

TRANSPORT SCOTLAND (Agency of the Scottish Government)

TRUNK ROADS DIRECTORATE

**TS INTERIM AMENDMENT N° 27 Rev 01 – IMPLEMENTATION OF CONSTRUCTION (DESIGN
AND MANAGEMENT) 2007 AND THE WITHDRAWAL OF SD 10/05 AND SD 11/05**

SUMMARY

This Transport Scotland Interim Amendment:

- Supersedes SD 10/05 and SD 11/05
- Provides advice on the Implementation of the Construction (Design and Management) Regulations 2007
- Contains reference to the Approved Code of Practice for the Regulations

TRANSPORT SCOTLAND INTERIM AMENDMENT N° 27 Rev 01**IMPLEMENTATION OF CONSTRUCTION (DESIGN AND MANAGEMENT) 2007 AND THE
WITHDRAWAL OF SD 10/05 AND SD 11/05****CONTENTS**

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TRANSPORT SCOTLAND INTERIM AMENDMENT N° 27 Rev 01**IMPLEMENTATION OF CONSTRUCTION (DESIGN AND MANAGEMENT) 2007 AND THE WITHDRAWAL OF SD 10/05 AND SD 11/05****1 Introduction**

1.1 The Construction (Design and Management) Regulations 2007 (CDM 2007) came into effect on 6th April 2007, replacing the Construction (Design and Management) Regulations 1994 (CDM1994) and the Construction (Health, Safety and Welfare) Regulations 1996 (CHSW).

1.2 Guidance on the new legislation is contained in the Health and Safety Executive's Approved Code of Practice (ACoP) "Managing Health and Safety in Construction" (Ref: L144). This Transport Scotland Interim Amendment (TS IA) supplements the ACoP by providing guidance on the implementation of CDM 2007 specific to projects involving the construction of trunk roads, including motorways.

1.3 Transport Scotland's requirements for the health and safety plan and the health and safety file for schemes under CDM1994 were set out in the following documents:

- **SD 10/05 (MCHW 6.1.1)** Construction (Design and Management) Regulations 1994: Requirements for Health and Safety Plan
- **SD 11/05 (MCHW 6.1.1)** Construction (Design and Management) Regulations 1994: Requirements for Health and Safety File

SD 10 and SD 11 have been withdrawn with immediate effect.

2 Scope

2.1 This TS IA is to be read in conjunction with the ACoP and applies to trunk road (including motorway) schemes. It is concerned with the responsibilities of duty holders solely in connection with the preparation of the pre-construction information, the health and safety plan and the health and safety file.

2.2 The various parties involved in construction projects have duties under the CDM Regulations beyond the preparation of the pre-construction information, the health and safety plan and the health and safety file. Reference must be made to CDM2007 and the ACoP for details.

3 Implementation

3.1 This TS IA must be used forthwith on all projects for the assessment, design, construction, operation and maintenance of motorway and all-purpose trunk roads.

3.2 It is anticipated that these amendments will ultimately be incorporated into the Manual of Contract Documents for Highway Works, at which point this TS IA will be withdrawn.

4 Pre-Construction Information

4.1 The objective of the pre-construction information is to provide duty holders who may be engaged in the work with the project-specific health and safety information needed to identify hazards and risks associated with the design and construction.

4.2 Guidance on the requirements for pre-construction information in compliance with CDM 2007 is given in the ACoP, paragraphs 55 to 60. Further guidance on the nature and extent of pre-construction information is given in the ACoP, Appendix 2.

4.3 Supplementary industry-specific guidance on the requirements for pre-construction information is provided in Annex A of this document.

5. Construction Phase Plan

5.1 The objective of the construction phase plan is to set out the way in which the construction phase will be managed and to identify the key health and safety issues of the project under consideration.

5.2 Guidance on the requirements of the construction phase plan in compliance with CDM 2007, including its implementation and monitoring, is given in the ACoP, paragraphs 160 to 166. Further guidance on the necessary considerations and content of the plan is given in the ACoP, Appendix 3.

5.3 **Reference must be made** to the documentation within the Design Manual for Roads and Bridges (DMRB) that is relevant to the design, construction, maintenance, alteration, dismantling and demolition of the project under consideration. This is necessary as these documents may identify hazards, specify the requirement for permits to work or method statements for specific construction activities, offer advice on safe working procedures or detail what information must be provided within the health and safety plan.

5.4 When producing a construction phase plan for works undertaken on the trunk road network, **reference must be made** to the Term Contract for Management and Maintenance of the Scottish Trunk Road Network (Schedule 1), or any document that supersedes it, for information relating to maintenance activities.

5.5 Supplementary industry-specific guidance on the content of the construction phase plan is provided in Annex B of this document.

6. Health & Safety File

6.1 The objective of the health and safety file is to provide the information required to allow future construction work, including cleaning, maintenance, alterations, refurbishment and demolition to be carried out safely.

6.2 Guidance on the requirements of the health and safety file in order to comply with CDM 2007 is given in the ACoP, paragraphs 256 to 268. The guidance included in paragraphs 6.3 to 6.9 below is supplementary to the ACoP and should be applied to projects involving the construction of

trunk roads (including motorways). Supplementary industry-specific advice on the content of the health and safety file is given in Annex C of this document.

6.3 As stated in the ACoP paragraph 264(h), information contained in other documents may be omitted from the health and safety file, on condition that the relevant documents are clearly referenced within the file. This will apply particularly to road structures for which extensive records, including health and safety information, is collected to the requirements of **BD 62 (DMRB 3.2.1)**. These records will be the primary source of information with the file cross-referencing and highlighting any additional significant health and safety issues.

6.4 Where the project involves alterations or additions to roads or other features outside the trunk road boundary, the information relating to such must be in a separate file or separately identified so that it can be passed to the “owner” of the road or feature. In such cases it will not be acceptable to cross-reference to other records and the file or part must be a stand alone document. This will be the case for road structures where information to **BD 62 (DMRB 3.2.1)** will need to be provided separately.

