



OFFICE OF THE  
DEPUTY PRIME MINISTER

# Implementation of Structural Eurocodes in the UK

February 2003

Produced by the Office of the Deputy Prime Minister

Office of the Deputy Prime Minister  
Eland House  
Bressenden Place  
London SW1E 5DU  
Telephone 020 7944 3000  
Internet service [www.odpm.gov.uk](http://www.odpm.gov.uk)

© Crown copyright 2003.

*Copyright in the typographical arrangement and design rests with the Crown.*

*This publication (excluding the Royal Arms and logos) may be reproduced free of charge in any format or medium provided that it is reproduced accurately and not used in a misleading context. The material must be acknowledged as Crown copyright with the title and source of the publication specified.*

Further copies of this report are available from:  
ODPM Free Literature

PO Box 236  
Wetherby  
West Yorkshire  
LS23 7NB  
Tel: 0870 1226 236  
Fax: 0870 1226 237  
Textphone: 0870 1207 405  
E-mail: [odpm@twoten.press.net](mailto:odpm@twoten.press.net)

This document is also available on the ODPM website: <http://www.safety.odpm.gov.uk/bregs/index.htm>

Published by the Office of the Deputy Prime Minister. Printed in the UK, February 2003, on material containing 75% post-consumer waste and 25% ECF pulp.

Product code 02BR00877.

# CONTENTS

## **SECTION 1**

Introduction	3
--------------	---

## **SECTION 2**

The Eurocodes	4
---------------	---

## **SECTION 3**

Publication of the Eurocodes	6
------------------------------	---

## **SECTION 4**

The Eurocodes – a different approach	7
--------------------------------------	---

## **SECTION 5**

Introduction and use of Eurocodes in the UK	9
---	---

## **SECTION 6**

Use of Eurocodes in the design of products	11
--	----

## **SECTION 7**

Education and training, software and handbooks, amendments, innovative methods	13
--	----

## **SECTION 8**

Further sources of information	14
--------------------------------	----

## **ANNEX 1**

List of Parts of Eurocodes in current programme	15
---	----

## **ANNEX 2**

Packages of Eurocode Parts	16
----------------------------	----

## **ANNEX 3**

Regulatory System for Construction in the United Kingdom	17
--	----

## **ANNEX 4**

Illustration of General Timetable from Date of Availability to withdrawal of National Codes	19
---	----



# SECTION 1

## Introduction

In most countries the design of civil and structural engineering works is usually based on the recommendations of Codes of Practice, or similar. In the UK, there is a comprehensive set of Codes covering many aspects of design for all of the main structural materials. The Codes are published by the British Standards Institution, are well respected, and find use in many countries outside the UK.

As part of the European Union's desire to remove technical barriers to trade, a set of European Codes of Practice in the field of civil and structural engineering is being published by CEN, the Standards body for Europe.

This publication aims to explain the phased introduction of Eurocodes and how they will be used nationally for the design of civil and structural engineering works and their parallel use in some Product Standards. It explains in simple terms the European Commission's uniform approach to implementing the Eurocodes as published in its Guidance Paper L – *Application and Use of Eurocodes*.

The ODPM publication *CE marking under the Construction Products Directive* can usefully be referred to in relation to the placing on the market of products for which there are European harmonised Standards or Technical Approvals.

The Eurocodes aim 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 exchange of construction services between Members States;
- facilitate the marketing and use of structural components and kits in Members 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; and
- increase the competitiveness of the European civil engineering firms, contractors, designers and product manufacturers in their world-wide activities.

The UK has participated actively in the drafting of the Eurocodes; significant resources have been made available by Government, Agencies and Industry in order to assist in achieving results beneficial to UK interests.

# SECTION 2

## The Eurocodes

The Eurocode programme started many years ago under the direct auspices of the Commission. Although draft Codes for some aspects of design were published for comment at that time the responsibility for drafting these technically demanding documents was subsequently passed to CEN, whose members are the National Standards Bodies (NSBs) eg. BSI, in the UK.

The programme of Eurocodes includes ten main subjects, covering Basis of Structural Design, Actions (Loading), Geotechnics, Earthquake Resistance, and each of the main structural materials, as follows:

EN 1990 Basis of structural design

EN 1991 Actions on structures

EN 1992 Design of concrete structures

EN 1993 Design of steel structures

EN 1994 Design of composite steel and concrete structures

EN 1995 Design of timber structures

EN 1996 Design of masonry structures

EN 1997 Geotechnical design

EN 1998 Design of structures for earthquake resistance

EN 1999 Design of aluminium structures

Each of the ten main subjects listed above, except for EN 1990, has been subdivided into a number of Parts covering specific aspects of the main subject. The full list is given in Annex 1.

