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Foreword

Professor John Roberts, Principal, Technical Innovation Consultancy

Welcome to the BSI *The essential guide to Eurocodes transition* Publication prepared to support the UK construction industry through one of the most significant developments in construction standardization. The withdrawal of conflicting national standards at the end of March 2010 presents the opportunity for designers to fully engage with the coherent set of modern design codes which the Eurocodes provide.

Structural Eurocodes are seen as leading the way in structural codes worldwide. Their flexibility enables adoption and use not only within Europe, but internationally. This feature has been recognized by several countries outside Europe and they are already committed to adopting Eurocodes.

The primary objectives of the Eurocodes are to:

- provide common design criteria and methods of meeting necessary requirements for mechanical resistance, stability and resistance to fire, including aspects of durability and economy;
- provide a common understanding regarding the design of structures between owners, operators and users, designers, contractors and manufacturers of construction products;
- facilitate the marketing and use of structural components and kits in EU Member States;
- facilitate the marketing and use of materials and constituent products, the properties of which enter into design calculations;
- be a common basis for research and development, in the construction industry
- allow the preparation of common design aids and software;
- increase the competitiveness of the European civil engineering firms, contractors, designers and product manufacturers in their global activities.

It is a legal requirement from March 2010 that all European public-sector clients base their planning and building control applications on structural
designs that meet the requirements of the Eurocodes. In anticipation of this, changes are necessary to the Building Regulations.

Approved Document A for Building Regulations in England and Wales, which provides guidance on how to comply with Part A (structure) of the regulations, lists 22 of the national codes being withdrawn in 2010 but will not be revised by the Communities and Local Government (CLG) department until 2013. CLG have clarified the legal position through a circular letter dated the 29th January 2010 and available on their website http://www.communities.gov.uk/corporate/publications/all/.

The Scottish structural guidance is provided in section 1 of the Domestic Handbook and section 1 of the Non-Domestic Handbook. The Scottish Government plans to publish revised guidance incorporating Eurocodes that will come into effect in 2010.

In Northern Ireland, Technical Booklet D:1994, Structure will be revised to include references to Eurocodes alongside withdrawn British Standards.

The withdrawn British Standards may still be used to achieve compliance with UK building regulations for private sector work but they will no longer be maintained by BSI and will increasingly become out of date.

Each of the Eurocode parts is produced by a subcommittee under the guidance and co-ordination of a technical committee (CEN/TC 250). Delegates of the 29 Comité Européen de Normalisation (CEN) members are represented on CEN/TC 250 and its subcommittees.

Drafts of the Eurocode parts are elaborated by project teams, which are selected by the appropriate sub-committees. A project team consists of about six experts who represent the subcommittee. A vast majority of the project teams include a UK-based expert.

A Eurocode is subject to extensive consultation before it is adopted. Progressive drafts are discussed and commented on by CEN members and their appointed experts. A Eurocode part is adopted only after a positive vote by CEN Members.

This BSI Structural Eurocodes Transition Publication contains articles from leading academics and professionals to help you gain an understanding of the nature of the new codes and to ease your transition into using the new structural design codes.
Structural Eurocodes – Frequently Asked Questions

1 What are Eurocodes?

Structural Eurocodes are a set of harmonized European standards for the design of buildings and civil engineering structures. There are 10 Eurocodes made up of 58 parts that will be adopted in all EU Member states.

In the UK, they will replace over 50 existing British Standards that are due to be withdrawn on 31 March 2010 when full implementation of the Eurocodes will take place.

Eurocodes are a recommended means of giving a presumption of conformity to the essential requirements of the Construction Products Directive for products that bear CE Marking, as well as the preferred reference for technical specifications in public contracts.

Eurocodes cover the basis of structural design, actions on structures, the design of concrete, steel, composite steel and concrete, timber, masonry and aluminium structures, geotechnical design and the design of structures for earthquake resistance.

2 How do I use Eurocodes?

Eurocodes are designed to be used as a suite of documents, which means that for most projects more than one code will be needed e.g. BS EN 1990 Basis of Structural Design is always required.

