

The Ashton Vale to Temple Meads and Bristol City Centre Rapid Transit Order
Draft Code of Construction Practice

(A) Introduction

The Code of Construction Practice has been developed in liaison with the relevant local authorities and covers specific legislative requirements as well as general requirements and compliance with British Standards referred to in parts C and D of this Code.

The purpose of the Code of Construction Practice is to cover environmental and safety aspects affecting the interests of local residents, businesses, and the general public in the vicinity of the construction works, and it will apply throughout the whole period of the construction works.

The Code will be included in the Contract for the construction of the Ashton Vale to Temple Meads and Bristol City Centre Rapid Transit scheme (“the rapid transit scheme”). The Contractor, his servants, agents and employees will have an obligation imposed upon them to comply in full with the terms of the Code of Construction Practice. Otherwise the Contract may be liable to determination. The Code will also form part of the Planning Conditions for the rapid transit scheme. The Contractor will be given a reasonable period of time to rectify any breaches of the Code of Construction Practice, but should these not be rectified within that time the promoter of the rapid transit scheme, as the Employer under the Contract, may make arrangements for a third party to carry out the necessary works to rectify the breaches.

(B) Applicable Acts of Parliament/Regulations

There are currently in existence numerous Acts of Parliament and statutory regulations covering environmental and safety matters and rather than list all of these separately the Contractor involved in constructing the rapid transit scheme will be required to comply in full with all relevant legislation applicable at the time of construction.

Current examples of relevant legislation are the Health and Safety at Work Etc. Act 1974, Environmental Protection Act 1990, Control of Pollution Act 1974, New Roads and Street Works Act 1991, Construction (Design and Management) Regulations 1996 and the Construction (Health, Safety and Welfare) Regulations 1994.

(C) General Requirements

1 Public/Private Highways

- 1.1 For the purposes of this Section of the Code references to work sites is to the designated worksites in the draft Order including site compounds.
- 1.2 Traffic management proposals shall be agreed with the Highway Authority in advance and shall comply with current legislation and codes of practice. The following requirements will at all times apply to the construction works:
 - 1.2.1 Any temporary footways and ramps on the highway must be surfaced in materials to the satisfaction of the Local Planning Authority and must be accessible by wheelchair users and sight impaired people unless otherwise agreed with the Local Planning Authority.
 - 1.2.2 All openings or obstructions on the carriageway or footway will be barricaded with a continuous rail (lit at night) strong enough to offer necessary resistance should a blind person walk into it; a tapping rail will be provided.
 - 1.2.3 All pedestrian routes diverted onto the carriageway will be clearly defined by continuous barriers, constructed to the requirements of the Local

Planning Authority. The minimum standard is the Chapter 8 requirements appropriate for the situation but enhanced facilities may be required in respect of the following:

- (a) Existing access for the emergency services shall be maintained through or past the site and to all properties and public areas affected by the works.
- (b) There shall be at least one accredited supervisor contactable by phone on site at all times when works are in progress. Accreditation shall be a certificate from an approved assessment centre demonstrating that the person is competent to sign and guard road works.
- (c) Existing pedestrian routes shall be maintained at all times or diverted to a reasonable alternative route.
- (d) Existing bus routes and stops shall be maintained so far as reasonably practicable.

1.2.4 So far as reasonably practicable, all parts of the public highway including drainage systems will at all times be kept free from mud and other loose materials arising from the works. To comply with this the Contractor shall obtain the prior written approval of the Local Planning Authority in respect of the following:

- (a) Provision of vehicle wheel cleaning facilities, adequate provision for drainage via settlement tanks and regular maintenance of settlement tanks, during the working hours specified in Section 2.3 of this Code.
- (b) Provision of a mechanical road sweeper to clean the work sites hoardings and any mud or debris deposited by site vehicles on roads or near work sites, during the working hours specified in Section 2.3 of this Code.
- (c) Provision of facilities and working arrangements to ensure the adequate sheeting and boarding of all materials including spoil either brought onto or taken off the site to prevent material falling off during its journey.