EN 1991 is subdivided into ten Parts, each dealing with a group of aspects, or a single aspect, of Actions.

All of the Eurocodes relating to materials have a Part 1, e.g., EN1992-1-1, which covers the design of civil engineering works and buildings. Eurocodes 2, 3, 4 and 5 relating to concrete, steel, composite steel and concrete, and timber have a Part 2 dealing with supplementary rules for bridges and a Part 1-2, eg. EN1992-1-2, dealing with structural aspects of fire design. The masonry Eurocodes has no Part dealing with bridges, but it does have a Part 1-2 for fire design. The steel Eurocode 3 has the largest number of other Parts dealing with detailed aspects of design.

The Eurocodes are recognised by Member States of the European Economic Area (EEA) to serve as

- a framework for drawing up harmonised technical specifications for construction products; and
- a means of demonstrating compliance of building and civil engineering works with Building Regulations, the National requirements for other regulated works eg. the Highways Agency's BD Standards and with the essential requirements of the Construction Products Directive (CPD), Council Directive 89/106/EEC; and
- a basis for specifying contracts for construction works and related engineering services.

*Note:* The CPD contains six essential requirements, as listed below; the Eurocodes are relevant to numbers 1 and 2:

- No. 1     Mechanical resistance and stability
- No. 2     Safety in case of fire
- No. 3     Hygiene, health and the environment
- No. 4     Safety in use
- No. 5     Protection against noise
- No. 6     Energy, economy and heat retention

The European Union has no intention at present to harmonise laws relating to building and civil engineering works. This means that, in countries where prescriptive requirements for structural design are given in laws, the Eurocodes, as published by the relevant NSBs, will not automatically be acceptable as a means of proving compliance with the law. However, Member States have agreed that, in principle, they will make the Eurocodes available for use in their countries. This is essential in view of the eventual withdrawal of conflicting National Codes.

## SECTION 3

# Publication of the Eurocodes

The Eurocodes are CEN Standards and, as such, must be published in every country whose National Standards Body is a member of CEN. Conflicting national standards must subsequently be withdrawn. After approval in a formal vote by Member States a Standard reaches the Date of Availability (DAV) in its development stage and, to a fixed timetable, the National Standards Body publishes the document as a National Standard using its unique document reference, eg. BS EN 1990-1-1: 2002 in the UK or DIN EN 1990-1-1: 2002 in Germany.

Each CEN document is published in English, French and German. Those countries that do not use English, French or German may translate and publish the document in their own language(s).

A National title page, a National Foreword together with a National Annex, may be added to the document made available by CEN (see Section 4). NSBs will not be allowed to change any part of the normative text given in the core CEN document.

The National Annex is normally an integral part of a CEN product Standard. For the Eurocodes, the rules for the timing of the publication of CEN Standards after DAV may preclude simultaneous publication of the Standard and National Annex. There could be considerable advantages in National Annexes being published separately from the Eurocodes. For example, designers operating in several countries would only have to purchase one Code plus the relevant National Annexes.

British Standards, including Codes of Practice, are usually made available for public comment prior to publication. The arrangements for the Eurocodes has been different. When CEN took over responsibility for drafting the Eurocodes they decided to firstly publish the Eurocodes as ENVs, which are trial Codes intended for experimental use. After a minimum period of two years, CEN requested the National Standards Bodies to collect comments on the use of the ENVs. These became the National comments on the ENVs and had a significant impact on the development of the EN Eurocodes.



## SECTION 4

# The Eurocodes – a different approach

In the UK we are familiar with British Standard Codes of Practice – recommendations and guidance based on experience and practice, often with explanations, but complete in themselves. The Eurocodes aim to give consistent recommendations, written in a standard style that will enable easy use regardless of the structural material or particular application involved. However, because of the large number of people who have contributed to the writing of the Eurocodes, and the need to recognise variations in practice across Europe, the first generation of EN Eurocodes may not fully live up to this ideal.

The following definitions need to be understood in order to follow the introduction of Eurocodes into the UK:

Packages

Coexistence

National Provisions

Nationally Determined Parameter

Differentiation of Principles and Application Rules

CEN terms: Harmonised product standard; normative; informative; National Annex, Date of Availability (DAV).