6.5 The structure of the health and safety files must take account of the different forms of procurement but the content must always be driven by the client's end use. On maintenance projects, where there are usually a large number of construction activities relating solely to maintenance and replacement of existing street furniture on a like-for-like basis, there may be no material effect on the information within the file for the structure e.g. the carriageway on a road resurfacing contract. This requirement to consider different forms of procurement must be addressed in the health and safety file management custodian arrangements, together with how health and safety files relating to capital works are provided to the maintaining organisation. The health and safety plan may also contain specific requirements for the style and content of the file.

6.6 In the instance of maintenance contracts for lengths of trunk road within a particular geographical area of the network, it may be advisable to create a separate health and safety file for each trunk road within the area in question. Therefore a number of health and safety files would cover all of the lengths of carriageway and road structures in the maintenance area. In such a health and safety file the details of the carriageway and each road structure along a particular route could be recorded in order of chainage (or other referencing system), with generic safety hazards, risks and procedures identified at the beginning of the file. Details of maintenance works could then be stored in the relevant section. A health and safety file compiled in this manner would constitute a large number of volumes and therefore might benefit from the use of an electronic document management system to control the management of the file.

6.7 **Reference must be made** to the documentation within the DMRB that is relevant to the design, construction, maintenance, alteration, dismantling, and demolition of the project under consideration. This is necessary as these documents may identify hazards, specify the requirement for permits to work or method statements for specific construction activities, offer advice on safe working procedures or detail what information must be provided within the health and safety plan and health and safety file.

6.8 The file must be kept available while the structures making up the project remain in existence. This means that for a project involving road construction the information will need to be kept in perpetuity. However, whenever maintenance alterations, dismantling and demolition work is undertaken, the file will require updating to take account of any changes. The file will therefore represent the sum of all of the work that falls under the requirements of the CDM Regulations undertaken on a particular length of road and provide a source of up to date information on its design and construction. It is therefore essential that the format chosen for the file is such that it is



durable and can be readily accessed and updated.

6.9 When producing a health and safety file for works undertaken on the trunk road network, **reference must be made** to the Term Contract for Management and Maintenance of the Scottish Trunk Road Network (Schedule 1), or any document that supersedes it, for information relating to maintenance activities.

Annex A: Supplementary Guidance on the Pre-Construction Information

A1 This annex is provided as additional industry-specific guidance and is designed to compliment the Approved Code of Practice “Managing Health and Safety in Construction”, when preparing the pre-construction information. The pre-construction information provides background information for those bidding for work and for the development of the construction phase plan and health and safety file. The pre-construction information must include or address all of the topics listed below to a level of detail consistent with the nature and scope of the proposed construction project and only where they are considered to be relevant.

A2 Where “MCHW Appendix” numbers are referenced in this annex these relate to specification appendices in the Manual of Contract Documents for Highway Works. Where it is necessary to ensure that any clients’ health and safety requirements are covered by contractual obligations they must be incorporated on the drawings or in the Specification for the works.

A3 Description of Project

Title of project, location and timescale for the work – brief description of project, cross-referenced to the drawings where necessary to assist in defining the location of the project. Timescales must be given where known.

Names and address of organisations and contact name and details of key individuals within the project team, including those with specific health and safety responsibilities.

The extent and location of existing records and plans and, if available, an existing health and safety file must be stated. Information pertinent to the scheme should be extracted as appropriate and included in the pre-construction information.

A4 Client’s Considerations and Management Requirements

The roles and responsibilities of key individuals managing the project such as the project sponsor, the project director/ manager of the designer and key duty holders identified within CDM2007 must be described.

Safety goals for the project – reference must be made to the Overseeing Organisation’s current policy for similar roads projects and any published annual or longer term targets e.g. reduction in accident targets within business plans. This could for example include the setting of numerical targets for site accidents, which should be better than the industry average and for road accidents on a section of road undergoing improvement, which should be no higher than during a similar period prior to the works.

Arrangements for monitoring and reviewing the health and safety performance of the construction phase of the project must be described.

Aspects of the construction work where permits to work or other forms of authorisations will be needed must be identified. This could include confined space work in chambers and inspection galleries, hot work such as welding and work on street lighting and communications systems, which may involve connections to live electrical circuits. The procedures and permits for obtaining temporary road traffic orders such as road closures or mandatory speed limits must also be identified.

Outline details of any procedures required to be developed by the principal contractor or other contractors to cope with emergencies must be provided (e.g. access through the site for the emergency services).

Information must be provided regarding any specific instructions or procedures which must be included (or are required to be developed) within the construction phase health and safety plan to ensure that the management of health and safety on site is effective. An example of this is that the contractor has to develop the induction instructions that must apply to visitors to the site e.g. safety helmets and high visibility jackets to be worn and safe working procedures to be adopted. The contractor must be advised of any specific arrangements required to prevent access by unauthorised persons and instructions that should apply to deliveries of materials to the site. The client must specify any training considered essential for site employees for the safe operation of the site.

The following is required in relation to site rules and other restrictions on contractors, suppliers and others:

- a) Access/egress – provide comprehensive instructions if there are any specific restrictions on access/egress points or phasing requirements that will assist in informing the contractor's preparations for such arrangements. Cross reference to the drawings and MCHW Appendix 1/17 (Traffic Safety and Management), as appropriate. The principal contractor must be advised by the client of any specific arrangements required to prevent access by unauthorised persons, or any specific instructions applying to deliveries and removals of materials to and from the site.
- b) Site accommodation – provide details of specific site accommodation including that for the client's site team, and where appropriate, provide details of the availability or any restrictions on the positioning of temporary site accommodation. Cross-reference to MCHW Appendix 1/1 (Temporary Accommodation and Equipment for the Employer's Representative) as appropriate.
- c) Welfare – provide details of specific welfare provisions which are required to safeguard site staff including those of the client's site team e.g. sanitary and washing facilities, especially when contaminated land is present. Cross-reference to MCHW Appendix 1/1 as appropriate.
- d) Storage areas – where appropriate, provide details of any restrictions on storage areas for plant, materials or soil heaps. Cross-reference to MCHW Appendix 1/7 (Site Extent and Limitations on Use) as appropriate.
- e) Traffic/pedestrian safety and management – provide information on any specific restrictions or instructions to be complied with, for example:
 - Traffic routes to and from the site. Cross-reference to MCHW Appendix 1/19 (Routeing of Vehicles) as appropriate.
 - Traffic safety and management measures to be incorporated into the temporary traffic management plan, for example whether roads are to remain open to traffic, the need for specific measures to protect work force/motorists/general public, temporary speed limits, and when temporary barriers have to be considered.
 - Temporary traffic diversions. Cross-reference to MCHW Appendix 1/18 (Temporary Diversions for Traffic) as appropriate.
 - Movement of plant and machinery across public roads and the site. Cross-reference to MCHW Appendix 1/18 as appropriate.
 - Movement or diversion of pedestrian, equestrian or cycle routes across the site. Cross-reference to MCHW Appendix 1/18 as appropriate.