In addition, Eurocodes are designed to be used with a national annex, which is available separately but is essential for compliance with the code.
Other documents required for using Eurocodes are the so-called Non-Contradictory Complementary Information (NCCI) documents. The status of these documents can vary. As the name suggests they provide supplementary material, that may be useful, but are not always essential for compliance with the Eurocodes.

Other documents include Execution Standards, which provide requirements for execution of structures that have been designed in accordance with Eurocodes.

3 What are national annexes and how do I use them?

In order to allow for the variety of climatic and other factors across the European Union each Member State may produce a national annex for each of the 58 Eurocode parts.

This will include

- Alternative values
- Country specific data (geographical, climatic, etc.)
- Alternative procedures.

It may also contain:

- Decisions on the application of informative annexes
- References to Non-Contradictory Complementary Information (NCCI).

Where a national annex is published it is essential to use it to comply with the Eurocode.

Where no national annex is available or no Nationally Determined Parameters (NDPs) are chosen the choice of the relevant values (e.g. the recommended value), classes or alternative method will be the responsibility of the designer, taking into account the conditions of the project and the National provisions.

NOTE: there will be no national annex to BS EN 1998-3 in the UK.

For information and to purchase national annexes applicable outside the UK contact BSI Distributor sales on 020 8996 7511 or email Distributor.Sales@bsigroup.com.
4 What are Nationally Determined Parameters?

The foreword of each Eurocode states that it recognizes the responsibilities of regulatory authorities in each Member State and protects their right to determine values related to regulatory safety matters at a national level where these continue to vary from State to State.

Accordingly, each Eurocode contains a number of parameters which are left open for national choice, called Nationally Determined Parameters (NDPs). The NDPs account for possible differences in geographical or climatic conditions, or in ways of life, as well as different levels of protection that may prevail at national, regional or local level. Recommended values for the NDPs are also provided in the Eurocodes.

5 What are NCCI and how do I use them?

Non-Contradictory Complementary Information (NCCI) are documents that the National committees consider useful for assisting the user to apply the Eurocode. They are not essential for compliance with the Eurocode but may provide background material or other guidance.

They have been approved by the BSI Committee and are usually listed in Clause NA.4 of the national annex.

This does not mean that all NCCI documents are produced by BSI however. They are not necessarily British Standards and may be published by other organisations.

6 What are Execution Standards and how do I use them?

These documents have been produced in support of the Eurocodes and are applicable to designs in accordance with the Eurocodes.

The Masonry Eurocode includes its own execution part (BS EN 1996-2) but other areas such as Concrete, Steel, and Geotechnics have separate documents, outside the Eurocodes suite, dealing with execution and workmanship.
7 How will Eurocodes be maintained and developed?

Eurocodes will be maintained and developed by the CEN/TC250 committee. Their responsibilities will include:

- Correction of errors
- Technical and editorial improvements
- Technical amendments with regard to urgent matters of health and safety
- Resolution of questions of interpretation
- Elimination of inconsistencies and misleading statements.

They will also approve any corrigendum (e.g. removal of printing and linguistic errors) or amendment (e.g. modification, addition or deletion of specific parts), as appropriate.

In addition, future editions of the Eurocodes, such as new annexes or parts and eventually new Eurocodes will be needed to include guidance reflecting new European Union policies, innovative design methods, construction techniques, new materials, products and the like.

8 What are the benefits of using the new Eurocodes?

- They will facilitate the acquisition of public sector contracts
- They will facilitate the acquisition of European contracts
- They are among the most advanced technical views prepared by the best informed groups of experts in their fields across Europe
- They are the most comprehensive treatment of subjects, with many aspects not previously codified now being covered by agreed procedures
- They provide a design framework and detailed implementation rules which are valid across Europe and likely to find significant usage worldwide
- They provide common design criteria and methods of meeting necessary requirements for mechanical resistance, stability and resistance to fire
- They provide a common understanding regarding the design of structures between owners, operators and users, designers, contractors and manufacturers of construction products
- They facilitate the marketing and use of structural components and kits in EU Member States
- They facilitate marketing and use of materials and constituent products, the properties of which enter into design calculations
• They enable the preparation of common design aids and software
• They increase competitiveness of European civil engineering firms, contractors, designers and product manufacturers in their global activities.