**Packages:** With over 50 Parts in the Eurocode programme, some specifically for buildings, others for bridges and some for specialist areas, such as tanks and silos or cranes, order is required to enable a smooth transition from National Codes to Eurocodes.

The Parts have, therefore, been grouped into Packages, each of which must be complete before full implementation of that set of Codes. ENs 1990, 1991, 1997 and 1998 do not appear as Packages, in themselves, but their Parts are integrated into the Packages for the materials, for example, the Package for Concrete buildings includes seven Parts of EN 1991, so that all of the information needed to load the structure will be available when the design Code is available. The full list of Packages is given in Annex 2.

**Coexistence:** A period of transition during which both the National Code and Eurocode are valid. CEN has a standard procedure for the withdrawal of National Standards after European ones become available (packaging can still apply, though). With the Commission's involvement in the drafting of Eurocodes, it was decided that an even longer period from DAV to withdrawal was necessary in view of the work that needs to be undertaken by national Regulators and the fact that the Eurocodes are longer and more complex documents than product Standards.

**National Provisions:** National laws, the regulations and administrative provisions; in the UK, for building works, this would mean the Building Regulations. For bridges, it would be those of the competent authority, e.g. Highways Agency or Rail Authority. National provisions can also arise from public undertakings or licensing bodies.

**Nationally Determined Parameter (NDP):** Since the Eurocodes may be used to satisfy Building Regulations, they have to recognise a principle stated in the CPD that the level of safety in a Country remains its prerogative. Laws governing building regulations are not at present being harmonised, so the detailed requirements and safety levels required for regulations could vary from country to country. This means that safety factors, together with certain other parameters, must be left open for selection nationally. Accordingly, the concept of allowing such parameters (which must be clearly identified in the Eurocode) to be varied nationally, has been developed. These are referred to as Nationally Determined Parameters.

**Differentiation of Principles and Application Rules:** The Eurocode Parts divide their clauses into Principles and Application Rules. The Principles are general statements, definitions, requirements and analytical models for which there is no alternative at all or no alternative is permitted in the Part. They are identified by (P) after the clause number.

Application Rules are generally recognised rules, which are recommended methods of achieving the Principles, and satisfy the requirements within the Scope of the Part.

#### **CEN Terms:**

- |                             |   |
|-----------------------------|---|
| Harmonised Product Standard | – A CEN Standard (hEN), comprising a Technical Specification for a product, that includes in a series of Annexes, requirements to meet a Mandate from the Commission for certain properties of that product, so that it can receive CE marking.   |
| Normative                   | – The term used for the text of Standards that forms the requirements.  |
| Informative                 | – A term used only in relation to Annexes which seek to inform rather than require (see also Section 5).  |
| National Annex              | – Many EN product standards are published with a National Annex, but there is no requirement to have one. For the Eurocodes, it is recommended that they should always have a National Annex as a place to list NDPs and other things where an element of national choice exists, although it is permitted to list these in whatever document the Country finds convenient. |
| Date of Availability (DAV)  | – This is the date when CEN makes the Eurocode Part available to National Standards Bodies.   |

## SECTION 5

# Introduction and use of Eurocodes in the UK

The acceptance of a Eurocode Part by CEN is based on a qualified majority vote of National Standards Bodies, with limits on the level necessary for acceptance. In the UK, the BSI vote will be decided in the relevant BS Committee after a thorough examination of the contents and enough calibration to be able to make an informed decision. Once voted positively, and after final editing, the Part will be made available to National Standards Bodies by CEN on the DAV. The Part must be published by BSI as soon as possible, but within 6 months.

In the 2 years after DAV, National Calibration is expected to be carried out to fix the NDPs. During this 2 years, National Provisions must have been modified to enable the Code to be used. In the UK, the vehicle to do this varies in England and Wales, Scotland and Northern Ireland. Some bodies are exempt from Building Acts. The charts in Annex 3 illustrate the main aspects of the Regulatory System for Construction in the UK.

The Public Procurement Directive (PPD) of 1993 (currently under revision) covers the design and construction of public buildings and those of statutory undertakers. The Eurocodes, taken with their National Annexes, will become the main design tool for projects under the PPD, giving a presumption of conformity with all European legal requirements for mechanical resistance and stability and fire (in relation to the structure). This Directive foresees, however, other methods than the Eurocodes, being used if their equivalence can be demonstrated by the contractor.