1.2.5 Vehicles entering and leaving each work site will only be allowed to cross footways via a properly constructed crossing the design of which shall be submitted to and approved in writing by the Local Planning Authority prior to construction. Footways must be kept free of mud.

1.2.6 Access, which is deemed to include both the route and entrance to any work sites by vehicles, shall be as agreed in writing by the Local Planning Authority.

1.2.7 All street furniture, trees (unless they are to be removed/lopped) and other features near the construction works shall be carefully protected in accordance with the requirements of the Local Planning Authority. Any damage caused by the Contractor shall be made good within an agreed timetable to the complete satisfaction of the Local Planning Authority.

1.2.8 Any street furniture, trees or other obstructions outside the area to be occupied by the Contractor, which the Contractor requires to remove in order to gain access or for temporary works shall, subject to the prior consent of the owner, be removed by the Contractor and put back if

appropriate on completion of the works. This provision also applies to temporary works.

- 1.2.9 The Contractor shall ascertain and comply with any restrictions in respect of abnormal load routes as they may affect access to work sites.
- 1.2.10 The Contractor will work in such a way as to minimise, so far as reasonably practicable, disruption of existing road traffic.
- 1.2.11 Where any Public Rights of Way to be kept open during construction of the works cross any site where work is being carried out, safe crossing points including appropriate signs and signals shall be approved in writing by the Local Planning Authority.
- 1.2.12 Works shall be carried out so far as reasonably practicable in accordance with the Highway Authority's specification of the number of lanes to be maintained on- and off-peak on each road affected by the works. All works in the carriageway shall, so far as reasonably practicable, be carried out during off-peak hours, namely 09.30-15.30 Monday to Friday.
- 1.2.13 Traffic management shall, if required by the Highway Authority, be provided by a specialist subcontractor approved by the Highway Authority. The Contractor shall nominate a Traffic Safety and Control Officer who must be on site and available whenever works are taking place.
- 1.2.14 The Contractor shall liaise with the public utility companies.
- 1.2.15 The Contractor shall comply with the Local Planning Authority's environmental policies relating to road works and waste management.
- 1.2.16 The works are subject to the Construction (Design & Management) Regulations.
- 1.2.17 The Contractor shall agree with the Local Planning Authority arrangements for notifying near neighbours prior to works.
- 1.2.18 The Contractor shall carry out road safety audits of works affecting the highway in accordance with a timetable agreed with the Highway Authority prior to the commencement of the relevant area of works on the highway.

2 Noise and Hours of Working

- 2.1 The Employer will, where appropriate, prepare predictions of construction noise prior to tenders being invited for the construction works in order to establish achievable noise levels at each specific work site. These predictions will be carried out in accordance with BS 5228 and shall be submitted to the Local Planning Authority together with proposals for the mitigation of impacts for the written approval of the Local Planning Authority prior to the commencement of construction.
- 2.2 Where appropriate, there will be included within the proposed tender documents clearly defined noise criteria which must be complied with by the Contractor. Before construction works start, the Contractor will be required to demonstrate to the Local Planning Authority through appropriate method statements that he will comply with these criteria. If the Contractor fails during the period of the construction works to comply with these criteria the Contractor may face enforcement action from the Local Planning Authority.
- 2.3 To ensure noise mitigation criteria are met, a programme of on-site monitoring by a suitably qualified person will be agreed between the Contractor and the Local Planning Authority. This will include location and frequency of readings and timescales for the

submission of results together with any additional mitigation measures proposed to the Local Planning Authority. Any additional measures agreed by the Local Planning Authority shall be implemented by the Contractor. If the Contractor wishes to change his proposed method of working once the construction works have started, then this must be agreed in writing by the Local Planning Authority. Unless otherwise agreed in writing by the Local Planning Authority the hours of working for the construction works shall be limited to between 08.00 and 18.00 Monday to Friday and 08.00 to 13.00 on Saturday. In exceptional cases limited work on Sundays and Bank Holidays may be undertaken by prior written agreement with the Local Planning Authority. The Contractor may propose additional or alternative working hours for construction reasons or the Employer may require the Contractor to undertake certain construction works outside these hours. Any change to these working hours requires the prior agreement of the Local Planning Authority.

