



Introduction

by Haig Gulvanessian

Welcome to the fourth issue of *Eurocodes News*, which is dominated by two key themes. Firstly, the Eurocodes programme is nearly complete, with BSI due to publish the final seven of the 58 parts within the next couple of months and most of the UK national annexes by early 2008. Secondly, due to the initiatives of government, research bodies, the professional institutions and industry, a wealth of implementation support resources is now available in the UK.

UK construction professionals are thus better placed than most of their international competitors to benefit from the opportunities offered by having a single structural design system throughout Europe – and one which looks set to be adopted worldwide.

New support resources website

As described on page 8, the recently launched Eurocodes Expert website will, through its comprehensive team of industry content partners, ensure UK professionals are kept up-to-date with the ever-increasing range of support resources available. These include the Institution of Civil Engineers (ICE) /

Thomas Telford's designers' guides, the Institution of Structural Engineers' design manuals, numerous quality training courses, material-specific web resources and help desks, and commercial software packages, and many are described in more detail in this issue.

The resources are aimed at construction businesses with an international workload as well as smaller companies and individuals with a portfolio exclusive to the UK. Much of it is also invaluable for academics teaching Eurocode design at undergraduate level.

Less than three years to changeover

Under the agreement between the European Standardization Committee (CEN) and the national standards organisations, equivalent national codes in all EU member states must be withdrawn in 2010 – just three years from now.

And make no mistake, moving over to design by Eurocodes will not be easy as they represent the most wide-ranging change to codification of civil and structural design ever experienced. It is thus vital for the UK construction industry to utilise the unrivalled resources being made available to them – and now.

The Eurocodes are widely recognised as the most technically advanced suite of civil and structural design codes in the world and they present a significant opportunity for the export of British design expertise and products. But they also represent a significant threat for any construction business which chooses not to embrace them now. ★

Professor Gulvanessian is former construction division director of BRE, visiting professor at Imperial College and chairman of the EN1990 and EN1991 drafting committees. He is also chairman of the Eurocodes Expert advisory group.



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BSI SWITCHES FOCUS TO NATIONAL ANNEXES

by **Clare Price**, British Standards Institute

The Eurocodes programme is nearly complete. All of the suite of 58 Eurocode parts have now been released by the European Committee for Standardization (CEN), and the final base documents will be published by British Standards Institution (BSI) within the next couple of months.

The focus of the BSI standards committees is therefore switching to the drafting of UK national annexes. Essential for the application of Eurocodes, these include national application material and decisions on values to be used in Britain where the Eurocode allows for national choice. Moreover they include decisions on how to apply the Eurocodes' informative annexes and provide a list of guidance documents known as 'non-contradictory complementary information' approved by relevant committees.

Small documents

The national annexes will tend to be fairly small: it is unlikely any will be more than 40 pages long and some may be as few as four pages. The material must be made available as stand-alone documents however in order to overcome barriers to trade.

Of the 58 Eurocode documents, only 57 are likely to have national annexes. Part 3 of Eurocode 8 (earthquake), which covers assessment and retrofitting of buildings, is not considered relevant to the UK and therefore will not have a national annex. The four parts of Eurocode 3 (steel) that cover tanks, pipelines, supplementary rules and planar structures are expected to need minimal national application material, though how this is made available is still under discussion.

Over half due this year

So far ten national annexes have been published and eight more are expected by June 2007. Four are currently issued as drafts for public comment and a further eleven are expected to be issued as drafts in June and July. By the end of 2007, a total of 33 national annexes will have been published. The remainder are expected in 2008, with the possible exception of Eurocode 9 (aluminium), which will be the last parts to be published this year. Their national annexes may not be published until early 2009.

The basic building blocks of the Eurocodes system, necessary for all types of structures, are Eurocode '0' (basis), Eurocode 1 (actions) parts 1-1 to 1-7, Eurocode 7 (geotechnical) part 1 and Eurocode 8 (earthquake) parts 1 and 5. The UK national annexes for four of these are already published. The remainder are expected by the end of this year bar the two seismic parts, which can be expected in February 2008.