- Mandatory and/or advisory speed limits through the site or on adjacent roads. Cross-reference to MCHW Appendix 1/17 (Traffic Safety and Management) as appropriate.
- Delineation of emergency routes through the site, including restrictions in respect of obstructions or the temporary use of such routes by plant and machinery. Cross-reference to MCHW Appendix 1/17 as appropriate.
- Safety zones to protect the workforce, giving widths, locations and means of delineation. Cross-reference to MCHW Appendix 1/17 as appropriate.

The following is required in relation to activities on or adjacent to the site during the works:

- a) Information of activities on adjacent land and any special events that are likely to attract large volumes of traffic or pedestrians must be described. Cross-reference to MCHW Appendix 1/17 (Traffic Safety and Management) as appropriate.
- b) Where works are being undertaken concurrently with other parties or work is being done for other parties, provide details of any requirements for co-ordinating health and safety or conditions to be imposed by/on other parties e.g. requirements when working near or over canals or other waterways.
- c) Provide information in respect of requirements to be complied with for work to be undertaken during the defects correction period when the road is open to traffic e.g. liaison with the police and roads authority or road maintenance contractor.

The following is required in relation to the arrangements for liaison between parties:

- a) Health and safety management of all movements on the site is the responsibility of the principal contractor. This responsibility extends to any service providers staff or contractors working for the service provider, engaged to carry out work within the site boundary. The construction phase health and safety plan is to give details of how this work is to be managed. Where works are being undertaken concurrently with other parties, details are to be provided of any requirements for co-ordinating health and safety or conditions to be imposed e.g. requirements when working near or over rail tracks.
- b) Provide information on procedures that must be followed for the consideration of specific health and safety issues such as traffic management operations during the contract including the need for formal meetings between parties e.g. the emergency services, local roads authority.
- c) Provide information on any procedures that must be followed for collecting information needed for the preparation of the health and safety file. The procedures must address any specific actions required of the principal contractor by the **CDM co-ordinator**.
- d) Detail any specific site liaison measures required to be incorporated into the construction phase health and safety plan in relation to the management of health and safety on site e.g. appointment of specific staff to oversee health and safety aspects such as the traffic safety and control officer. Cross-reference should be made to MCHW Appendix 1/17 (Traffic Safety and Management) as appropriate.
- e) Give details of any specific procedures, including those required by the client, for the monitoring of, reporting of and dealing with unsafe practices and other health and safety problems that may arise during the project. If appropriate, include procedures to be followed for reporting and resolving such problems between the various parties.

- f) Detail the arrangements and co-ordination requirements expected of the principal contractor to demonstrate the development and operation of a health and safety management system through obtaining information on health and safety provisions from contractors, the self-employed, designers and suppliers of materials, plant and machinery.

Security arrangements must be provided, including any client specific requirements to exclude unauthorised persons e.g. children or protestors.

A5 Environmental Restrictions and Existing On-Site Risks

The following is required in relation to safety hazards:

- a) Land use – the land use of the surrounding area must be outlined and health and safety implications identified arising from the land use or from the affect of the proposed works on the land use e.g. railways affected by the use of certain material processes.
- b) Services – drawings of services both above and below ground are normally included in the contract documentation. Cross-reference must be made to these with further details where applicable in relation to any equipment having significant health and safety implications e.g. live high voltage overhead or buried cables. Attention must also be given to where the provision of services may have no direct bearing on the safety of site personnel; however disruption could lead to safety implications for others e.g. road lighting for road users.
- c) Traffic – provide details of any restrictions on the surrounding road network that could have safety implications e.g. road bridges with low headroom, or width/weight restrictions.
- d) Existing buildings/structures – provide details of any structures where special conditions apply to safety during demolition e.g. bridge with pre-stressed tendons. Where necessary provide details of specific measures to be taken or sequences of work to be followed as provided by the designer of the existing structure.
- e) Working restrictions – cross-reference must be made to the following MCHW appendices as appropriate where the construction of the works will be subject to restrictions:
- MCHW Appendix 1/7 - Site Extent and Limitations on Use;
 - MCHW Appendix 1/9 - Control of noise and Vibration;
 - MCHW Appendix 1/16 - Statutory Undertakers;
 - MCHW Appendix 1/17 - Traffic Safety and Management;
 - MCHW Appendix 1/19 - Routeing of Vehicles;
 - MCHW Appendix 2/4 - Explosives and Blasting;
 - MCHW Appendix 6/2 - Requirements for Dealing with Class U2 Unacceptable Material;
 - MCHW Appendix 6/3 - Requirements for Excavation, Deposition, Compaction;
 - MCHW Appendix 6/13 - Ground Improvements.
- f) Boundaries and access – detail the boundaries of the site and any specific access and egress arrangements/restrictions e.g. phased entry requirements. The contractor must gain permission from the landowner to enter any land outside the boundary of the site.
- g) Existing storage of hazardous substances – indicate by reference to drawings any areas where it is known hazardous substances are stored in close proximity to the site that could present a hazard to the health and safety of workers e.g. nearby chemical store or plant. The contract documents should detail what hazardous substances are stored and identify any mitigation measures to be undertaken to reduce to a practicable level any risks to health.

