required to:

1. carry out appropriate Site investigation to the satisfaction of the Local Authority to determine the extent and type of contamination;
2. carry out risk assessment evaluations to consider potential sources, pathways and receptors;
3. liaise with the Local Authority and the Environment Agency with a view to addressing their reasonable requirements and agreeing control or protection measures for dealing with contaminants identified by the risk assessment evaluation;
4. develop transport and other management procedures to be followed in the event that contaminated or hazardous materials are discovered on Site;
5. obtain any necessary license for the storage, treatment and disposal of waste (including dewatering discharge);

6. use registered waste carriers or seek registration as a waste carrier for the handling of all wastes, including contaminated materials; and
7. ensure that removal and disposal of contaminated materials complies with a strict consignment note system and that delivery is to appropriate licensed disposal facilities.

Appropriate precautions must be taken if materials containing asbestos are encountered. The Contractor is to comply with the Control of Asbestos Regulations 2012, and is to observe the exposure limits and measurement for asbestos which are set out in HSE Guidance Notes HSG248 (2005): Asbestos – The analysts' guide for sampling, analysis and clearance procedures and HSE Guidance Notes HSG247 (2006): Asbestos - The licensed contractors guide. The Contractor is to comply with all current HSE approved guidance and codes of practice relevant to the Works being undertaken.

If materials containing lead are encountered, the Contractor is to comply with The Control of Lead at Work Regulations 2002.

In undertaking work on contaminated Sites useful information concerning the safe operation and redevelopment of contaminated Sites may be found in HSG 66 HSE Protection of Workers and the General Public during the Development of Contaminated Land 1991.

In the case where identified contaminated material has to go off site to a licensed tip, and where its source, pathway and receptor can be accurately identified, the Contractor should consider the merits of applying for HM Customs and Excise Landfill Tax Exemption.

8 Urban Ecology

8.1 Wildlife Legislation

The Contractor is to comply with the provisions of the Wildlife and Countryside Act 1981 (as amended), Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (The Habitats Directive 2010, (as amended)), Countryside and Rights of Way Act 2000 and any other relevant nature conservation legislation.

8.2 Wildlife Areas

Dust and air pollution must be controlled as set out in section 6 above, to protect adjoining wildlife.

Suitable precautions are to be taken to prevent entry of pollutants into any bodies of water, especially to the River Rea and the Grand Union Canal. Lighting design and use must avoid unnecessary light spill on the River Rea or Grand Union Canal and other notable habitats or protected species, and will only be used where necessary.

8.3 Trees

Loss of trees is to be avoided where reasonably possible. Works on or adjacent to trees are to comply with BS3998: 2010 "Tree work: Recommendations" and BS 5837: 2012 "Trees in relation to design, demolition and construction".

Adverse effects on all trees within the working corridor, whether statutorily protected or not are to be minimised by the adoption of suitable mitigation, including, but not limited to:

1. selective removal of branches in accordance with the relevant British Standard;
2. use of matting around the root to prevent excess soil compaction;
3. use of suitable protection around the trunk to prevent any damage;
4. hand excavation in the vicinity of roots of trees to be retained to avoid unnecessary damage to roots;
5. construction activity around the tree is to be controlled to minimise compaction of the ground beneath the entire canopy of the tree. No heavy materials, Site cabins or plant are to be stored or Construction traffic movements made under the canopy of the tree.

Trees are defined, for the purpose of this CoCP as trees of over 20cm girth at a height of 1.5 metres above ground level.

The following BS standards are relevant to the protection of trees:

- BS 3936 - 1:1992 Nursery stock. Specification for trees and shrubs
- BS 3998: 2010 Tree work: Recommendations
- BS 4043:1989 Recommendations for transplanting root-balled trees
- BS 4428:1989 Code of practice for general landscape operations (excluding hard surfaces)
- BS 5837: 2012 Trees in relation to design, demolition and construction

8.4 Vegetation Clearance & Building Demolition/Refurbishment

All vegetation clearance, building demolition/refurbishment will be undertaken, as far as practical outside of the breeding bird season i.e. undertaken between October and February inclusive. Where this is not possible, vegetation and buildings would be checked for breeding birds by a qualified ecologist prior to any potential disturbance.

In the event that a nest is located within the working area, an exclusion zone, which is species specific and should be agreed with a qualified ecologist, would need to be set up so that nests are not disturbed until chicks have fledged. This zone could be larger for species listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); although this is considered unlikely as no Schedule 1 species are anticipated to be present on the site of the BEE, as set out in the Environmental Statement.