Material-specific annexes

Regarding national annexes for the material-specific codes, progress is as follows.

- Eurocode 2 (concrete) – the two national annexes for buildings are published and those for concrete bridges and liquid retaining structures are expected in June 2007.
- Eurocode 3 (steel) – ten out of the 20 national annexes are expected this year and the remainder in 2008.
- Eurocode 5 (timber) – all national annexes are published.
- Eurocode 6 (masonry) – all four national annexes are expected in June 2007.

The bridge committee is very keen to complete national annexes for all parts relevant to bridges this year.

As such, by the end of 2007 / early 2008, designers in the UK will be able to use the Eurocodes for the design of most structures. Industry will therefore have two years to prepare for March 2010, when all existing national codes will be withdrawn and the Eurocodes fully implemented.

For further information please contact BSI on 020 8996 9001, cservices@bsi-global.com or visit www.bsi-global.com/eurocodes ★



BSI is planning to publish Eurocode national annexes for most structural design work by early 2008, giving designers two years to use them prior to withdrawal of existing national codes

CEN PLANS CONTINUING EVOLUTION

by **Jean-Armand Calgaro**, Chairman, European Committee for Standardization (CEN)



The Eurocodes represent a new European technical culture in civil and structural engineering, which is being appropriated by designers, experts, checkers, academics and students. A new era is beginning: all actors in the construction sector will soon use the same technical language and clients and authorities will be able to express their requirements in a more pertinent, accurate and transparent manner.

The main qualities of the Eurocodes, which are now recognised the world over, are their scientific background and the transparency of their common approach to the reliability of construction works. But they also need to evolve continuously.

Living documents

The Eurocodes have been developed by CEN technical committee 250 as part of the first series of documents established and published under the direct responsibility of the European Commission. This has had much to do with the enthusiasm and the willpower of CEN/TC250's members, especially its successive chairmen: Günter Breitschaft from 1989 to 1993, David Lazenby from 1993 to 2000, and Horst Bossenmayer, from 2000 to 2007. I look forward to building on their legacy.

The Eurocodes are now living documents: they are born, they are young and they need care to grow harmoniously. A special chairman's advisory panel defined recently the four main activities required by the implementation and use of the Eurocodes

- maintenance
- harmonisation
- promotion
- further development.

Maintenance is easy to understand and this point needs not be extensively developed.

Harmonisation covers not only the convergence, desired by the European Commission, of the technical content of the national annexes accompanying, in each country, the various Eurocode parts, but also a new step towards an improved consistency between the Eurocodes and the relevant execution and product standards.

Promotion of the Eurocodes is a fundamental action: in fact, the real purpose is to promote the design of civil engineering works with the Eurocodes, not only inside but also outside the EU. This necessitates special actions in the field of education: information on the technical philosophy on which Eurocodes are based, assistance and training for designers concerning their practical use for the design of construction works, assistance to countries outside EU who wish to use them for international tenders, or even who wish to adopt them as national standards, and so on.

Accommodating new developments

Last but not least, the Eurocodes need to take account of the many new developments required by the construction industry and public authorities. Examples include

- developments of technical rules for new materials – such as structural glass, fibre-reinforced polymers and high-performance self-compacting concrete
- design of structures to ensuring better protection of citizens – for example robustness of structures in accidental situations
- assessment and retrofitting of existing construction works, in particular historical monuments.

But all these specific items are part of a more ambitious project, which aims to enlarge the objectives of the Eurocodes to the six fundamental requirements of the Council's directive on construction products.

Probably the current safety format based on the semi-probabilistic approach will remain in force for many years, but an evolution towards more performance-based or risk-oriented design standards is already envisaged.

Discussions between experts show that it is not only desirable, but also possible, to incorporate better requirements or rules for sustainable design of construction works, safety and health of people during execution, reconstruction or demolition, comfort in buildings and other works, and so on.

Managing the Eurocodes' destiny

CEN/TC250 will always be in charge of the management of the Eurocodes' destiny, but this very motivating mission is enormous: the regular incorporation in the Eurocodes, or in their future extensions, of the results of the most advanced research needs a close cooperation with international scientific associations and European technology platforms. For the various future tasks previously mentioned, CEN/TC250 already receives high-level and substantial help from the Elsa laboratory of the Commission's Joint Research Centre located in Ispra, Italy.