The coexistence period starts at the end of the National Calibration period; a maximum of 3 years, from the National publication of the last Part of a package, is allowed before withdrawal of all of the National Codes that have a similar Scope to that of the Eurocode package, i.e. 5 years from DAV of the last Part. BSI have also to make it possible to use the earliest Parts of a package (with their National Annex) by the end of 5 years after the DAV of those Parts, even though the whole Package is not available.

The arrangements from DAV to withdrawal are illustrated in Annex 4.

The National Annex will be an essential document to enable a Eurocode to be used; it should contain, where appropriate information on:

- values/and or classes where alternatives are given in the Eurocode,
- values to be used where a symbol only is given in the Eurocode,
- country specific data, e.g. a snow map or a wind map,
- the procedure to be used when alternative procedures are given in the Eurocode,

- decisions on the application of Informative Annexes,
- reference to non-contradictory complementary information.

The National Annex will be published by BSI as 'Informative'. It will provide the necessary information that will allow the Eurocode to be used for meeting Building Regulations compliance.

It is a Country's right not to recognise an Informative Annex as being acceptable in that Country; in such a case the relevant National Annex must state that the Informative Annex is not accepted. If the contents of the rejected Informative Annex are covered in a suitable National document, a reference to such a document is permitted in the National Annex under the item 'non-contradictory complementary information'.

From a Eurocode users point of view, it will be somewhat inconvenient to jump back and forth from the body of the document to the National Annex. Unfortunately, an NSB is not permitted to publish a National version of the Code with the parameters from the National Annex incorporated into the EN text. Users of the Codes may, of course, mark up their own copies of the Code with the values of NDPs etc., accordingly.

The Eurocode recognises that alternative application rules, from those given in the Code, may be used, but they should not be contradictory. However, it is not permitted for National alternatives to be included in the BS-EN publication, either in the text or in the National Annex. Indeed, Guidance Paper L and EN 1990 contain a warning that, if an alternative application rule is substituted for the one in the Code, the resulting design cannot be claimed to be in accordance with the Eurocode, even if it meets the principle rules given in the Code.

## SECTION 6

# Use of Eurocodes in the design of products

Some products for which CE marking is required (see *CE marking under the Construction Products Directive*) will involve structural design in arriving at the properties of the products to be claimed as meeting the technical specifications. A whole section of Guidance Paper L deals with the use of EN Eurocodes in technical specifications for structural products. A distinction is drawn between the cases where properties are obtained by:

- (a) testing, and
- (b) calculation.

For both methods it is likely that classes will need to be set up to allow for the inevitable differences in Nationally Determined Parameters from country to country.

When the properties are to be derived by testing, the technical specifications need to take into account the assumptions in design according to the EN Eurocode, particularly with regard to characteristic values and, after allowing for countries to set their own safety levels, design values.

When the properties are to be obtained from calculations according to EN Eurocodes, three methods are foreseen:

- Method 1: Indication of geometrical data of the component and of properties of the materials and constituent products used.
- Method 2: Determination of properties by means of the EN Eurocodes (with the results expressed as characteristic values or design values).
- Method 3: Reference to design documents of the works or client's order.

Method 1: For this, the information on the geometrical data and properties of materials used, enable the structural component to be designed, using an EN Eurocode, for verifying its adequacy in works.

Method 2: This is the prime method that uses the EN Eurocodes to determine the mechanical resistance and resistance to fire of a structural product. When a relevant Eurocode is available, with the NDPs for those countries in which the product is to be sold, the design must be based on the Code and NDPs. When a Eurocode is not available, then the technical specifications are permitted to include their own method of design, which, nevertheless, is required to be approved by CEN. (In practice, this route is unlikely to be practicable).

The level of safety is set by countries through their NDPs; this means that design values for a structural component will vary from country to country. Characteristic values should not involve the use of the safety factors in a set of NDPs, but more parameters are likely to be varied from country to country, through NDPs, than just the safety factors. The only way in which these variations can be overcome is by using classes, each one covering a unique set of NDPs.

Method 3: For a structural product produced in accordance with a design, provided on behalf of the client, the manufacturer needs only to make reference to the design documents for the works.

## SECTION 7

# Education and training, software and handbooks, amendments, innovative methods

The Eurocodes are only likely to be used by designers if there is adequate support to their introduction into industry. For this to happen, education and training will be needed, together with adequate software and explanatory material, e.g. handbooks. Moreover it must remain possible to use the Eurocodes to generate innovative designs and a clear system for making amendments must exist.

**Education and Training:** Universities, technical colleges, engineering institutions and training organisations need to recognise the forthcoming introduction of the Eurocodes. Suitable courses will be needed to educate engineers already working in industry. Continuing professional development will also need to focus on the retraining of engineers on the use of Eurocodes.