9 Have all of the Eurocodes been published?

Yes, BSI has now published all of the harmonized codes and national annexes.

The British Standards referred to in Part A of the Building Regulations will be withdrawn on the 31st of March 2010 and be replaced by a new, more technologically sophisticated set of British Standards – the Eurocodes.

10 What happens to the standards I currently use?

Following publication of a European standard, BSI is obliged to withdraw conflicting standards i.e. those within the same scope and field of application as the European standard. Where the national standard is not in a one-to-one relationship with the European standard, the national standard will be amended or revised to delete the conflicting requirements and to reflect the changed scope.

Withdrawn documents are still available and remain in the BSI catalogue for historical information purposes but a BSI committee no longer maintains withdrawn standards. That means that there is no 5-year review when a committee considers the currency of a standard and decides whether to confirm, revise or withdraw it.

11 What happens if I continue to use the old British Standards?

BSI committees have already stopped updating the British Standards to be withdrawn on the 31st of March 2010, so designers need to be mindful of insurance and liability issues if they continue to use them.

The new standards will become the preferred means of demonstrating compliance under the Public Contracts Regulations 2006 and the Construction Products Directive.
12 Is there a legal or insurance-related risk arising from continuing to use the old British Standards?

In any legal proceedings relating to structural design, the courts and other dispute-resolution forums will refer to Eurocodes – the state-of-the-art standards – to reach their decisions. Continuing to use withdrawn standards could put structural designers and their insurers at increasing risk.

There is a risk that with a dual system engineers will use codes to suit themselves and this could introduce further confusion and risk.

13 Which projects use Eurocodes?

The choice of which standards to use will be influenced by EU Directives such as those on public procurement and construction products, which are enacted in the UK as the Public Contracts Regulations 2006 and the Construction Products Regulations 1991 respectively. As such, most UK public sector organizations, utilities and product manufacturers intend to use Eurocodes for all new designs after April 2010.

The Highways Authority (England Wales and Northern Ireland) will expect new designs to be in accordance with Eurocodes after March 2010. The Highways Authority requirements will be described in an Advice Note (an IAN) which will be published shortly. The actual standards to be used on a project will be defined in the AIP (Approval in Principle) document for each contract.

Network Rail will require new work from March 2010 to be in accordance with Eurocodes.

14 Has Eurocode implementation been held up by the delay to the revision of Approved Document A?

A revision to Part A to update the referenced standards has been delayed for unrelated reasons and CLG remains fully supportive of the new British Standards.

There is nothing to stop designers using British Standards cited in the Regulations, it is ‘legally permissible’ to use them, though they should be aware of the comments in Q12.
15 Many engineers are not ready for the new British Standards, why does BSI not postpone withdrawal?

Both BSI and the Government have a legal obligation to meet the agreed date for Europe-wide implementation of the Eurocodes (i.e. 31 March 2010). The CEN agreement to create and apply harmonized standards is made between European governments and then delegated to their National Standards Bodies.

16 How can I purchase Eurocodes?

Eurocodes are published and sold in each country by the National Standards Body and in the United Kingdom can be purchased from BSI at http://shop.bsigroup.com/eurocodes.

17 What kind of guidance on Eurocodes is available from BSI?

Eurocode core documentation

BSI has published all 58 Eurocodes with national annexes, associated NCCI and PD. See the Eurocodes website for more information http://shop.bsigroup.com/eurocodes.

New online managed collection

BSI has recently made available a managed PDF collection of the full set of Eurocodes and national annexes. More information can be requested at http://shop.bsigroup.com/eurocodesmanagedcollection

Commentary, guidance, master classes, conferences

BSI has designed a series of master classes, publications and an annual conference on key Eurocode themes covering key design materials such as concrete, steel, timber.

Further information can be received from http://shop.bsigroup.com/eurocodes