- h) Ground conditions – indicate by reference to drawings, surveys or other means the boundaries or location of any areas of contaminated ground together with any requirements for dealing with specific aspects relating to ground conditions or any areas requiring special attention e.g. mine shafts, areas of ground instability and the presence of a high water table.
- i) It should be noted that the above list is not exhaustive and is only intended as a guide. Construction works must be undertaken in such a manner that any risks are reduced to a level as low as is reasonably practicable. This requirement extends to other significant safety hazards identified by any contractor within a permit to work, method statement, risk assessment or safe working procedure developed for a specific construction activity.

The following is required in relation to health hazards:

- a) Existing buildings/road structures – provide details of any buildings or road structures to be disturbed or demolished known to contain material/substances hazardous to health including the results of any surveys and details of any special provisions to be made for their containment or excavation/disposal e.g. asbestos.
- b) Ground conditions – indicate by reference to drawings or other means the boundaries or location of any areas of contaminated ground or areas requiring special attention e.g. lime stabilisation or other soil improvement techniques or the provision of piles. Reference must be made to the information available in the contract documents e.g. reports produced as part of the geotechnical certification procedure identified within **HD 22 (DMRB 4.1.2) and SH 4 (DMRB 4.1.7)** and key health and safety issues must be highlighted e.g. details of contaminants together with any requirements for dealing with specific aspects relating to ground conditions.
- c) Hazardous substances – provide details of any requirements in respect of transportation, storage, handling, use or disposal of any substances hazardous to health to be used in the construction of the works e.g. contaminated land, paint systems and epoxy resin. Also provide details of any special requirements needed to ensure that adequate standards of hygiene and welfare are achieved.
- d) Ionising Radiation – Where equipment contains a radioactive source (e.g. nuclear density gauge), procedures are to be included that meet the relevant statutory requirements (The Ionising Radiation Regulations 1999).
- e) Noise and Vibration – Noise and vibration on site must be controlled in compliance with Control of Noise at Work Regulations 2005 and Control of Vibration at Work Regulations 2005 and in accordance with MCHW Appendix 1/9 (Control of Noise and Vibration).

It should be noted that the above list is not exhaustive and is only intended as a guide. The use of hazardous substances in the construction works must be undertaken in such a manner that any risks associated with a particular material are reduced to a level as low as is reasonably practicable. This requirement extends to other significant health hazards identified by any contractor within a permit to work, method statement, risk assessment or safe working procedure developed for a specific construction activity.

A6 Significant Design and Construction Hazards

Every effort must be made at all the design stages to eliminate or reduce the impact of hazards in this construction project. However, there remains a need for the principal contractor to put in place effective operational controls to deal with residual hazards that could not be eliminated at the design stage.

Design parameters must be included where these may have a bearing on the way the work is organised from a safety perspective e.g. bridge construction sequences to avoid over-stressing, temporary traffic management restrictions, hand-over of site or any other client specific requirements.

Information on procedures that must be followed for the consideration and review of ongoing design work and design changes, which could have significant health and safety issues, must be included.

The following is required in relation to significant health and safety risks identified during design:

- a) Provide information where significant hazards and/or work sequences are identified as a risk to the health and safety of workers and others who may be affected e.g. deep excavations, work adjacent to or above moving traffic and railways, work within tunnels and other confined spaces, working at height, working with substances hazardous to health or toxic materials, working under water and working on or near statutory undertakers' equipment. Ensure the provision of the designer's information with suggested construction sequences where appropriate. The designer's risk assessments must be appended to the pre-construction information. The designer must refer to the documentation within the DMRB that are relevant to the design, construction, maintenance, alteration, dismantling, and demolition of the project under consideration. With regard to the design of road structures, information is provided within the documentation in Volumes 1 and 2 of the DMRB.
- b) Road structures, including CCTV masts, lighting columns, footbridges and portal and cantilever signs/signal gantries, designed by the designer must be identified and cross-reference made to Lists A and B within MCHW Appendix 1/10 (Principal Structures to be Designed by the Contractor). This will identify who is responsible for providing information on such structures and allow for this information's incorporation in the construction phase health and safety plan.
- c) Provide information on the expected frequency and likely construction or maintenance methods required for replacing items that will time-expire before the life of the structure e.g. bridge bearings, movement joints, pumps, switch gear etc. The designer must refer to the documentation within the DMRB that are relevant to the design, construction, maintenance, alteration, dismantling, and demolition of the project under consideration. With regard to the inspection, maintenance, repair and assessment of road structures information is provided within the documentation in Volume 3 of the DMRB.

The following is required in relation to materials or substances requiring particular precautions:

- a) Provide information on any substances or materials to be found within the existing site e.g. ragwort, mould, animal faeces, and carbon monoxide or that may be generated or used in the works e.g. two pack paint systems, epoxy resins, silane and lime, which may present a significant hazard to the health of workers or the public. Cross-reference must be made to MCHW Appendix 1/23 (Substances Hazardous to Health) so that any restrictions, protection, or monitoring required for particular materials to safeguard site staff or the public can be incorporated into the construction phase plan.
- b) Provide details of any special requirements needed to ensure that adequate standards of hygiene and welfare are provided in accordance with the requirements of CDM 2007 where substances hazardous to health are to be used in the works e.g. the requirement for wheel washes to prevent the spread of contaminated land, the provision of adequate washing,

shower and changing facilities to ensure that hygiene is maintained within eating and other social facilities and the correct provision and use of personal protective equipment.

- c) Where testing equipment is to be used, which contains a radioactive source (e.g. nuclear density gauge or non-destructive testing equipment); any client specific procedures are to be included within the contract documents to ensure that the relevant statutory requirements are being met (i.e. The Ionisation Radiations Regulations 1999).

A7 Health and Safety File

Parties must endeavour to provide all the information required and requested by the **CDM co-ordinator** or other identified persons to enable the health and safety file during the pre-construction phase to be prepared and completed by the duty holder as specified with the contract documents.

The health and safety file must be prepared in a manner which allows the information to be readily retrieved, easily updated and integrated into existing information held by the health and safety file custodian.