**Software and Handbooks:** Codes of Practice for structures are usually accompanied by unofficial handbooks and software i.e. those not published by BSI. Such explanatory material will be essential to make the Eurocodes user-friendly. Because of the wide variety of traditions across Member States and the extensive range of National Determined Parameters, it will probably be impractical to develop handbooks and software that are directly applicable to the whole of Europe. However, 'generic' handbooks and software could be devised using selective values of NDPs and possibly some alternative application rules for explanatory purposes.

If the handbooks here in the UK are assumed to be authoritative, they should support the use of the Eurocodes for demonstrating compliance with the Building Regulations.

**Amendments:** Although the Eurocodes will undoubtedly be amended in due course, they should remain unchanged for a while apart from correction of mistakes or matters relating to safety. In fact, the Eurocodes should not change at all until after the period of coexistence has ended and National Codes have been withdrawn.

**Innovative methods:** Neither the Commission nor CEN intend the Eurocodes to stifle innovation in design. Where the Eurocode rules are found to inhibit innovative solutions then alternative approaches will need to be negotiated with the regulatory authorities. In the UK, Codes of Practice are not mandatory, as they are not produced under any law. Alternative methods other than those given in a recognised authoritative Code may therefore be used to demonstrate compliance with the Building Regulations.

## SECTION 8

# Further sources of information

BSI  
389 Chiswick High Road  
London W4 4AL  
Phone: 020 8996 7015  
Fax: 020 8996 7048  
Website: [www.bsi-global.com](http://www.bsi-global.com)

BRE  
Bucknalls Lane  
Garston  
Watford WD25 9XX  
Phone: 01923 664000  
Fax: 01923 664096  
Website: [www.bre.co.uk](http://www.bre.co.uk)

Construction Products Association  
26 Store Street  
London WC1E 8BT  
Phone: 020 7323 3770  
Fax: 020 7323 0307  
Website: [www.constprod.org.uk](http://www.constprod.org.uk)

Institution of Structural Engineers  
11 Upper Belgrave Street  
London SW1X 8BH  
Phone: 020 7235 4535  
Fax: 020 7235 4294  
Website: [www.istructe.org.uk](http://www.istructe.org.uk)

Highways Agency  
Romney House  
43 Marsham Street  
London SW1P 3HW  
Phone: 020 7081 7789  
Website: [www.highways.gov.uk](http://www.highways.gov.uk)

The Welding Institute  
Abingdon Hall  
Abingdon  
Cambridge CB1 6AL  
Phone: 01223 891162  
Fax: 01223 892588  
Website: [www.twi.co.uk](http://www.twi.co.uk)

British Cement Association  
Century House  
Telford Avenue  
Crowthorne  
RG45 6YS  
Phone: 01344 762675  
Fax: 013444 761214  
Website: [www.bca.org.uk](http://www.bca.org.uk)

Brick Development Association  
Woodside House  
Winkfield  
Windsor SL4 2DX  
Phone: 01344 885651  
Fax: 01344 890129  
Website: [www.brick.org.uk](http://www.brick.org.uk)

TRADA Technology Ltd  
Stocking Lane  
Hughenden Valley  
High Wycombe  
Buckinghamshire HP14 4ND  
Phone: 01494 563091  
Fax: 01494 565487  
Website: [www.trada.co.uk](http://www.trada.co.uk)

The Steel Construction Institute  
Silwood Park  
Ascot  
Berkshire SL5 7QN  
Phone: 01344 623345  
Fax: 01344 622944  
Website: [www.steel-sci.org](http://www.steel-sci.org)

Office of the Deputy Prime Minister  
18A Portland House  
Stag Place  
London SW1E 5LP  
Phone: 020 7944 5762  
Fax: 020 7944 5719  
Website: [www.safety.odpm.gov.uk/bregs](http://www.safety.odpm.gov.uk/bregs)