- 2.4 Best practical methods of reducing noise from machinery shall be employed at all times. Silencers and mufflers shall be used where applicable, machinery shall be noise-reduced models, pumps used at night shall be electric served off the mains, and hydraulic rather than pneumatic equipment shall be used where possible.

3 Air Pollution

- 3.1 The Contractor will take all reasonable measures to avoid creating a dust nuisance and will, prior to commencement of any construction work, submit to the Local Planning Authority a method statement for approval setting out the proposed measures to be taken to prevent dust nuisance, and which shall be approved by the Local Planning Authority prior to the commencement of any construction work. Upon commencement of the construction work the contents of the approved statement shall be implemented and complied with throughout the period of the construction work.
- 3.2 Examples of measures to prevent dust nuisance to be included in the Contractor's statement are:
- 3.2.1 Damping down of dusty material using water sprays during dry weather.
 - 3.2.2 The hard surfacing of heavily used areas, which will be kept clean by brushing and water spraying regularly.
 - 3.2.3 All cutting and grinding operations shall be carried out using water-based dust suppression.
 - 3.2.4 The complete sheeting of the bodies of all vehicles carrying spoil and other dusty materials.
 - 3.2.5 During demolition operations, watering at rubble chutes, covering skips and screening of buildings with debris screens/sheets.
 - 3.2.6 No materials shall be burned on site.
- 3.3 The effectiveness of the measures taken will be reviewed at regular intervals by the Employer and Contractor. Any additional measures to be taken shall be approved in writing by the Local Planning Authority prior to implementation.
- 3.4 The Contractor will take all necessary precautions to prevent the occurrence of smoke emissions or fumes from site plant or stored fuel oils for safety reasons and to prevent such emissions or fumes drifting into residential areas, nearby workplaces or areas of public realm. In particular, plant shall be well maintained and measures taken to ensure that it is not left running for long periods when not directly in use.
- 3.5 The Employer will at the request of the Local Planning Authority seek agreements with the Local Planning Authority under the Control of Pollution Act 1974 section 61 on noise limits for work sites and any other relevant issues.

4 Protection of Surface and Groundwater Resources

- 4.1 The Contractor will obtain the appropriate licences from the Environment Agency (EA) for discharges to watercourses or sewers or groundwater in accordance with relevant statutory provisions.
- 4.2 In planning and carrying out any construction works, precautions must be taken to secure the complete protection of watercourses and water in underground strata against pollution. These should include an investigation of past use of the site to ensure that operations will not disturb contaminated land.
- 4.3 If any pollution occurs, then the Contractor shall advise the EA and the Local Planning Authority immediately and take prompt action to minimise the impact and prevent re-occurrence.
- 4.4 A common cause of pollution from sites is through vandalism. Therefore, the Contractor shall ensure that sites are adequately protected by the provision of secure fences and locked accesses where possible and monitoring by personnel where appropriate.
- 4.5 In order to limit pollution from silt, cement and other potentially polluting materials, the Contractor shall ensure the following measures are followed:
 - 4.5.1 The washout from concrete mixing plant, or the cleaning of ready mixed concrete lorries must not be allowed to flow into any drain or watercourse. Any residue shall be removed from the site any either recycled or disposed of at a suitably licensed waste management facility.
 - 4.5.2 Site roads must be regularly maintained and kept free from deposits in order to prevent silt, oil or other materials entering any drain or watercourse.
 - 4.5.3 Any lorry wheel cleaning facilities shall be securely constructed with no overflow and effluent shall be contained for proper treatment and disposal.
 - 4.5.4 Before any discharge of water is made from the site, adequate provisions, such as settlement lagoons, must be made to ensure that pollution will not occur. The local EA office shall be consulted in order to obtain approval.
- 4.6 In order to prevent pollution from oil and chemicals:
 - 4.6.1 All fuel and chemical storage must be either in double skinned storage tanks or sited on an impervious base within a bund and secured. The base and bund walls must be impermeable to the material stored and of sufficient capacity to contain 110% of the volume of the largest tank, or 25% of the total capacity of all tanks, whichever is the greater. Filling and refueling must be strictly controlled and together with any oil storage tanks, should be confined to a location remote from any watercourse or drain. Leaking or empty drums must be removed from the site immediately and taken to an appropriate facility for treatment/disposal.
 - 4.6.2 All valves and trigger guns shall be as resistant to unauthorized interference and vandalism as possible and should be turned off and securely locked when not in use.
 - 4.6.3 The capacity and contents of any tank shall be clearly marked on the tank and a notice displayed requiring that valves and trigger guns be locked when not in use.
 - 4.6.4 Any tanks or drums shall be stored in secure containers or compounds. These must be kept locked when not in use.