8.5 Retained grassland, scrub & shrubs

Any areas of grassland, scrub and shrubs that are being retained will be protected from potential damage by construction activities. Demarcation fencing would be a suitable method of protection.

8.6 Lighting

Working at night will be avoided as far as practicable, but where essential, mitigation would be in place to minimise potential effects of unnecessary light spill. To limit disturbance to foraging and commuting bats and nesting birds construction lighting would need to be kept to a minimum required for health, safety and security purposes, and be directional task specific lighting.

9 Archaeology

9.1 Archaeological Features

Any features of archaeological importance and the process of archaeological surveying are to be dealt with by a written scheme of investigation prepared and submitted by the Contractor for the reasonable approval of the Local Authority as part of the Planning Direction.

Any movement of buried remains must be carried out in accordance with the provisions of the Order. It is expected that the affected area will be subject to full archaeological excavation. In the area of the Park Street Burial Ground the burials (supine skeletons) will need to be removed and reburied in a suitable graveyard.

Areas where a watching brief will be required are to be identified in the written scheme of investigation and appropriate measures identified should significant archaeological remains be found.

There will be additional archaeological surveys and/or archaeological Strip, Map and Sample/Archaeological Excavation carried out during the construction stage of the BEE at:

- Park Street Gardens;
- Meriden Street/Digbeth High Street; and
- High Street Deritend.

The grave cuts/archaeological features will be mapped, investigated and recorded. Once the excavation of the area has been completed it can then be handed back for development to proceed. Reporting and archiving will follow to allow the discharge of the planning condition.

Archaeological evaluation (test pitting) along Digbeth/ High Street Deritend will be undertaken. The results of the survey will be used during detailed design to avoid impacting significant archaeological features or deposits. The specifications for these investigations will be agreed with the Local Authority as part of the overall scheme of archaeological investigation described above.

Any archaeological works carried out are to be performed by a suitably qualified body/person.

9.2 Listed Buildings

The Contractor is to comply with the requirements of the relevant legislation in respect of listed buildings and in particular, the Planning (Listed Buildings and Conservation Area) Act 1990.

There will be protective measures such as ground treatment around and beneath the building for historic and listed buildings where there is a predicted risk of +/-20mm ground settlement. A level survey will be undertaken of the buildings closest to the construction of the BEE in order to detect any ground settlement issues. Generally, construction phase monitoring will consist of precise surveying of studs or targets installed on the outside of the building or inside subsurface structures. Occasionally, dependent on

structure size and extent of settlement, precise levelling will take place inside structures. Other forms of monitoring may also be employed, which will be determined on a case by case basis.

10 Site Boundaries / Hoardings

10.1 Fencing and Hoardings

The Contractor is to agree in writing with the Local Authority in advance a scheme of temporary boundary treatment during Site clearance, demolition and Construction.

The acceptable forms of boundary treatment may include;

1. post and chain link/weldmesh for minimum security;
a 2.4m minimum height plywood fenced timber framed, painted boundary hoarding, of a surface density of not less than 6Kg/m² for normal security and noise limitation;
2. other designs where a particular appearance or acoustic rating is needed.

Appropriate lighting shall be provided where construction fencings or hoardings cause walkways to be poorly lit.

Gates in the fencing or hoarding are, as far as is practicable, to be positioned and constructed to minimise the noise transmitted to nearby noise sensitive buildings from the Site direct or from plant entering or leaving the Site.

There is to be provided at each enclosed work Site an information board detailing information on the Site programme and estimated duration of the Works, together with telephone contacts (including an emergency telephone number) for use by members of the public who wish to lodge complaints or comments.

10.2 Security

Adequate security is to be exercised by the Contractor to prevent unauthorised access to Site areas off the highway and gates are to be closed and locked when not in use. Implications for the security of adjacent frontages must be considered.

Security cameras, where used, are not to be directly pointed at non-Construction areas, unless reasonably required to do so for security purposes. In any case the provisions of the Data Protection Act should be complied with.

10.3 Access for Fire Appliances

West Midlands Fire Brigade is to be consulted on the layout and provision of Site access and their reasonable requirements are to be incorporated into Site access arrangements.

11 Site Activities

11.1 Good Housekeeping

The Contractor is to follow a "good housekeeping" policy at all times. This is to include, but not necessarily be limited to, the following requirements:

1. open fires are to be prohibited at all times;
2. rubbish is to be removed at frequent intervals and the Site kept clean and tidy;
3. hoardings are to be frequently inspected, repaired and re-painted as necessary;
4. adequate toilet facilities are to be provided for all Site staff and kept clean;
5. the wheel washing facilities are to be brushed clean frequently.

