

Interim Advice Note 105/08

**Implementation of
Construction (Design and
Management) 2007
And the withdrawal of
SD 10/05 and SD 11/05**

1. Introduction

The Construction (Design and Management) Regulations 2007 (CDM2007) came into force on 6th April 2007. They replace the Construction (Design and Management) Regulations 1994 (CDM1994) and the Construction (Health, Safety and Welfare Regulations 1996 (CHSW).

Guidance on the new legislation is contained in the HSE's Approved Code of Practice (ACoP) "Managing Health and Safety in Construction" (Ref: L144).

The Highways Agency's requirements for both the Health and Safety Plan and the Health and Safety File for schemes under CDM1994 were set out in standards SD 10/05 (Construction (Design and Management) Regulations 1994: Requirements for the Health And Safety Plan) (MCHW 6.1.1) and SD 11/05 (Construction (Design And Management) Regulations 1994: Requirements for the Health and Safety File) (MCHW 6.1.2) respectively.

Having reviewed SD10 and SD11 much of their content is covered in the ACoP. As a consequence SD10 and SD11 have been withdrawn with immediate effect. Detailed guidance not covered in the ACoP but contained within SD 10/05 and SD 11/05 can now be found in this IAN.

2. Summary of Guidance

2.1. Pre-construction Information, See ACoP Appendix 2

2.2. Construction Phase Plan, See ACoP Appendix 3

2.3. Health and Safety File, See ACoP pages 61 to 64 and in addition the following information:

2.3.1 As built drawings

Residual hazards must be highlighted on the drawings. Only drawings relevant to health and safety must be included within the file. Examples are given below:

General arrangement drawings referenced to the O.S. Grid Reference or maintenance reference system covering:

- (a) horizontal alignment including land boundaries to a scale of 1/2500 or 1/1250 in urban areas;
- (b) vertical alignment showing the final and original ground levels on the centre line of the road or new and existing surface levels where reconstructing an existing road.

The drawings should have all non-existing background information removed and the boundaries of the trunk road clearly shown in relation to side roads or other features.

2.3.2 Earthworks

Drawings depicting the following information:

- (a) profiles depicting new and existing levels annotated with basic information on soil types including any capping layers and backfill to structures;
- (b) plans and profiles of any areas of contaminated land depicting the extent, details of any treatment and analysis of contaminants;
- (c) locations and details of treatment for any mine shafts, mine workings, swallow holes etc encountered in the project;
- (d) details of any soil retention methods (e.g. soil nailing);
- (e) locations and details of soil treatment (e.g. lime stabilisation);
- (f) reports produced as part of the geotechnical certification procedure identified within HD 22/02 (DMRB 4.1.2).

2.3.3 Drainage

Drawings depicting the following information:

- (a) plans and sections of foul/surface water drainage networks depicting location and invert levels of chambers, types and sizes of pipes, bedding/backfill details and any protection;
- (b) plans showing locations of fin drains including details of type, make and depth;
- (c) plans depicting outfalls into watercourses including provisions for oil interceptors or other pollution traps;
- (d) plans depicting balancing ponds and other drainage features;
- (e) plans showing land drain connections;
- (f) drawings depicting types and locations of manholes and catchpits, including details of proprietary systems if used and gullies, gratings and frames;
- (g) details of water bearing strata;
- (h) any locations requiring confined space procedures;
- (i) areas, which may flood in severe storms.

2.3.4 Pavement

Drawings depicting the extent of pavement including type of materials, thicknesses and mix design for bituminous pavements and details of joints/mix design and reinforcement for concrete pavements.

2.3.5 Highway structures

Drawings depicting comprehensive information in respect of highway structures are prepared as part of the structural records in accordance with the requirements of BD 62/07 (DMRB 3.2.1). All aspects that may have relevance to health and safety are recorded as part of these records and references must be made to them for such information. It should be noted that CCTV masts, portal and cantilever signs / signal gantries, lighting columns are all classified as highway structures and therefore information must be recorded accordingly.

A simple general arrangement drawing could be useful for the main file highlighting residual health and safety risks. These risks could include height, width or load restrictions and the need for confined space procedures for access etc.