- 4.6.5 Before any tank is removed or perforated, particularly during demolition works, all contents and residues must be emptied by a competent operator for safe disposal. Pipes may contain significant quantities of oil or chemicals, and shall be capped, or valves closed to prevent spillage.
- 4.6.6 Prior to the commencement of construction the Contractor shall submit for written approval by the Employer and the Local Planning Authority his proposed procedures for minimising the effects of accidental spillage of pollutants and shall maintain the necessary remedial equipment on site throughout the construction period.

5 Handling and Disposal of Contaminated Materials and Other Wastes

- 5.1 The Contractor shall take all necessary measures to deal with noxious and toxic materials encountered. All contaminated sites and the hazards that they present shall be identified, as far as reasonably practicable, before work starts. If hazardous materials are found during site clearance, the contractor shall stop all work and secure the site from access by any person until methods of safe removal and disposal have been agreed with the client.
- 5.2 The Contractor shall make reference to the HSE publication, HSG 66 'Protection of Workers and the General Public during the Development of Contaminated Land', HMSO 1991, for guidance on precautions required during construction on potentially contaminated sites. In particular, the Contractor shall ensure that all necessary precautions are taken to protect workers exposed to any noxious and toxic chemicals such that:
 - 5.2.1 Protective clothing, including protective overalls, hand protection and safety wellingtons to be worn.
 - 5.2.2 Contact with fill materials to be avoided.
 - 5.2.3 If skin contact occurs, the affected area shall immediately be washed.
 - 5.2.4 Smoking and eating on site shall be prohibited.
 - 5.2.5 Shoes and boots shall be cleaned off prior to leaving the site.
 - 5.2.6 Entry into confined spaces and trenches shall be minimised where possible. If entry is necessary, then clear procedures shall be developed for entry into trenches, manholes, etc, where there is a possibility of oxygen deficiency or asphyxiation or toxic gases. This shall include monitoring for a range of gases, etc.
 - 5.2.7 If it is necessary to remove contaminated materials and other wastes from site, then open lorries or skips used for removal shall be securely sheeted before vehicles leave the site. Only authorised carriers of waste shall be used. The written approval of the Local Planning Authority must be obtained of the waste management facilities to be used together with the related volumes and routing of waste delivery vehicles. Detailed records of disposal will be necessary and the Contractor shall agree this with the Environment Agency.
- 5.3 The Contractor shall obtain the prior written approval of the Local Planning Authority before any imported material is brought onto any part of the construction site.
- 5.4 The Contractor shall endeavour to limit the amount of waste created during construction by seeking to minimize the initial use of materials and then recycling materials where appropriate.
- 5.5 If the Contractor wishes to arrange for any recycling of contaminated materials encountered during the construction works, then before undertaking any recycling

measures he shall consult with and obtain the prior written approval of the Local Planning Authority to the recycling of the materials.

- 5.6 The Contractor shall maintain written records (including waste transfer documentation) for inspection by the Employer and the Local Planning Authority detailing the disposal off site of all waste materials.
- 5.7 All proposals for the temporary storage of soil and spoil shall receive the prior approval of the Local Planning Authority and include the proposals for the reinstatement of any land used for this purpose.