The client may specify suitable backup requirements for health and safety files that are submitted in electronic format.

Annex B: Supplementary Guidance on the Construction Phase Plan

B1 This annex is provided as additional industry specific guidance, and is designed to compliment the requirements detailed in the Approved Code of Practice “Managing Health and Safety in Construction”, when preparing a construction phase health and safety plan. The construction phase plan must include or address all of the topics listed below to a level of detail consistent with the nature and scope of the proposed construction project and only where they are considered to be relevant. Where a heading is not relevant to a specific construction project the heading must remain in the plan with the comment “No specific requirement” included to indicate that the issue has been considered at the construction phase stage.

B2 Where “MCHW Appendix” numbers are referenced in this annex these relate to specification appendices in the Manual of Contract Documents for Highway Works. Where it is necessary to ensure that any clients’ health and safety requirements are covered by contractual obligations they must be incorporated on the drawings or in the specification for the works.

B3 Description of Project

Title of project, location and timescale for the work – brief description of project, cross-referenced to the drawings where necessary, to assist in defining the location. Timescales must be given where known.

Names and addresses of organisations and contact names and details of key individuals within the project team, including those with specific health and safety responsibilities.

The extent and location of existing records and plans and, if available, an existing health and safety file must be stated. Information pertinent to the scheme should be extracted as appropriate and included within the construction phase plan.

B4 Management of the Work

Structure and organisation – the roles and responsibilities, including those relating to health and safety, of key individuals managing the construction of the project such as the project sponsor, the principal contractor and the project directors/managers of the contractors must be described.

Safety goals for the project – reference must be made to the safety goals for the project as identified within the tender documents with details being provided of how the safety goals are to be achieved, additionally details for monitoring and reviewing of health and safety performance must be provided. Arrangements must be described for the implementation of recommendations made as a result of independent monitoring and reviewing of the construction phase plan by or on behalf of the client.

Details are required for the arrangements in place on site for:

- a) Regular liaison between all organisations identified in the project team and any other interested parties e.g. the police and statutory undertakers, to discuss issues relating to health and safety. The details must stipulate who is responsible for organising meetings relating to health and safety, how often those meetings are to take place and details for the dissemination of minutes, information etc. resulting from any meetings. Where works are being undertaken concurrently with other parties or work is being done for other parties, details of any requirements for co-ordinating health and safety or conditions to be imposed e.g. requirements when working near or over railways, must be recorded and procedures put in place for their implementation. Details of liaison between parties must also include:

- Details of any procedures that must be followed for collecting information required for the preparation of the health and safety file. The procedures must address the actions required of the principal contractor by the **CDM co-ordinator.**
 - Specific site liaison measures in relation to the management of health and safety on site e.g. appointment of specific staff to oversee health and safety issues. Cross-reference to MCHW Appendix 1/17 (Traffic Safety and Management) in relation to the need for a traffic safety and control officer.
 - Details of any specific procedures for reporting and dealing with unsafe practices and other health and safety problems arising during the project. Include procedures to be followed for reporting and resolving such problems between the various parties on site.
 - Arrangements and co-ordination requirements expected of the principal contractor to demonstrate the development and operation of a health and safety management system through obtaining information on health and safety provisions from contractors, the self-employed, designers and suppliers of materials, plant and machinery.
- b) Consultation with the workforce, to be undertaken in accordance with current legislation: The Safety Representatives and Safety Committees Regulations 1977 and The Health and Safety (Consultation with Employees) Regulations 1996. The details must stipulate who is responsible for organising the consultation, what form the consultation is to take, and details for the dissemination of any information resulting from the consultation process, particularly to any workers not present during the consultation process e.g. absentees, new starters.
- c) The exchange of design information between the organisations and key personnel on site. The details must identify:
- The person responsible for co-ordinating the exchange of design information,
 - Contacts within each organisation receiving and providing information,
 - The required format of the design information (e.g. media type, numbers of copies etc).
- d) Handling design changes during the project. The details must identify:
- The person responsible for coordinating design changes during the project,
 - Contacts within each organisation receiving/ providing design information,
 - The required format of the design information (e.g. media type, numbers of copies etc).
- e) The selection process for choosing contractors to work on the project and how it is intended to control contractors on site so as to minimise the risk of accidents occurring.
- f) The exchange of health and safety information between contractors/sub-contractors working on the project. Refer to (a) and (b) above.
- g) Security, site induction and on site training. The principal contractor must ensure, so far as is reasonably practicable, that the site is secure so as to prevent unauthorised access, including that from children and protestors, and that access/egress to the site including that for deliveries is provided in accordance with MCHW Appendix 1/17 (Traffic Safety and Management). The principal contractor must ensure that everyone who attends site to undertake, supervise or observe construction work is suitably inducted for the purpose of his or her attendance. Details must be recorded of who has been inducted, who carried out the induction and what was the content and format of the induction. The principal contractor must ensure that everyone who attends site to undertake and/or supervise construction work is suitably qualified and trained to a level considered essential to ensure the safe operation of the site. Details of qualifications and training of all contractors' employees must be recorded and any new/refresher training identified provided as soon as reasonably practicable. The principal contractor must appoint a person to coordinate induction and training on site.

- h) Welfare and first aid facilities on site, which must be provided in accordance with current legislation: CDM 2007 and The Health and Safety (First Aid) Regulations 1981 and in accordance with MCHW Appendix 1/1 (Temporary Accommodation and Equipment for the Employer's Representative) as a minimum.
- i) The reporting and investigation of accidents and incidents, including near misses, which must be undertaken in accordance with both the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 and the principal contractors own health and safety reporting system. Details must include to whom accidents and incidents should be reported. It is important that all persons on site know what are reportable accidents and incidents, the importance of reporting non injury accidents and incidents and that the principal contractor adopts a 'no blame' culture on site with regard to the reporting and investigation of accidents and near misses.
- j) The production and approval of risk assessments, method statements and permits to work. Details provided must identify the person responsible for coordinating the production and approval of risk assessments, method statements and permits to work and persons within each organisation responsible for producing and approving the aforementioned procedures. Additionally timescales within the approval process and the format, media type numbers of copies, circulation list and method of distribution must be identified. The details must also include procedures for obtaining temporary road closures or mandatory speed limits as identified within MCHW Appendix 1/17 (Traffic Safety and Management).