All lorries entering and exiting the Site are to do so in a forward direction wherever possible. Where reversing is essential, it is to be carried out under the supervision of a banksman. Entry/exit conditions are to be subject to prior discussion with the Local Authority. All loading and unloading of vehicles is to take place off the public highway wherever practicable.

11.2 Site Clearance

The Contractor is to clear up all working areas both within the Site and accesses as work proceeds and when no longer required for the carrying out the Works.

All surplus soil and materials, temporary roads, hard standing, plant, sheds, offices and temporary hoarding/fencing are to be removed, post holes filled and the surface of the ground restored as near as practicable to its original condition.

11.3 Pest Control

The Contractor is to ensure that risk of infestation by pests or vermin is minimised by adequate arrangements for the disposal of food waste or other waste material attractive to pests. If infestation occurs action is to be taken as required by the Local Authority Environmental Health Officer.

11.4 Use of Existing Structures

The Contractor is not to locate stockpiles for materials, stores, plant or temporary Works upon or adjacent to existing structures such as bridges, viaducts, towpaths, walls and embankments in such a way as to damage these structures.

12 Safety

12.1 Emergency Contacts and Procedures

The Contractor is to prepare and maintain an Emergency Contacts Set of Procedures for each work Site which is to be displayed prominently at each Site.

Copies of the procedures are to be issued to the Local Authorities, Fire, Police and Ambulance Services and any other statutory body if appropriate. The procedures should detail all emergency contact telephone phone numbers for the Local Authorities, Fire, Police and Ambulance Services and other statutory bodies identified.

12.2 Health and Safety at Work Act 1974

All Sites and activities are to comply with the Act and associated regulations including the Construction (Design and Management) Regulations 2015.

12.3 Crane Arcs

Cranes arcs are to be confined within the Site boundaries if practicable to do so. Any arcs that might affect neighbouring properties are to only do so with the owner's permission, and with the written permission of the Local Authority if affecting any public highway. Any permission required is to be obtained prior to erection and operation of the crane. In all cases a suitably trained banksman will be required.

12.4 Unexploded Bombs

The construction area is thought to be an area of high risk of unexploded ordnance. The attention of the Contractor is drawn to the fact that in the event of any undisturbed bombs being discovered, the Police are to be informed immediately and workers are to be made aware of any such presence whilst undertaking work at the Site.

13 Lighting

Lighting to Site boundaries is to be provided with illumination sufficient for the safety of passing public, including disabled people. Precautions are to be taken to avoid shadows being cast on surrounding footpaths and roads.

Site lighting is to be positioned and directed so as to minimise annoyance to residents and businesses and to prevent distraction or confusion to passing motorists.

Lighting will avoid light spill onto areas of notable wildlife habitats including the River Rea and the Grand Union Canal. Task specific and directional lighting will be used that will avoid unnecessary light spill outside of the locations required, whilst adhering to all Health and Safety regulations.

14 Protection of Existing Installations

14.1 Information

The Contractor is required to make his own investigations and to take all appropriate action concerning existing foundations, buildings, structures, walls, roadways, railways, pipes, sewers, cables and other services, apparatus and installations.

The Contractor should consult with the Local Authority in advance to establish the status of any sensitive structures affected by the Works by reference to the relevant register kept by the Local Authority.

14.2 Safeguarding

The Contractor is to properly safeguard all foundations, buildings, structures, walls, roadways, railways, pipes, sewers, cables and other services, apparatus and installations from harm or deterioration during the Construction period and take all measures required for their support and protection during the Construction period.

14.3 Electro Magnetic Compatibility (EMC)

During construction the Contractor is likely to employ the use of mobile radio systems for communications purposes. The contractor will use either a licensed band radio system or a low power unlicensed system to minimise potential EMC effects. Equipment EMC performance is covered by the Radio Equipment Directive (RED), 2014/53/EU.

The contractors will use heavy construction and plant equipment. EMC issues for such equipment are addressed under the Machinery Directive (2006/42/EC).

Arc welding may be performed on the construction site and can lead to localised high energy electromagnetic affects. Welding equipment will be required to comply with the EMC Directive (2014/30/EU). All metal work should be pre-fabricated off site where possible. Any welding required on site should be performed using gas welding equipment.