The first applications of the Eurocodes to the design of new civil engineering works are very encouraging. We are going the right way, and our enthusiasm remains undiminished. The Eurocodes will prevail and become the best technical reference in the world.

For further information please contact the author, email jean-armand.calgaro@equipement.gouv.fr ★

EU LAUNCHES NEW EUROCODES INITIATIVES

by **Artur Pinto** and **Silvia Dimova**, EC Joint Research Centre



The Directorate General Enterprise and Industry of the European Commission (DG ENTR) has committed its Joint Research Centre (JRC) at Ispra in Italy to assist in the implementation, harmonisation and further development of the Eurocodes.

JRC is progressing a number of initiatives together with other stakeholders involved in the implementation and use of the Eurocodes, in particular with Eurocode drafting committee CEN/TC250.

European Commission website

On 5 March 2007 JRC launched the European Commission's new Eurocodes website at eurocodes.jrc.ec.europa.eu. Entitled *Eurocodes – building the future*, the site has information about the Eurocodes (major concepts, parts and packages), the European system for standardisation and certification for construction, and Eurocodes implementation and usage, maintenance and further development.

Major publications about the Eurocodes are listed, many of which can be downloaded, along with Eurocode-

related conferences, seminars and training courses. Contributions from member states regarding new publications and events are welcome and a network of website contributors is now being set-up – please email eurocodes@jrc.it.

Monitoring national implementation

Working in close collaboration with CEN/TC250, JRC has also developed a database of Eurocode nationally determined parameters (NDP). It is primarily a tool for member states to notify the Commission of their selected values for parameters but is also a fundamental source of data for further harmonisation.

The database cover the approximately 1300 parameters for the 58 Eurocode parts, which range from single values to tables with tens of values, or from descriptions of a procedure to an informative annex. The database has restricted and controlled access and it is administrated by JRC.

DG ENTR officially notified heads of delegation to Standing Committee 89/106/EC about the launch of the database on 7 July 2006. Since then national authorities of 13 member states – Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, Greece, Italy, Lithuania, Malta, Romania, Slovakia and Sweden – have nominated experts to use the database.

The Czech Republic was the first to start uploading values and, by the end of April 2007, three states have

uploaded values as follows.

- Czech Republic: EN 1990-A1, EN 1991-1-1, EN 1991-1-5 and EN 1991-1-6.
- Romania: EN 1991-1-2, EN 1991-1-3 and EN 1991-2.
- Slovakia: EN 1990-A1.

Justification for new design standards

Furthermore, JRC in collaboration with stakeholders has recently prepared and submitted to DG ENTR two justification papers that describe the need for further standardisation in the field of fibre-reinforced polymer (FRP) composites and structural glass.

- *Purpose and justification for new codes and standards regarding the use of fibre-reinforced polymer composites in civil engineering* outlines the specific aims and reasons for standardisation in FRP composite materials and the main interested parties which will benefit from it. The document was prepared by JRC in consultation with the European Composites Industry Association, the Highways Agency (UK) and the ad-hoc working group convened by JRC.
- *Purpose and justification for new design standards regarding the use of glass products in civil engineering* works similarly describes the rationale and justification for a new European code for the design of glass structures, parts or kits for use in civil engineering works. The document results from consultation with manufacturers of glass products, the construction industry, design and consulting companies and experts, standardisation and certification bodies and academia.

For further information please contact the authors on +39 0332 78 9511 or eurocodes@jrc.it ★

UK PREPARES FOR EUROCODE BRIDGE DESIGN

by **Stewart Garden** and **Steve Denton**, Parsons Brinckerhoff

About 25 of the 58 Eurocode parts relate either directly or indirectly to the design of bridges. All of these will be published by BSI as BS EN standards by June 2007, some national annexes have already been published and all will be completed by early 2008.