Site Rules - The principal contractor must provide details of site rules that have been developed to ensure that the management of health and safety on site is effective. As a guide site rules should be developed to cover the following, although it should be noted that this list is not exhaustive:

- a) Access and egress arrangements – comprehensive instruction as to any specific restrictions on access and egress points or phasing requirements for the construction of the works.
- b) Welfare – details of specific welfare provisions that are required to safeguard the health, safety and welfare of site staff e.g. sanitary and washing facilities, especially when contaminated land is present.
- c) Storage areas – provide details of any restrictions on storage areas for plant, materials or soil heaps. Cross-reference to MCHW Appendix 1/7 (Site Extent and Limitations on Use) as appropriate.
- d) Traffic/non-motorised user safety and management – details on any specific restrictions or instructions to be complied with in relation to traffic/non-motorised user safety, for example:
 - Traffic routes to and from the site. Cross-reference to MCHW Appendix 1/19 (Routeing of Vehicles) as appropriate.
 - Traffic safety and management measures to be implemented when carrying out work on roads open to traffic including consideration of the need for specific measures to protect workforce, motorists and general public such as temporary concrete barriers. Cross-reference to MCHW Appendix 1/17 (Traffic safety and Management) as appropriate.
 - Temporary traffic diversions. Cross-reference to MCHW Appendix 1/18 (Temporary Diversions for Traffic) as appropriate.
 - Movement of plant and machinery across public roads and the site. Cross-reference to MCHW Appendix 1/18 as appropriate.
 - Movement or diversion of pedestrian, equestrian or cycle routes across the site. Cross-reference to MCHW Appendix 1/18 as appropriate.

- Mandatory and/or advisory speed limits through the site or on adjacent roads approaching the site. Cross-reference to MCHW Appendix 1/17 (Traffic Safety and Management) as appropriate.
- Delineation of emergency routes through the site, including any restrictions in respect of obstructions or temporary use by plant of such routes. Cross-reference to MCHW Appendix 1/17 as appropriate.
- Safety zones to protect workforce giving widths, locations and means of delineation. Cross-reference to MCHW Appendix 1/17 as appropriate.

Fire and Emergency Procedures - Comprehensive details must be provided of all procedures that have been developed by the principal contractor or other contractors to cope with emergencies e.g. access through the site for the emergency services, fire fighting/evacuation procedures and arrangements for dealing with accidents including those that may occur in confined spaces, in the vicinity of water, whilst working at height or as a result of working near or with an identified/unidentified hazard. The details must include personnel appointed to co-ordinate fire and emergency procedures, training provided to all site staff in relation to fire and emergency procedures and methods of conveying to staff information relating to fire and emergency procedures. Additionally details are required of emergency procedures that may have to be implemented due to potential incidents on land adjacent to the site e.g. an incident involving a train carrying a hazardous substance or pesticides entering the groundwater system within the site.

B5 Arrangements for Controlling Significant Site Risks

Site risks can be categorised as either safety risks or health risks. The principal contractor must provide details of the arrangements he has made for controlling the following site and health risks. It should be noted that these lists are not exhaustive and are only intended as a guide.

Safety risks may include, but are not limited to, the following:

- a) Provision of services, e.g. telecommunications and electronic equipment, including any temporary installations to areas of temporary accommodation.
- b) Working at height e.g. in the construction of road bridges and drainage infrastructure.
- c) Working with or near fragile materials e.g. working on scaffold boards and roofs made of glass or perspex.
- d) The control of lifting operations e.g. the use of cranes, passenger lifts and mobile elevated work platforms and the inspection and testing of lifting equipment, which must be undertaken in accordance with The Lifting Operations and Lifting Equipment Regulations 1998.
- e) Dealing with statutory undertakers' equipment in the diversion of existing services and the provision of new services such as the electricity supply for road lighting.
- f) The maintenance of plant and equipment e.g. scaffold and hand tools in accordance with The Provision and Use of Work Equipment Regulations 1998.
- g) Working in or adjacent to poor ground conditions e.g. piling and de-watering operations.
- h) Traffic routes through and adjacent to the site including details of safe routes, the segregation of vehicles (both private and site) and non-motorised users, safe access/egress, safe and secure parking, provision of safe facilities for loading and unloading and provision for emergency vehicles.

- i) The transportation, storage, handling, use and disposal of hazardous materials e.g. contaminated land, gas bottles, paint, silane, radioactive materials and bituminous products.
- j) Procedures for dealing with existing unstable structures e.g. road bridges, household and business properties and fuel storage tanks at existing/derelict petrol stations.
- k) Accommodating adjacent land use e.g. by ensuring access is maintained.
- l) Working adjacent, on or under water e.g. during the inspection of abutments and piers that have been constructed partly underwater.
- m) Working within confined spaces e.g. in the construction, maintenance and inspection of tunnels, working within caissons and coffer dams, working within drainage trenches and sewers and working on gantries.
- n) Working at height using scaffold must be undertaken in a safe manner with the scaffold erected in accordance with good industry practice, this requirement for safe working at height includes the use of ladders, stepladders, mobile work platforms and hoists.
- o) Other significant safety risks identified by any duty holder within a permit to work, method statement, risk assessment or safe working procedure developed for a specific construction activity.
- p) Construction work must be undertaken in such a manner that any risks associated with a particular work activity are reduced to a level as low as is reasonably practicable.