6 Trees and Vegetation

- 6.1 Before any works take place on site, the Employer shall establish, with the Local Planning Authority, a Tree and Vegetation Protection Policy.
- 6.2 The Policy will specify measures for dealing with trees that may be directly or indirectly affected by the works. The policy must be consistent with BS 5837 'Guide for Trees in relation to Construction'. In particular:
 - 6.2.1 The Contractor shall ensure that any trees or hedges or ecologically sensitive areas which are not to be removed under the Contract shall be protected by fencing and visible barriers prior to works commencing and these shall be maintained throughout the works. Such fencing shall include protection of the area occupied by the tree roots. The timing of the fencing erection and its removal, and any access into ecologically sensitive areas shall be agreed in advance with the Local Planning Authority.
 - 6.2.2 Where any existing trees or hedges are to be removed, the Contractor shall before commencing any clearing in the areas concerned, agree with the Local Planning Authority those areas to be protected, those to be removed and any measures/working methods necessary to safeguard retained trees.
 - 6.2.3 If the Contractor considers it essential to trim branches or to carry out work adjacent to roots, he shall first obtain the permission of the Local Planning Authority. Such permission, if given, may include a requirement to hand dig and may specify the size of roots to be retained and remedial/reinstatement procedures.

7 Site Boundaries/Hoardings/Temporary Structures on the Public Highway

- 7.1 The Contractor shall ensure all designated work sites are completely and adequately fenced off from members of the public to prevent any livestock and people entering. Fencing shall be constructed to the reasonable satisfaction of the Local Planning Authority, with solid boarding used near houses to reduce noise. If hoardings are provided bulkhead lights shall be fitted where appropriate.
- 7.2 The provision of gates in the fencing or hoarding shall, as far as practicable, be positioned, constructed and kept shut to minimise noise to nearby properties from the work sites direct or from plant entering or leaving the site.
- 7.3 The Contractor shall ensure that if hoardings are provided they are painted on the external face in a plain uniform manner and include a project logo agreed with the Local Planning Authority.
- 7.4 The Contractor is expressly prohibited from displaying or allowing to be displayed any advertisement, notice etc (including illicit bill or fly posting) on the hoardings without the prior permission of both the Employer and the relevant local authority. The Contractor shall also ensure that all graffiti or defacements to the hoardings are removed and made good as soon as reasonably possible.

- 7.5 There shall be provided at each operating work site an information board detailing information on the site programme, together with telephone contacts (including an emergency telephone number) for use by members of the public who wish to lodge complaints.
- 7.6 The Contractor in accordance with any appropriate licence granted by the Highway Authority shall maintain any fenced storage areas, scaffolding gantries, loading/unloading bays, skips or other temporary structures on the public highway provided by the Contractor.
- 7.7 The Contractor shall ensure that construction buildings and equipment are sited so as to minimise visual intrusion, consistent with the efficient operation of each work site. The layout of any Contractor's compounds shall be submitted to and approved in writing by the Local Planning Authority prior to commencement of construction.

8 Site Activities

- 8.1 The Contractor shall ensure the following general requirements are met in relation to the construction works:
- 8.1.1 Smoking areas will be provided, at suitable locations at ground level. Smoking must not be allowed at any location below ground level.
 - 8.1.2 Rubbish will be removed at least weekly and each work site kept clean and tidy.
 - 8.1.3 Toilet facilities will be kept clean at all times.
 - 8.1.4 Food waste will be kept contained and removed at least weekly.
 - 8.1.5 Wheel washing facilities will be brushed clean at monthly intervals.
 - 8.1.6 Detailed daily records will be kept of climatic conditions including rainfall, minimum and maximum temperatures and humidity.
 - 8.1.7 Records of construction plant used on the site shall be maintained at weekly intervals.
 - 8.1.8 The Contractor shall comply with the requirements of the local fire authority and take all necessary measures to minimize fire risks.
- 8.2 A nominated representative(s) from the Employer and the Local Planning Authority and their agents (e.g. a local authority Environmental Health Officer) will inspect each work site at regular intervals. Should the Contractor not be complying in any respect with the Code of Construction Practice he shall have a period of three days or such shorter period as may be deemed necessary by the Employer to rectify the situation. Otherwise the Local Planning Authority may commence enforcement proceedings.
- 8.3 The Contractor will not allow any residential accommodation on site except with the prior consent of the Local Planning Authority. Mess rooms, locker rooms, toilets and showers will be permitted.
- 8.4 Where practicable and suitable the Contractor will arrange for a viewing platform at certain sites, these to be agreed with the Local Planning Authority.
- 8.5 At each work site all vehicles shall enter and exit in a forward direction except where space restriction does not permit this. In that event movement shall be properly controlled by a responsible person(s) observing the rear of the vehicle.
- 8.6 All loading and unloading of vehicles will take place off the public highway unless a temporary Traffic Regulation Order has been deemed necessary to revoke a loading ban or it is absolutely unavoidable in which case the Contractor should seek the approval of the Highway Authority.