The Eurocodes cannot be used until the respective national annexes have been published. Particularly critical for the design of bridges will be the national annex to BS EN 1990 Annex A2 – which has been published as an amendment to *Eurocode: Basis of structural design* and contains the UK decisions for material-independent partial factors and load-combination rules.

Also important is the national annex to BS EN 1991-2, *Eurocode 1: Actions on structures – Part 2: Traffic loads on bridges*, which contains the UK's nationally determined parameters for the application of traffic loading to bridge structures. Until these two national annexes are published, bridge design using the Eurocodes will not be possible.

Published documents

In addition to the Eurocodes and their national annexes, a decision has been made to publish non-contradictory complementary information for bridge design in BSI 'published documents'. Published documents do not have the status of a standard, but are expected to be cited as non-contradictory complementary information in some UK national annexes.

Published documents will include background to some of the nationally determined parameters, guidance on aspects not covered by the Eurocodes and residual information from current British Standards.

For bridge engineers this will include guidance on the design of integral bridges, residual complementary



Completed in 2006, the Roccaprebalza viaduct on the A15 motorway in Italy was designed to EN 1992-1-1, EN 1992-2, EN 1994-1 and EN 1994-2.

information from BS 5400 and background to aspects of the UK decisions for the bridges national annexes.

Product standards

In addition to the standards needed for design, the Eurocodes have been written on the basis that the construction products used will meet European product standards, and that structures are built in accordance with European execution standards.

Many of the product standards (such as EN 10025 for steel) have already been published, but a few remain to be published. The principal execution standards are EN 13670 *Execution of Concrete Structures* and EN1090 *Execution of Steel Structures and Aluminium Structures*. These are

both yet to be published and current information indicates they will be ready in late 2007 or early 2008.

Substantial challenge

The Eurocodes will be a substantial change for bridge designers, they are less prescriptive than current standards and designers have commented that they are more 'academic' in style.

Nevertheless, the Eurocodes do not change the fundamental principles of good bridge design, and design studies for common types of highway bridges have indicated that the finished product is typically very similar.

For further information please contact Steve Denton on 0117 9393300 or eurocodes@pbworld.com ★

SOFTWARE DEVELOPMENT GETS UNDERWAY

by **Chris Austin**, Bestech Systems

According to the *National Strategy For Implementation Of The Structural Eurocodes* prepared by the Institution of Structural Engineers in 2004, 'The provision of software to the Eurocodes ... is absolutely key to the successful implementation and acceptance of the Eurocodes.'

Every civil and structural engineering consultancy thus has a choice to make: either license commercial software or write their own. However, as we have discovered during recent development of Bestech Systems' bridge design suite, there are many potential pitfalls that await in-house developments.

Initially our well-accepted bridge design software covered BS 5400 and its derivatives and it has since been extended to include AASHTO and Austroads. We have now completed the work for Eurocodes for section design, analysis and load optimisation and the modules have been released for free trial. The only further work required is the addition of various national annexes, that of the UK included, and this is expected to be straightforward.

A complex task

However, the main task was complex. When implementing a new design code we always find inconsistencies, errors, and parts that are not sufficiently precisely defined for computer implementation. In this respect the Eurocodes were better than other design codes, despite being entirely new – if that is an appropriate term for codes that have been 25 years in development.

Where we had queries we found no official source of knowledge, but we found individuals who worked on the preparation of the codes and associated documents over the years who lent enthusiastic and authoritative support. It would be fair to say that these people would be far too stretched to offer the same level of support to every bridge office in the country, so most design offices will have to get their help elsewhere.

No load combinations

One of the areas that caused us difficulty was the understanding of load combinations. When first presented with the Eurocodes, we looked for a

combinations table – and did not find it. The alternative methods looked daunting when we first saw them, but made a lot of sense once we had sorted them out. Unfortunately we wasted a lot of time going in the wrong direction, time that could have been saved with a half day of training from somebody already familiar with the requirements.

Being amongst the first UK users of the code means we had to do it the hard way, without the benefit of much 'imparted knowledge', and now our software incorporates a significant amount of the knowledge we acquired. For example, the help system contains numerous references to the clauses of the code, and can be interrogated for any specific item of data entry, and the output contains calculations that also reference the clauses. These features (and others) are useful learning aids that can be used in conjunction with training.