Health risks may include, but are not limited to, the following:

- a) Working in environments containing asbestos and other hazardous/toxic substances such as ragwort, mould growth within tunnels, animal **faeces**, sources of radioactivity and bituminous materials. Work must be undertaken in accordance with substance specific legislation e.g. The Control of Asbestos at Work Regulations 2002 or general hazardous substance legislation such as The Control of Substances Hazardous to Health Regulations 2002 and the Chemicals (Hazard Information and Packaging for Supply) Regulations 1999.
- b) Dealing with contaminated land, which must be undertaken in accordance with MCHW Appendix 6/2 (Requirements for Dealing with Class U2 Unacceptable Material).
- c) Manual handling on site, which must be undertaken in accordance with the requirements of The Manual Handling Operations Regulations 1992.
- d) Working with display screen equipment, which must be undertaken in accordance with the Health and Safety (Display Screen Equipment) Regulations 1992.
- e) Noise and vibration on site, which must be controlled in compliance with Control of Noise at Work Regulations 2005 and Control of Vibration at Work Regulations 2005 and in accordance with MCHW Appendix 1/9 (Control of Noise and Vibration).
- f) The risks associated with adjacent land use, e.g. crop spraying or chemical factories, which must be identified and reduced to a level as low as is reasonably practicable.
- g) The use of electrical systems and equipment on site, which must be undertaken in accordance with the Electricity at Work Regulations 1989.



- h) The use of equipment on site utilising a radioactive substance, which must be undertaken in accordance with the Ionisation Radiations Regulations 1999.
- i) Other significant health risks identified by any contractor within a permit to work, method statement, risk assessment or safe working procedure developed for a specific construction activity.

The use of hazardous substances in any construction activity must be undertaken in such a manner that any risks associated with a particular material are reduced to a level as low as is reasonably practicable.

CDM 2007 (Part 3) requires the inspection of specific places of work including scaffold, excavations, cofferdams and caissons by a competent person. Copies of all inspection reports required under the CDM 2007 (part 3) must be retained within the construction phase health and safety plan.

B6 Health and Safety File

Parties must endeavour to provide all the information required and requested by the **CDM co-ordinator** or other identified person to enable the health and safety file within the construction phase to be prepared and completed by the duty holder as specified with **the contract documents**.

The health and safety file must be prepared in a manner in which the information can be readily retrieved, easily updated and integrated into existing information held by the health and safety file custodian.

The client may specify suitable backup requirements for health and safety files that are submitted in electronic format.

Annex C: Supplementary Guidance on the Health and Safety File

C1 This annex is provided as additional industry specific guidance and is designed to compliment the Approved Code of Practice “Managing Health and Safety in Construction” when preparing a health and safety file. The drawings and other information listed in the following sections must be provided as appropriate to form the health and safety file (file) for the project. The file must include or address all of the topics listed below to a level of detail consistent with the nature and **scope of the project** although only where they are considered relevant. Where a heading is not relevant to a specific construction project the heading must remain in the file with the comment “No specific requirement” included to indicate that the issue has been considered. The file for a project will in most instances be a composite document incorporating information on individual structures making up the project, although where a project incorporates a major structure such as a tunnel a separate file for this element may be appropriate. The **CDM co-ordinator** must ensure that the file is prepared, reviewed and amended as necessary and delivered to the client on completion of the overall project or on a structure-by-structure basis as appropriate. In practice, the file may be passed to or retained by the organisation responsible for maintenance. The format, media (e.g. paper, CD ROM, database, GIS database) and numbers of copies of the information contained in the file must be agreed between the client and the **CDM co-ordinator** on a project specific basis. The file must contain an index listing all drawings and other information provided with particular reference to relevant health and safety information held elsewhere to which the file simply cross-refers.

C2 As Built Drawings

Residual hazards must be highlighted on the as-built drawings. Only drawings relevant to health and safety must be included within the file. Examples are given below. The drawings should have any non-relevant background information removed for clarity.

General - General arrangement drawings referenced to the Ordnance Survey grid reference or maintenance reference system must include the following information:

- a) The horizontal alignment plan layout to a minimum scale of 1 to 2500 (1 to 1250 in urban areas);
- b) The vertical alignment showing the final and original ground levels on the centreline of the road, or new and existing surface levels where an existing road is reconstructed;
- c) The trunk road boundary and other relevant land boundaries

Earthworks – Earthworks drawings are to include the following information:

- a) Profiles depicting new and existing ground 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 of land, details of treatment and analysis of contaminants;
- c) Locations and details of treatment for any mine shafts, mine workings or similar voids 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 in **HD 22 (DMRB 4.1.2) and SH 4 (DMRB 4.1.7)**.

Drainage – Drainage drawings are to include the following information:

- a) Plans and sections of foul and surface water drainage networks depicting location and invert levels of chambers, types and sizes of pipes, bedding and backfill details and any protection;
- b) Plans showing locations of narrow filter drains including details of type and depth;
- c) Plans depicting outfalls into watercourses including the provision of oil interceptors or other pollution traps;
- d) Plans depicting balancing ponds and other drainage features
- e) Plans showing land drain connections;
- f) Types and locations of manholes and catchpits including details of any proprietary systems
- g) Types and locations of gullies, gratings and frames;
- h) Details of water bearing strata;
- i) Identification of locations and facilities requiring confined space procedures;
- j) Identification of areas susceptible to flooding.

Pavement – Pavement drawings are to depict the extent of pavement and include the following information:

- a) Details of materials used and mix design;
- b) Details of pavement layer thicknesses;
- c) Details of joints and reinforcement where appropriate (e.g. concrete pavements).

Road Structures – Records prepared to the requirements of **BD 62 (DMRB 3.2.1)** will be the primary source of information on road structures (refer to paragraph 6.3), with the health and safety file cross-referencing. Any additional significant health and safety issues not recorded in the structural records must be recorded within the file. General arrangement drawings identifying residual health and safety risks may also be included for clarity. It should be noted that the following are classified as road structures and therefore information must be recorded:

- a) CCTV masts;
- b) Portal and cantilever signs and signal gantries;
- c) Lighting columns.

Fencing - Fencing drawings are to identify the location of fencing and provide details on type of fence, protection given and type of protective treatment (e.g. wood preservative). Any special feature such as additional netting should be identified, with its function clearly stated (e.g. to retain a particular species of fauna).

Road Restraint Systems – Road restraint system drawings are to include the following information:

- a) Plans depicting the location and types of road restraint systems used;
- b) Details of post fixings, and any instructions or drawings used in the installation;
- c) Manufacturer's inspection, repair and maintenance instructions;
- d) For tensioned systems, procedures for de-tensioning.