- 8.7 The Contractor shall provide suitable lighting to the site boundaries with illumination sufficient for the safety of the passing public including mobility-impaired people. Site lighting must be designed, positioned and directed so as not to unnecessarily intrude on passing drivers on public highways, and having due regard to residential premises neighbouring the site.
- 8.8 If the Contractor provides site security cameras, these must be located in positions that will not cause offence to local residents or businesses.
- 8.9 On completion of the construction works the Contractor will clear away and remove from each work site all plant, surplus materials, rubbish and temporary works of every kind and leave the whole of each work site and works in a clean and tidy condition to the satisfaction of the Employer and the Local Planning Authority.
- 8.10 The Contractor shall agree with the Employer and the Local Planning Authority proposals for the reinstatement of all work sites prior to the commencement of the construction works.

9 Liaison and Awareness

- 9.1 The contractor will use the Considerate Contractor or similar approved scheme and set out its proposals, to be agreed with the Local Planning Authority for informing local residents, local businesses and users of any public realm affected by the works of the likely duration and impacts of the works.
- 9.2 The Employer will put into place a procedure whereby members of the public can if necessary make contact by telephone direct with a 'hot line' facility, or alternatively provide details of the named contacts for written complaints. The Employer will give consideration to the establishment of a number of local liaison fora during the construction of the works involving representatives from the Employer, Contractor, local councils and the public.
- 9.3 The Contractor will ensure that details of the relevant contacts within the Employer and Local Planning Authority are readily available, and shall ensure all site construction staff are easily identifiable to the public by use of identity cards or an equally effective system.
- 9.4 The Contractor will ensure that all site construction staff have received an induction that includes all the issues contained in this Code of Construction Practice.
- 9.5 The Contractor will introduce a system for the recording and dealing with of all complaints, which shall be collated by them and a copy given to the Local Planning Authority and the Employer on a regular basis.

(D) Relevant BS Standards and Guidelines

In addition to compliance with all relevant legislation applicable at the time of the construction works and compliance with certain BS standards referred to in Section C of this Code of Practice the following additional BS standards and guidelines (including any updates) issued by various statutory bodies must be complied with:—

- BS 4142: 1997 Method of rating industrial noise affecting mixed residential and industrial areas
- BS 5228:2009 Code of practice for noise and vibration control on construction and open sites- parts 1 and 2
- BS 6164:1990 Safety in tunnelling in the construction industry
- BS 8005: Part 3 - 1989 Sewerage Part 3 Guide to planning and construction of sewers in tunnels

- BS 6031: 1981 Code of Practice for earthworks
- BS EN 60651 (1994) Specification for sound level meters
- HSE Guidance Notes GS 29/1 to 29/4- Health and safety in demolition work.
- HSE Guidance Note EH 40/96 - Occupational Exposure Limits 1996
- Relevant EA Guidelines and Regulations
- Chapter 8 of the Traffic Signs Manual 1991
- Highways Act 1980 and Amendment Act 1986
- CDM Regulations 1994. S.I.1994/3140
- HSE Guidance Note HS(G)66 - Protection of Workers and the General Public during Development of Contaminated Land 1991
- Safety At Street Works And Road Works Code Of Practice 2002
- New Roads and Streetworks Act 1991
- Traffic Signs Regulations and General Directions 1994
- NJUG recommendations
- Road Traffic Act 1988 and 1991
- Road Traffic Regulation Act 1987
- Construction (Design & Management) Regulations 2007