Hands-on training

Now that we have our experience, and our software has built-in expertise, we will shortly be offering hands-on computer-based training, which will be beneficial to every bridge design engineer, and doubtless many structural engineers too.

Thus the progress to date is that a significant amount of software has already been released and is available for free trial, the national annexes will be a small task to implement, and hands-on training will be available soon.

For more information contact the author on 01565 674 300, c.austin@bestech.co.uk or visit eurocodessoftware.com ★

SAM		Eurocode Program Outlines	
Integrated Bridge Design Software			
Section Design Modules			
S.01aa	Section Properties for any section	Graphical section definition. Material properties definition. Gross section, transformed section, for any R section, and transformed section.	
S.02aa	Differential temperature analysis for any section	Differential Temperature load case generation. Calculation of relieving moments and self equalising stresses.	
S.04aa	Design and assessment of concrete sections	For concrete sections with reinforcement and/or prestressing tendons, subject to axial bending and axial load. SLS analysis, SLS crack width calculations. Graphics and fully detailed tabular and hand calculation style output is produced for all the calculations.	
S.06aa	Tension and shear properties for any section	Calculation of torsion constant 'I _t ' using Prandtl's membrane analogy solved using finite difference equations. Allow for continuous fibres. Calculation of the shear centre of a section.	
Beam Design Modules			
B.01aa	Design of steel/concrete composite beams	Interactive calculations and graphics to EN 1994-2 for bending moments (during construction, for wind hogging or wind sagging load cases), shear force and shear force & associated bending moments. Graphics and fully detailed hand calculation style output is produced for all the calculations.	
B.07aa	Design and assessment of pre-tensioned/prestressed concrete beams	Interactive calculations and graphics to EN 1992-2 for bending moments and shear force, for options from transfer through to live load. Automatic tendon deformation. Graphics and fully detailed hand calculation style output is produced for all the calculations.	
B.08aa	Design and assessment of reinforced concrete beams	Interactive calculations and graphics to EN 1992-2 for bending moments and shear force, for options from construction through to live load. 'Soft' profile automatically applied to sections. Graphics and fully detailed tabular and hand calculation style output is produced for all the calculations.	

Bestech's SAM integrated bridge design software now covers Eurocodes and is available for free trial, though national annexes have yet to be incorporated

INSTITUTION OF STRUCTURAL ENGINEERS

by **Sue Doran**, Director, Technical and Engineering, Institution of Structural Engineers

The Institution of Structural Engineers (IStructE) has been a focal point for implementation of the Eurocodes in the UK since the government commissioned it in 2004 to prepare the report *National Strategy for Implementation of the Structural Eurocodes: Design Guidance*.

In 2005 IStructE facilitated a standing committee to fulfil the role of overseeing and advising on implementation, as recommended in the report. Chaired by David Nethercot, the committee brings together representatives from the various material sectors, practitioners in large and small firms, academics, building control officers and representatives of BSI and the Department for Communities and Local Government (DCLG), the government department responsible for Eurocodes.

The standing committee has taken forward discussions on a number of issues, including the following.

- **Copyright, pricing and packaging** – the committee has helped to achieve clarity on copyright issues relating to use of BSI material in guidance documents. Representation has also been made to BSI about pricing of Eurocodes and the burden this places on consumers. In addition the committee has advised BSI how individual Eurocode parts might be packaged into kits for particular sectors.
- **Funding and legislation** – letters have been written to senior UK government officials and ministers outlining issues of concern and requesting greater funding to support Eurocode implementation. The committee is maintaining pressure on DCLG to provide clarity on interpretation and application of the EU Public Procurement Directive, which dictates in what circumstances Eurocodes will be required or mandatory. Plans to include Eurocodes in the Building Regulations approved documents are also being kept under review.
- **Eurocodes Expert website** – members of the committee worked closely with the Eurocodes

Expert advisory group to develop the recently re-launched Eurocodes Expert information website (see page 8).