# ANNEX 1

## List of Parts of Eurocodes in the current programme

EN 1990 – Eurocode: <i>Basis of structural design</i>	N/A
EN1991 – Eurocode 1: <i>Action on structures</i>	EN1991-1-1: Densities, self-weight and imposed loads EN1991-1-2: Actions on structures exposed to fire EN1991-1-3: Snow loads EN1991-1-4: Wind loads EN1991-1-5: Thermal actions EN1991-1-6: Actions during execution EN1991-1-7: Accidental actions due to impact and explosions EN1991-2: Traffic loads on bridges EN1991-3: Actions induced by cranes and machinery EN1991-4: Actions in silos and tanks
EN 1992 – Eurocode 2: <i>Design of concrete structures</i>	EN1992-1-1: Common rules for buildings and civil engineering structures EN1992-1-2: Structural fire design EN1992-2-2: Bridges EN1992-2-3: Liquid retaining and containment structures
EN 1993 – Eurocode 3: <i>Design of steel structures</i>	EN1993-1-1: General rules EN1993-1-2: Structural fire design EN1993-1-3: Cold formed thin gauge members and sheeting EN1993-1-4: Structures in stainless steel EN1993-1-5: Strength and stability of planar plated structures without transverse loading EN1993-1-6: Strength and stability of shell structures EN1993-1-7: Strength of planar plated structures loaded transversally EN1993-1-8: Design of joints EN1993-1-9: Fatigue strength EN1993-1-10: Fracture toughness assessment EN1993-1-11: Use of high strength cables EN1993-2: Bridges EN1993-3: Buildings EN1993-4-1: Silos, tanks and pipelines – silos EN1993-4-2: Silos, tanks and pipelines – tanks EN1993-4-3: Silos, tanks and pipelines – pipelines EN1993-5: Piling EN1993-6: Crane supporting structures EN1993-7-1: Towers, masts and chimneys – towers and masts EN1993-7-2: Towers, masts and chimneys – chimneys
EN 1994 – Eurocode 4: <i>Design of composite steel and concrete structures</i>	EN1994-1-1: General – common rules EN1994-1-2: Structural fire design EN1994-2: Bridges
EN 1995 – Eurocode 5: <i>Design of timber structures</i>	EN1995-1-1: Common rules and rules for buildings EN1995-1-2: Structural fire design EN1995-2: Bridges
EN 1996 – Eurocode 6: <i>Design of masonry structures</i>	EN1996-1-1: Rules for reinforced and unreinforced masonry EN1996-1-2: Structural fire design EN1996-2: Selection and execution of masonry EN 1996-3: Simplified calculation methods and simple rules for masonry structures
EN 1997 – Eurocode 7: <i>Geotechnical design</i>	EN1997-1: General rules EN1997-2: Design assisted by laboratory testing EN1997-3: Design assisted by field testing
EN 1998 – Eurocode 8: <i>Design of structures for earthquake resistance</i>	EN1998-1: General rules, seismic actions and rules for buildings EN1998-2: Bridges EN1998-3: Strengthening and repair of buildings EN1998-4: Silos, tanks and pipelines EN1998-5: Foundations, retaining structures and geotechnical aspects EN1998-6: Towers, masts and chimneys
EN 1999 – Eurocode 9: <i>Design of aluminium structures</i>	EN1999-1-1: Common rules EN1999-1-2: Structural fire design EN1999-2: Structures susceptible to fatigue

# ANNEX 2

## Packages of Eurocode Parts

### **Eurocode 2: Concrete Structures**

1. Package 2/1 Building and Civil Engineering Structures, excluding bridges and liquid retaining and containment structures.
2. Package 2/2 Bridges.
3. Package 2/3 Liquid retaining and containment structures.

### **Eurocode 3: Steel Structures**

4. Package 3/1 Building and Civil Engineering Structures, excluding bridges, silos, tanks and pipelines, steel piling, crane supporting structures, and towers and masts.
5. Package 3/2 Bridges.
6. Package 3/3 Silos, tanks and pipelines.
7. Package 3/4 Steel piling.
8. Package 3/5 Crane supporting structures.
9. Package 3/6 Towers and Masts.