2.3.6 Fencing

Drawings depicting the location of fencing including type of fence, protection given, type of protective treatment e.g. wood preservative, and any special features such as additional netting and its function (e.g. to retain a particular species of fauna).

2.3.7 Road restraint systems

Drawings depicting the location and types of road restraint systems including details of the post fixings and any standard / non-standard drawings and instructions used in the design and installation. Manufacturer's inspection, repair and maintenance instructions must also be included. For tensioned systems, include procedures for de-tensioning.

2.3.8 Road markings and traffic signs

Drawings depicting the locations and details of road markings and traffic signs including materials, fabrication, foundations, lighting and power supply where applicable.

2.3.9 Traffic signals

Drawings depicting the locations of traffic signal apparatus including type of signal heads, detectors, routes of interconnecting cables, power supply and connections (if any) to other systems such as SCOOT / MOVA. A statement of the equipment's functionality must also be provided.

2.3.10 Lighting

Drawings depicting the location of road lighting apparatus including details of the type of column, lantern, foundations and power supply.

2.3.11 Statutory undertaker companies equipment

Drawings depicting the responsible authority/company, location, depth, size and type of equipment. Methods of marking / identification of statutory undertaker's equipment must be included. Drawings must include a reminder that any future proposals require liaison with the relevant authority/company.

2.3.12 Control and communications equipment

Drawings depicting location and details of the type of equipment and routes of interconnecting cables and power supply. A statement of the equipment's functionality must be included.

2.3.13 Legislative requirements

Plans needed to identify the area of highway land available for maintenance and possible future improvements must be included. Maintenance easements for drainage etc and discharge storm water rights must be shown.

2.3.14 Design information

The following information must be provided as appropriate:

- (a) for highway structures reference must be made to the structural records prepared in accordance with BD 62/07 (DMRB 3.2.1). For highway bridges the height, width, design loads and load restriction must be given in addition to the completed approval in principle (AIP) used for the design, a design summary, design checks and certificates and other design requirements in the appropriate Standards within Volume 1 of the DMRB;
- (b) for substructures and special structures e.g. crib retaining walls, bridge abutments, foundations, CCTV masts, buried rigid pipes and portal and cantilever signs/signal gantries, design information must be provided that has been used to design the substructure / structure in accordance with the relevant standard within Volume 2 of the DMRB;
- (c) for tunnels reference must be made to the requirements of BD 78/99 (DMRB 2.2.9) and the relevant design information provided accordingly;
- (d) for safety barriers details must be provided of the classification, with reasoning, of the barrier system chosen, and the working width, set back and length of barrier provided;
- (e) basic design parameters used for cutting/embankment slope calculations with a list of slope batters;
- (f) details of drainage design calculations for culverts/sewers, combined kerb and drainage systems and linear drainage systems including the maximum storm period used e.g. 1 in 5 year time of concentration;
- (g) details of predicted/actual/maximum design traffic flows and pavement design loadings and assumptions e.g. strength of sub grade (CBR);
- (h) details for designed / retained maintenance crossovers e.g. design speed, length, pavement details as (d) above;
- (i) details of road lighting calculations;
- (j) details of traffic signal calculations (e.g. traffic signal timings, predicted queue lengths etc.);
- (k) This list is not exhaustive either in terms of the design elements listed or the required information identified. In providing design information for the file the designer must refer to the requirements of the relevant Standards and any site specific issues.

2.3.15 Construction methods

Reference must be made to the structural records for information that may be relevant if a structure has to be extensively modified, e.g. where a highway structure is post tensioned.

Provide information on methods of construction where special techniques were necessary, e.g. dewatering or ground freezing, lime stabilisation, use of caissons or cofferdams to construct underwater structures, any site specific traffic management layouts utilised in the construction of the project, and the use of light weight fill materials such as polystyrene in the construction of embankments.

Describe any significant health and safety problems not anticipated in the pre-construction phase that subsequently arose during construction and the steps taken to overcome them e.g. unstable ground conditions and the use of sheet piling to retain any excavations.

