DMRB Briefing note

DATE: 01 June 2020 **CONFIDENTIALITY:** Public

CHANGES TO THE STRUCTURES PART OF THE DMRB

The DMRB is undergoing a transformation into a new and consistent format. This briefing note outlines the headline changes that are being introduced to the structures and bridges documents.

Organisation of the structures and bridges documents

All of the old-style DMRB document codes are being replaced with new document codes, comprising 2 letters followed by a 3-digit number. All new-style civil engineering documents (including structures and bridges) have a document code that begins with a **C.** Refer to Table 1 for the other parts of the DMRB.

Table 1 – Parts of the DMRB

Parts of the DMRB	Disciplines
G - General principles and scheme governance	General principles and scheme governance
L - Sustainability and environment	Sustainability and environment
C - Civil engineering	Road layout; Pavement; Structures and bridges; Drainage; Geotechnics
T - Technology	Control and communications technology; Road lighting

The second letter in the new document code is determined by the life-cycle stage. Table 2 shows how the structures and bridges documents are organised, with some examples. By March 2020, there will be 60 structures and bridges documents. The full list of structures documents may be accessed through www.standardsforhighways.co.uk.

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Table 2 - Organisation of structures and bridges documents

2-letter part and volume code	Example document
CG - General information	**CG 300** Technical approval of highway structures
CA - Appraisal	(None at this time)
CD - Design	**CD 350** Use of Eurocodes for design
CC - Construction	(None at this time - refer to MCHW)
CM - Maintenance and operation	**CM 430** Maintenance of road tunnels
CS - Inspection and assessment	**CS 450** Inspection of highway structures
CZ - Disposal	(None at this time - refer to MCHW and **GG 105** for asbestos management).

Further details of the new DMRB coding system may be found at https://highwaysengland.co.uk/innovation-hub/our-approach/about-the-new-dmrb/.

Overview of key updates

The majority of the changes in the structures and bridges documents comprise an editorial consolidation of the material in the previous versions of the DMRB documents and the related interim advice notes, removing duplications and out-of-date material, often achieving a much more concise and clear definition of the requirements. For example, **CD 357** Bridge expansion joints has replaced BD 33, BA26, IAN 168 and IAN 169, distilling the material from 4 documents into a single document. However, even though the changes are mostly editorial, nearly all the documents have some degree of technical change. For example, **CD 357** now permits expansion joints to be designed in accordance with ETAG 032.

Across the range of documents for structures and bridges, opportunity has been taken to improve the technical content where possible and bring the documents up to date, including alignment with European standards and legislation, implementing the findings of research and addressing feedback.

Some examples of the technical changes incorporated in this round of updates are listed in Table 3. Additional research activities are planned to enable further technical improvements to be incorporated in subsequent revisions.

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Table 3 - Some examples of key technical changes in structures and bridges documents

Document	Examples of key technical changes
CD 351 The design and appearance of highway structures	New content developed to complement the principles of good road design in **GG 103**
CS 454 Assessment of bridges and highway structures	Reduced assessment live loading for traffic; Restrictions on the use of the modified MEXE method for arch assessment; Includes core requirements and advice from BA16, now withdrawn
CS 455 Assessment of concrete bridges and highway structures	New options for calculating worst credible strength of concrete; New rules for the effect of low cover on reinforcement bond; New section on strut-and-tie analysis
CS 459 The assessment of bridge substructures, retaining structures and buried structures	New option for a Eurocode approach to basis of assessment
CS 466 Risk management and structural assessment of reinforced concrete half-joints, and **CS 467** Risk management and structural assessment of deck hinges	New methods for managing risks; New methods for structural analysis and assessment, including guidance on incorporating defects and the efficient use of strut and tie analysis

The editorial updates have also moved content to the most appropriate location, including transferring all requirements for construction into the MCHW.

In some documents it has been appropriate to extensively reference or implement third-party documents – examples include **CD 371** Strengthening highway structures using fibre-reinforced polymers and externally bonded steel plates, which extensively references The Concrete Society Technical Report 55, and **CD 350** The use of Eurocodes for design, which implements the Eurocodes and the associated BSI published documents. References to withdrawn third-party documents have been avoided where possible, however there are exceptions, including **CS 456** The assessment of steel bridges and highway structures, where it has been necessary to continue to implement the withdrawn BS 5400:3, for the time being.

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Implementation

The requirements regarding implementation of the new documents, including whether the new documents apply to existing contracts, are given in **GG 101**. The default position stated in **GG 101** is to use the new documents as soon as they are published, although some exceptions can be proposed in accordance with **GG 101**, for example, where the contract has reached a stage that the implementation of the new documents would result in significant additional expense or delay.

For the structures documents, most of the documents are expected to be implemented when they are needed, for example when triggered by a specific contract or event. However, there are a few documents which shall be used proactively, such as those relating to the risk management of existing structures: **CS 465** Management of post-tensioned concrete bridges, **CS 466** Risk management and structural assessment of reinforced concrete half-joints, **CS 467** Risk management and structural assessment of deck hinges and **CS 470** Management of sub-standard highway structures. For these documents it is expected that implementation documents will be published.

Benefits and Impact

The republication and updating of the structures documents will result in:

- Up to date suite of documents in line with current industry practice
- Reduced number of documents
- Complementary with European and National standards and reflecting published industry guidance
- Compliance with UK legislation
- Improved clarity on requirements and associated advice by being consistently formatted
- Improved governance in contracts
- Less departures from standards
- Easier to update in the future
- Support future innovation
- Improved safety
- Support all Highways England imperatives and values

Feedback

Comments, suggestions and queries on the new documents may be addressed to Standards_Enquiries@highwaysengland.co.uk.