### **Eurocode 4: Composite Steel and Concrete Structures**

10. Package 4/1 Building and Civil Engineering Structures, excluding bridges.
11. Package 4/2 Bridges.

### **Eurocode 5: Timber Structures**

12. Package 5/1 Buildings and Civil Engineering Structures, excluding bridges.
13. Package 5/2 Bridges.

### **Eurocode 6: Masonry Structures**

14. Package 6 Building and Civil Engineering Structures, excluding bridges.

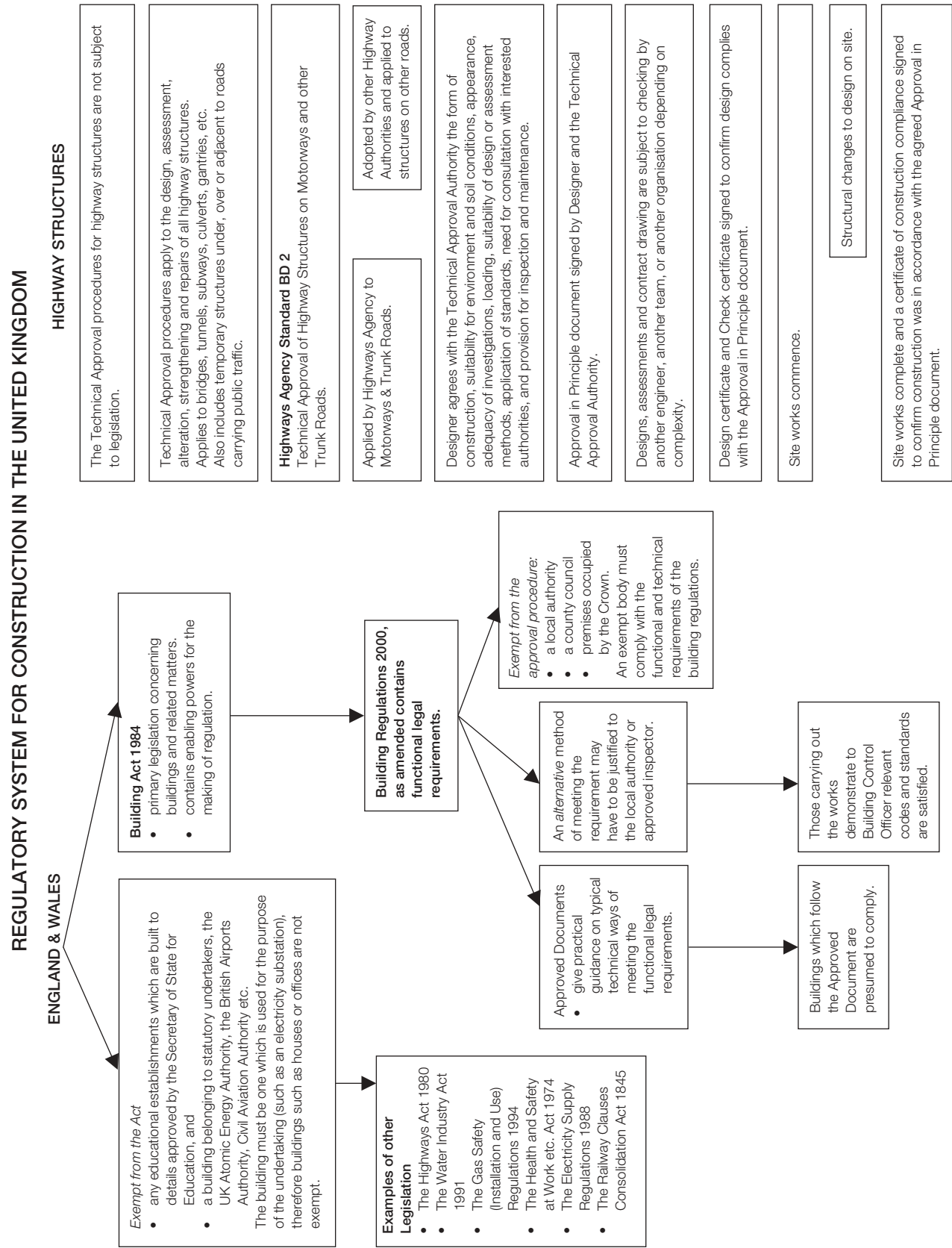
### **Eurocode 9: Aluminium**

16. Package 9/1 All without fatigue.
17. Package 9/2 With fatigue.

### **Note**

Eurocode Parts from EN1990, EN1991, EN1997, and EN1998 do not feature as a “package”

# ANNEX 3



**Technical Approval procedures for highway structures are not subject to legislation.**

Technical Approval procedures apply to the design, assessment, alteration, strengthening and repairs of all highway structures. Applies to bridges, tunnels, subways, culverts, gantries, etc. Also includes temporary structures under, over or adjacent to roads carrying public traffic.

**Highways Agency Standard BD 2**

Technical Approval of Highway Structures on Motorways and other Trunk Roads.

Applied by Highways Agency to Motorways & Trunk Roads.

Adopted by other Highway Authorities and applied to structures on other roads.

Designer agrees with the Technical Approval Authority the form of construction, suitability for environment and soil conditions, appearance, adequacy of investigations, loading, suitability of design or assessment methods, application of standards, need for consultation with interested authorities, and provision for inspection and maintenance.