- **Regional consultation** – the committee has undertaken a consultation with IStructE's UK branches to ascertain members' concerns. IStructE is now considering ways in which it can respond, particularly to requests to provide cost-effective training.
- **Eurocodes FAQs** – in February 2007 a regular question-and-answer article entitled *Eurocodes, Why? What? When?* was launched in *The Structural Engineer* magazine. These articles, which give both general guidance and more specific guidance related to particular Eurocodes, are subsequently published in the FAQ database of the Eurocodes Expert website.
- **University teaching** – an IStructE study group on teaching Eurocodes in university has been established under the convenorship of Ian Burgess at Sheffield University. Among other things the group is assisting BSI in update its student guide to Eurocodes. Membership of the group is open to anyone who wishes to be involved.

IStructE is also preparing a suite of design manuals for the Eurocodes. The first, entitled *Manual for the Design of Concrete Building Structures to Eurocode 2*, was published last year and manuals for Eurocode 5 (timber) and Eurocode 6 (masonry) will follow later in 2007 (see updates by Trada and BMS/BDA).

Manuals for Eurocode 1 (actions) and Eurocode 8 (earthquake) will appear in 2008, while that for Eurocode 3 (steel) will follow in 2009. It is also hoped the series will be completed by a manual for Eurocode 7 (geotechnical), though arrangements for production have yet to be finalised.

For further information please contact Sue Doran on 020 7201 9110, sue.doran@istructe.org or visit www.istructe.org/eurocodes ★



Manual for the Design of Concrete Building Structures to Eurocode 2 is the first of a series of seven Eurocode design manuals planned by IStructE



INSTITUTION OF CIVIL ENGINEERS

by **John Lane**, Chairman, Institution of Civil Engineers Structures Panel

The Institution of Civil Engineers' (ICE) structures panel has been supporting development of the Eurocodes for many years through nominating appropriate experts to sit on drafting committees administered by BSI, the UK's national standards body. Through its community of experts, the panel thus has extensive knowledge of the background to the Eurocodes.

Since 2005 the ICE structures panel has also been represented on the standing committee on implementation of Eurocodes, which was established in 2005 in response to the 2004 government-commissioned report *National Strategy for the Implementation of the Structural Eurocodes: Design Guidance* (see previous article). Through this committee, which is administered by the Institution of Structural Engineers (IStructE), the panel contributes to the role of monitoring all aspects of the implementation of the Eurocodes in the UK and the provision of advice on changes to the strategy that are identified as necessary as the implementation process progresses.

ICE also funds and manages the joint ICE / IStructE Eurocodes Expert website through its operating division Thomas Telford. A steering group, comprising members of the ICE structures panel and the standing committee, provides guidance to Eurocodes Expert

on implementation issues, web development and the sourcing of information and advice.

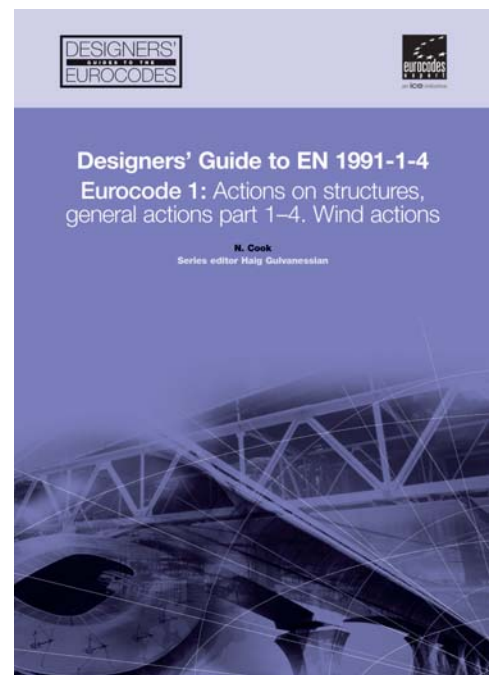
Resources listed on the website include Thomas Telford's comprehensive series of Eurocodes designers' guides written by leading members of the code drafting committees. Eleven have already been published and four more are due to appear within the next year or so. Other recent publications include a Eurocodes special issue of the ICE *Civil Engineering* journal plus dozens of Eurocode design case studies in the ICE's suite of 20 international engineering journals.