2.3.16 Materials

Provide safety data for hazardous proprietary materials (e.g. paints and protective coatings used on highway structures) and existing hazardous products (e.g. asbestos drainage pipes, contaminated land, and bituminous planings utilised as sub base) that have been either used or retained in the project. Other unusual materials must be included if it is anticipated that in future they would be difficult to obtain. Where sub-contractors were responsible for operations involving the installation or application of products or materials, names and addresses must be given. This information in respect of highway structures is contained in the structural records prepared in accordance with BD 62/07 (DMRB 3.2.1).

Waste transfer notes must be held in the file to comply with legislation and provide information on any contaminants removed from site.

Test certificates for materials must be provided if not included in operation and maintenance manuals.

2.3.17 Maintenance procedures

Full information on maintenance facilities, procedures, and manuals for highway structures must be provided in the structural records prepared in accordance with BD 62/07 (DMRB 3.2.1). Information on the inspection, maintenance, repair, and assessment of highway structures including tunnels and buried concrete box structures is provided within Standards in Volume 3 of the DMRB. The Designer must provide information within the file in accordance with the requirements of the relevant Standards.

A maintenance manual must be provided for any plant, machinery or equipment forming part of the permanent works for the project that is not required as part of a highway structure as defined within BD 62 e.g. gantries and electrical switchrooms in road lighting systems. The manual must detail the methodology for comprehensive testing, routine maintenance, fault repair and testing.

Details must be provided of any features incorporated into the project to facilitate future maintenance operations to be undertaken e.g. access / egress arrangements for tunnels, other buried structures and highway bridges with steel box sections, lane closure arrangements for certain maintenance work and temporary cross-over arrangements on dual carriageways (See TA 92/97 DMRB 8.4.6).

Where Operation and Maintenance Manuals are to be provided, within or outside the file, they must highlight significant residual hazards.

Where it is known or anticipated that hazardous or toxic substances are present then these must be identified. It should be noted that in addition to hazardous substances used in the construction process hazardous or toxic substances may be present due to the use of the structure e.g. carbon monoxide, sulphur dioxide and rat urine in sewers, bird faeces on the underside of bridge decks and mould growth in tunnels and other buried structures. Additionally maintenance, inspection and testing procedures may require the use of substances hazardous to health, e.g. silane used in the impregnation of concrete highway structures, utilising the technique of radiography in the inspection of structures, and substances used in the waterproofing of structures. Where substances hazardous to health are utilised in maintenance, inspection and testing procedures information must be provided as identified within the first paragraph of 1.16 (above).

The Highways Agency's Routine and winter Service Code (RWSC) and Network Management Manual (NMM) includes information on health and safety issues relating to

maintenance activities to be undertaken on trunk roads. Therefore, the Designer must refer to this document, or any document that supersedes it, for information relating to maintenance activities.

2.3.18 Demolition

Provide information on the health and safety implications where temporary (e.g. to renew time-expired components such as joints or bearings within highway structures) or permanent decommissioning, demolition or dismantling of structures is anticipated / proposed. Cross-reference to the structural records prepared in accordance with BD 62/07 (DMRB 3.2.1) where temporary or permanent decommissioning, demolition or dismantling of a highway structure is proposed.

Potential health and safety problems with the future demolition of any structure must be highlighted e.g. post-tensioned highway structures and hazardous substances such as lead that were traditionally used in the manufacture of paint and statutory utilities apparatus.

Detail any health or safety implications that the removal of any plant, machinery or equipment (particularly electrical/electronic such as that used in switchrooms within road lighting equipment) may have on others outside the site or working area e.g. removal of paint from highway structures.

3. Implementation

This Interim Advice Note should be used forthwith on all projects for the assessment, design, construction, operation and maintenance of motorway and all-purpose trunk roads (and roads designated by the Overseeing Organisation in Northern Ireland) except where the procurement of works has reached a stage at which, in the opinion of the Overseeing Organisation, its use would result in significant additional expense or delay progress (in which case the decision must be recorded in accordance with the procedure required by the Overseeing Organisation).

4. Withdrawal of Documents

It is intended that amendments to the Manual of Contract Documents to Highways Works will be incorporated in due time, at which point this CHE Memo and accompanying IAN will be withdrawn