14.4 Schedule of Public Authorities & Statutory Undertakers

A Schedule of Public Authorities & Statutory Undertakers is given in **Appendix B** for information only. Whilst the information is believed to be current at the time of writing, it is the responsibility of the Contractor to correctly identify and contact all relevant Public Authorities & Statutory Undertakers.

15 Liaison with Local Authority and the Public

15.1 Liaison Manager

The MMA will appoint a liaison manager to manage public relations, public information issues and press relations matters. The liaison manager will be responsible for jointly managing communications to these audiences and with the agreement of the Highway Authority.

15.2 Public Relations

The MMA, through the liaison manager, is to produce a communications plan. WMCA, in consultation with the Traffic Manager, will clear all media announcements by the Contractor prior to issuing.

The Contractor is expected to be considerate of those directly affected by the Works and will provide timely information of the Works in advance by whichever media is deemed suitable to minimise the effects of the disturbance and allow others to make alternative arrangements if necessary. The ways in which this information is disseminated should be captured and agreed in the communications plan.

The liaison manager will establish flexible procedures, through the communications plan, for giving advance notification of, and information concerning, all main Site activities relating to this Code to the Local Authorities, the Police, the Fire Brigade, other interested bodies and the public. Such information is to include, but not be limited to, any alterations or changes to working hours and locations that have been agreed between the Contractor, the Local Authority and affected frontagers. Information must be supplied in good time to allow affected parties to make alternative arrangements e.g. bus companies to register alternative routes. Further guidance on the anticipated communications plan will form part of the Owner's Brief.

15.3 Public Complaints

The MMA through the liaison manager is to introduce a system for the recording of all complaints which are to be collated and responded to by them within reasonable timescales and copies made available to the Local Authority. The Contractor through the liaison manager is to be proactive in reducing complaints.

15.4 Construction Staff

The Contractor is to ensure that all Construction staff are easily identifiable to the public by use of identity cards or an equally effective system.

The Contractor is to ensure that staff engaged in construction activities do not utilise Birmingham City Council owned or operated car parks inside of the Ring Road (A4150) for the parking of private or works vehicles.

15.5 Health and Safety File (CDM Regulations 2015)

A pre-construction information pack will be produced for the Owner's Brief. The Contractor shall make suitable provisions to retain and update the pack during the term of the works. The Contractor will be obliged to offer up information contained within the pack on the request of the Local Authorities, or their agents in the case where future planned construction works might impact on existing Metro infrastructure. Any changes should be added to the pack by the organisation carrying out the change and the Contractor informed accordingly of said change.

At the end of the Construction period a health and safety file will be created and stored by the MMA for future safe keeping.

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Appendix A. Abbreviations

A.1 General

The abbreviations below have been used throughout the Construction Code of Practice.

CoCP - Construction Code of Practice

A.2 Technical Abbreviations (Noise)

LAeq - the equivalent continuous sound level (A-weighted).

This is defined as the level of notional steady sound which, at a location and over a defined period of time, would have the same A-weighted acoustic energy as the fluctuating noise.

LAm_{ax} - the peak or maximum A-weighted noise level over a given period of time

dB(A) - decibel units (A-weighted)

(A-weighted) - the noise level with a frequency characteristic approximating to that of the human ear.

Appendix B. Schedule of Public Authorities and Statutory Undertakers

Table B.1: Public Authorities and Statutory Undertakers

Company / Organisation	Contact
Birmingham City Council Lancaster House 1 Lancaster Circus Queensway Birmingham West Midlands B4 7DQ	Anne Shaw Assistant Director – Transport and Connectivity 0121 303 6644
Canal and River Trust First Floor North, Station House 500 Elder Gate Milton Keynes MK9 1BB	Customer.services@canalrivertrust.org.uk
BSKB Sky Network Services NRSWA Department 70 Buckingham Avenue SLOUGH SL1 4PN	nrswa@bskyb.com
BT Open Reach PP2.35E Midland ATE 60 Station Street Birmingham B5 4AL	Paul Nix paul.nix@openreach.co.uk
BT Payphones BT Payphones Field Officer – Midlands & Wales PP HWF 339 P.O. Box 200 London N18 1ZF	Christine Platt 07889 453029 Christine.platt@bt.com
Geo Networks Ltd 4th Floor Harmsworth House 13-15 Bouverie Street London EC4Y 8DP	John Kelly (BT) 020 3326 9500
Western Power Distribution Toll End Road Tipton West Midlands DY4 0HH	Ray Smith 0121 224 4230