Road markings and traffic signs - Drawings are to depict the locations and details of road markings and traffic signs including materials, fabrication, foundations, lighting and power supply where applicable.

Traffic signals – Traffic signals drawings are to depict the locations of traffic signal apparatus and routes of cables, power supply and connections to any signal control systems (e.g. SCOOT, MOVA). They should also detail types of signal heads and detectors. A statement of the equipment's functionality must also be provided.

Lighting - Drawings are to depict the location of road lighting apparatus and include details of columns, lanterns, foundations and power supply.

Statutory Undertakers' Equipment - Drawings identifying statutory undertakers' equipment are to include the following information:

- a) Plan layouts showing the location of equipment and identifying the responsible authority;
- b) Depth, size and type of equipment;
- c) Methods of marking and identifying of statutory undertakers;
- d) A note stating that any future proposals require liaison with the relevant authority.

Control and Communications Equipment – Drawings are required to identify the location and details of equipment. The drawings must identify routes of interconnecting cables and power supply. A statement of the equipment's functionality must be included.

Legal Requirements - Plans must be included to identify the area of land available for road maintenance and possible future road improvements. Discharge rights and legal agreements for maintenance of drainage etc must be shown.

C3 Design Information

Design information relevant to health and safety must be provided. In providing design information

the designer must refer to the requirements of the relevant DMRB documentation and any site specific issues. The information identified in this section should not be considered an exhaustive list.

The following design information relating to road structures must be provided where relevant:

- a) Reference to the structural records prepared in accordance with **BD 62 (DMRB 3.2.1)**;
- b) A design summary including the height, width, design loads and load restrictions of road bridges;
- c) Completed approval in principle (AIP) and design checks and certificates;
- d) Other design requirements in accordance with Volume 1 of the DMRB;
- e) For sub-structures and special structures design information must be provided in accordance with Volume 2 of the DMRB. Design information for any tunnels to be in accordance with **BD 78 (DMRB 2.2.9)**.

Design information relating to safety barriers must specify the classification of barrier with justification of the system(s) selected. Details of barrier length, set-back and working width in compliance with **TD 19 (DMRB 2.2.8)** must be included.

Design parameters used for earthworks slope calculations and drainage calculations, including storm periods, must be provided in compliance with Volume 4 of the DMRB.

Pavement design information must be in compliance with Volume 7 of the DMRB and must include traffic flow details including appropriate information on predicted and actual traffic growth. Pavement design loadings and any assumptions made in the calculations (e.g. strength of sub-grade) must be identified.

Details of road lighting and traffic signal calculations, including signal timings and predicted queue lengths, must be provided in compliance with Volumes 8 and 9 of the DMRB.

Details for designed and retained maintenance crossovers, including design speed, length and pavement details must be provided;

C4 Construction methods

Reference must be made to the structural records prepared in accordance with **BD 62 (DMRB 3.2.1)** for information that may be relevant if a structure has to be extensively modified, e.g. where a road structure is post tensioned.

Information must be provided on methods of construction where special techniques were necessary. These may include dewatering or ground freezing, lime stabilisation, use of caissons or cofferdams to construct underwater structures, site specific traffic management layouts utilised in the construction of the project, and the use of lightweight fill materials such as polystyrene in the construction of embankments.

Health and safety problems not anticipated in the pre-construction phase that subsequently arose during construction must be identified, with details of the steps taken to overcome them. An

example would be unstable ground conditions and the use of sheet piling to retain excavations.

C5 Materials

Safety data must be provided for hazardous proprietary materials (e.g. paints and protective coatings used on road structures) and existing hazardous products (e.g. asbestos drainage pipes, contaminated land) used or retained in the project. Data on other materials must be included where it is anticipated that they may become difficult to obtain at a later date. Where sub-contractors were responsible for operations involving the installation or application of products or materials, names and addresses must be given. Where this information is related to road structures it is contained in the structural records prepared in accordance with **BD 62 (DMRB 3.2.1)** and must be included in the health and safety file by reference.

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 where not otherwise included in operation and maintenance manuals.

C6 Maintenance procedures

Full information on maintenance facilities, procedures, and manuals for road structures must be provided in the structural records prepared in accordance with **BD 62 (DMRB 3.2.1)** and included in the health and safety file by reference.

Information on the inspection, maintenance, repair, and assessment of road structures including tunnels and buried concrete box structures must be provided in accordance with the requirements of Volume 3 of the DMRB.

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 road structure as defined within **BD 62 (DMRB 3.2.1)** 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, e.g. access and egress arrangements for structures, lane closure arrangements for maintenance work and temporary cross-over arrangements on dual carriageways in accordance with **TA 92 (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 hazardous or toxic substances may be present:

- a) Where used in the construction process;
- b) 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);

- c) Due to maintenance, inspection and testing procedures requiring the use of substances hazardous to health (e.g. silane used in the impregnation of concrete road 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 in Paragraph C5 (above).

C7 Demolition

Information on the health and safety implications of temporary or permanent decommissioning, demolition or dismantling of structures is required where this is anticipated or proposed (e.g. to renew time-expired components such as joints or bearings). Where this information is related to road structures it is contained in the structural records prepared in accordance with **BD 62 (DMRB 3.2.1)** and must be included in the health and safety file by reference.

Potential health and safety problems with the future demolition of any structure must be highlighted (e.g. post-tensioned road structures, hazardous substances such as lead that were traditionally used in the manufacture of paint, statutory undertakers' equipment).

Potential hazards to those outside of the site or working area, arising from the removal of plant, machinery or equipment (particularly electrical installations) must be identified.

APPENDIX A

List of Documents to be Withdrawn / Amended

Standard / Advice Note etc.	Title	Source	Aspect	Replacement Document
TS IA 27	Implementation of the Construction (Design and Management) Regulations 2007 and the withdrawal of SD 10/05 and SD 11/05	Transport Scotland	References to duty holders have, where necessary, been revised to better represent the requirements of CDM 2007.	This interim amendment TS IA 27 Rev 01