Approval in Principle document signed by Designer and the Technical Approval Authority.

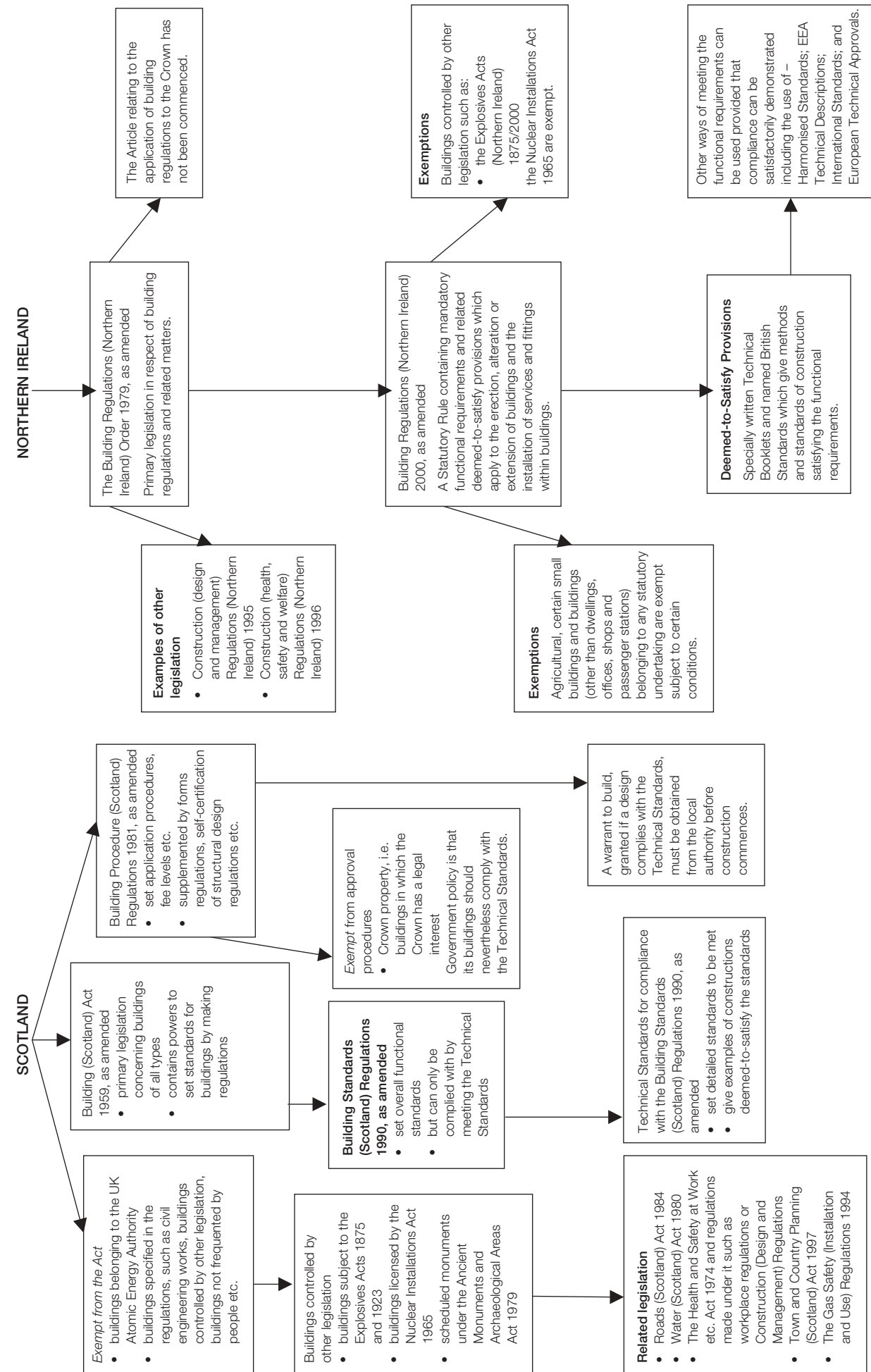
Designs, assessments and contract drawing are subject to checking by another engineer, another team, or another organisation depending on complexity.

Design certificate and Check certificate signed to confirm design complies with the Approval in Principle document.

Site works commence.

Structural changes to design on site.

Site works complete and a certificate of construction compliance signed to confirm construction was in accordance with the agreed Approval in Principle document.



## ANNEX 4

# Illustration of General Timetable from DAV to withdrawal of National Codes