Company / Organisation	Contact
West Midlands Combined Authority 16 Summer Lane Birmingham B19 3SD Strategic Asset Manager	Adrian Shortland 0121 200 2787
Area Manager - Transport Operations Birmingham and Solihull	Jon Hayes 0121 200 2787
COLT Telecommunications St Stephen's Street Zone 2B - Central Gate New Town Birmingham B6 4RG	John Richardson 07968 798945
Environment Agency Midlands Regional Office Sapphire East 550 Streetsbrook Road Solihull West Midlands B91 1QT	enquiries@environment-agency.gov.uk 03708 506 506
Virgin Media Eagle Court Sheldon Birmingham B26 3RZ	Neil Bayes Neil.bayes@virginmedia.co.uk
Level 3 Communications 7th Floor, 10 Fleet Place London EC4M 7RB	europe@level3.com
Office of Rail and Road One Kemble Street London WC2B 4AN	dutytocooperate@orr.gsi.gov.uk
Verizon UK Ltd First Touch Telecommunications Basingstoke Road Reading RG2 6DA	

Company / Organisation	Contact
Hutchison 3G UK Limited Great Brighams Mead Vastern Road Reading Berks RG1 8DJ	
In Focus Public Network Ltd Waverley Lodge Weston Lane Bubbenhall Coventry CV8 3BN	Derek Parkin derek@infocupublicnetworks.co.uk
Severn Trent Water (Sewers) One Supply Chain West Lamledge Lane Shifinal Telford TF11 8SD	John O'Leary 07789 903281
Severn Trent Water (Clean Water) One Supply Chain West Lamledge Lane Shifinal Telford TF11 8SD	Chris Edge 0770 371 8001
T-Mobile Ltd Units 8/9 Maidwell Drive Highlands Industrial Estate Solihull Birmingham B90 4QN	Jon Chown 0121 623 1589
National Grid West Midlands Office Stafford Road Wolverhampton WV10 6HZ	Dave Hartshorne 01902 826079
Royal Mail Royal Mail Birmingham Mail Centre St Stephens Street Aston Birmingham B6 4AA	Shane Rees Plant Collections Planning Manager 07841 015270shane.rees@royalmail.com

Company / Organisation	Contact
Vodafone Ltd Bell House 2 The Connection Newbury Berkshire RG14 2FN	Mark Lloyd 07803 259 833
West Midlands Ambulance Service Central Hub Manager Birmingham Division Henrietta Street Ambulance Station	Keith Nevitt keith.nevitt@wmas.nhs.uk
West Midlands Fire Service Headquarters 99 Vauxhall Road Birmingham B7 4HW	Eddie Sammons Eddie.Sammons@wmfs.net
West Midlands Police Police Headquarters Lloyd House Colmore Circus Birmingham B4 6NQ	Abdool Rohomon a.rohomon@west-midlands.pnn.police.uk
Network Rail The Mail Box 100 Wharfside Birmingham B1 1RT	Richard Draper 0121 345 3203 Richard.Draper@networkrail.co.uk
National Express Midland Metro Metro Centre Potters Lane Wednesbury WS10 0AR	Ben Ackroyd 0121 254 7272
National Express (Coach Station) Birmingham Coach Station Mill Lane Birmingham B5 6DD	Charlotte Ritchie 08450 130 130, option 4
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Appendix C. Relevant British Standards and Guidelines

C.1 General

In addition to compliance with all legal requirements applicable at the time for the Construction Works and compliance with certain British Standards referred to in the Code, the following British Standards and guidelines issued by various statutory bodies must be complied with. This is not an exhaustive list.

C.2 British Standards Institution

- BS 5228-1: 2009 (and amendment 2014) Code of practice for noise and vibration control on construction and open sites (Noise).
- BS 5228-2: 2009 (and amendment 2014) Code of practice for noise and vibration control on construction and open sites (Vibration).
- BS 6031: 2009 Code of practice for earthworks.
- BS 5930: 2015 Code of practice for ground investigations.
- BS 6472-1: 2008 Guide to evaluation of human exposure to vibration in buildings (Vibration sources other than blasting).
- BS ISO 4866: 2010 Mechanical vibration and shock: Vibration of fixed structures: Guidelines for the measurement of vibrations and evaluation of their effects on structures.
- BS 7385-2: 1993 Evaluation and measurement for vibration in buildings: Guide to damage levels from ground-borne vibration.
- BS 7580: 1997 Specification for the verification of sound level meters
 - Part 1 Comprehensive Procedure
 - Part 2 Shortened Procedure for Type 2 Sound Level Meters
- BS 10175: 2011 (and amendment 2013) Investigation of potentially contaminated sites - code of practice.
- BS 8576: 2013 Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs).
- BS 8485: 2015 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings

C.3 Health and Safety Executive

- HSE Guidance Notes HSG 150 (2006) - Health and safety in construction work.
- HSE Guidance Notes HSG248 (2005) - Asbestos: The analysts' guide for sampling, analysis and clearance procedures.
- HSE Guidance Notes HSG47 (2014) - Avoiding danger from underground services.
- HSE Guidance Notes EH 40 (2011) – Occupational exposure limits.
- HSE Guidance Notes HSG247 (2006) – Asbestos: The licensed contractors guide.
- HSE Guidance Note L143 (2013) – Managing and Working with Asbestos.

C.4 Environment Agency Pollution Prevention Guidelines (PPG)

Whilst these documents have been officially withdrawn, they are included below for guidance on best practice. The Contractor will be required to adhere to these guidelines.

- PPG1 - General guide to the prevention of pollution
- PPG2 - Above ground oil storage tanks.
- PPG3 - The use and design of oil separators in surface water drainage systems.
- PPG4 – Treatment and disposal of sewage where no foul sewer is available.
- PPG5 – Works and maintenance in or near water.
- PPG6 - Working at demolition and construction sites.
- PPG7 - The safe operation of refuelling facilities.
- PPG8 - Safe storage and disposal of used oils.
- PPG10 - Highway depots.
- PPG11 – Preventing pollution on Industrial Sites.
- PPG13 - Vehicle washing and cleaning.
- PPG18 - Managing fire fighting and major spillages
- PPG19 - Garages and vehicle service centres.
- PPG20 - Dewatering of underground ducts and chambers
- PPG21 – Incident response planning
- PPG22 - Dealing with spills.
- PPG23 – Maintenance of structures over water
- PPG26 – Drums and intermediate bulk containers

C.5 National Planning Policies

- Department for Communities & Local Government (2012) National Planning Policy Framework.

C.6 Department for the Environment, Food and Rural Affairs Guidance

- DoE/Defra Contaminated Land Research Reports (CLR), 1 – 11 various authors 1994 - 2003 DoE A Guide to Risk Assessment and Risk Management for Environmental Protection (1995).
- DoE Waste Management Papers.
- Environment Protection Act 1990 Section 34 Waste Management, The Duty of Care, A Code of Practice (1996).
- DoE Industry Profile Series
- Traffic Signs Manual (2006).
- DCMS Circular 14/97.

C.7 Guidance on Contaminated Land

- ICE Site Investigation Steering Group: Site Investigation in Construction Sites, Vol. 4 *Guidelines on the Safe Investigation by drilling of landfills and contaminated land* (1993).
- ICE UK Specification for Ground Investigation (2011).
- CIRIA, Remedial treatment of contaminated land Series: SP101 to SP112;
- CIRIA (1995).
- CIRIA Report C552, Contaminated Land Risk Assessment. A Guide to Good Practice (2001).

- CIRIA Report C665, Assessing risks posed by hazardous ground gases to buildings (2007).
- CIRIA Report R132, A Guide to Safe Working on Contaminated Sites (1996).
- Environment Agency Contaminated Land Report 11 - Model Procedures for the Management of Contaminated Land.
- Environment Agency - Guiding principles for land contamination GLPC1 to GLPC 3 (2010).
- Environment Agency - Groundwater protection: Principles and practice (GP3)

C.8 Guidance on Trees

- BS 5837: 2012 - Trees in relation to design, demolition and construction
- BS 3998: 2010 Tree work: Recommendations.
- BS 4428: 1989 - Code of practice for general landscape operations (excluding hard surfaces).
- BS 3936-1:1992 - Nursery stock. Specification for trees and shrubs
- National Joint Utilities Group (NJUG) Publication 10: Guidelines for the Planning, Installation and Maintenance of Utility Services in Proximity to Trees, 1995.
- Tree Roots, Leaflet No. 6, The Arboricultural Association.

C.9 Other Guidance

- CIRIA Report C762, Environmental good practice on site (2016).
- CIRIA Report C532, Control of water pollution from construction sites (2001).
- CIRIA Report C648, Control of water pollution from linear construction projects: technical guidance (2006).
- CIRIA Report C649, Control of water pollution from linear construction projects: site guide (2006).