Thomas Telford also runs an extensive series of one-day training courses at various venues around the UK covering Eurocodes 0, 1, 2, 3, 6 and 7 (see the Eurocode Events listing at the end of this newsletter). In addition it is planning another series of half-day Eurocodes roadshow events in the latter half of 2007 – see page 9.

Discounts on Thomas Telford publications and training courses are offered to Eurocodes Expert Users' Group members, along with a free subscription to *Eurocodes News*. Membership of the Users' Group is currently free of charge.

For further information please contact Oriana Marcolongo on 020 7665 2427 or oriana.marcolongo@eurocodes.co.uk or visit www.eurocodes.co.uk ★

ice
Institution of Civil Engineers



Designers Guide to EN1991-1-4 (wind actions) is the latest in a series of 11 Eurocodes design guides so far published by ICE subsidiary Thomas Telford – four more are planned

THE CONCRETE CENTRE

by **Charles Goodchild**, Principal Structural Engineer, The Concrete Centre

The concrete sector in the UK has been fully engaged with the Eurocodes programme and, in line with publication of BS EN 1992-1-1 *Eurocode 2: Design of concrete structures – Part 1-1: General – Common rules for building and civil engineering structures* in 2004 and its national annex in 2005, has produced a wide range of resources aimed at easing the transition. On behalf of the sector, The Concrete Centre has made these and a number of other resources available.

The publication *Concise Eurocode 2* (price £45) summarises what will be commonly used in the design of reinforced concrete frames to Eurocode 2. With extensive clause referencing, design tables and column charts and referencing other relevant Eurocodes, the publication is self-sufficient but also acts as a guide to using the code itself.

The series of *How to* leaflets released in early 2006 have been gathered together and published as a compendium, which includes new chapters on retaining walls and detailing (see the Eurocodes Publications listing at the end of this newsletter).

A dedicated website at www.eurocode2.info has been set up and maintained. This contains explanations, news, key information and downloads, including download files of most of the *How to* leaflets.

The Concrete Centre has updated its reinforced concrete design spreadsheets. First released in 2000, the *RC Spreadsheets* have proved to be popular at all levels. The nature of the spreadsheets allows individual cells to be examined and values traced. It also allows reference

to the relevant clauses to be made – especially important with the introduction of a new code. Version 3 of the spreadsheets not only covers BS EN 1992-1-1 and its UK national annex but it also covers amendment 3 to BS 8110 Part 1:1997.

The updated spreadsheets are just part of a programme initiatives from The Concrete Centre to assist with Eurocodes. For instance, *CALcrete* is a comprehensive suite of 16 computer aided e-learning modules on concrete materials, design and construction. Although principally aimed at students, two modules are on Eurocode 2.

The Concrete Centre has helped with a number of Eurocode 2 initiatives by others. It provides one- and two-day courses in association with the Institution of Structural Engineers (see Eurocodes Events listing at the end of this newsletter) and can provide lunchtime continuing professional development talks (free) and in-house training (for a fee). Free evening seminars or lunchtime continuing professional development talks continue to be a popular starting point. The Concrete Centre helpline (0700 4 500 500) is there to answer questions about concrete – including questions about Eurocode 2.

Moving over to Eurocode design is going to be a huge commitment but, when designers want to make the transition, we are here to help.

For further information please contact The Concrete Centre on 0700 4 822 822, enquiries@concretecentre.com or visit www.concretecentre.com ★



'Concise Eurocode 2' is one of the many support resources available from The Concrete Centre



The Concrete Centre™

THE STEEL CONSTRUCTION INSTITUTE

by **John Moran**, Senior Manager Information Technology, The Steel Construction Institute

With all of the Eurocode parts necessary for design and execution of steel and composite buildings published and the relevant UK national annexes out for public comment, now is a good time to get acquainted with the Eurocodes to discover the competitive edge they offer for steel structures. The Steel Construction Institute (SCI) is supporting designers in this regard through a comprehensive range of initiatives.

The computer-assisted learning package SteelCAL is distributed annually to all students of civil and structural engineering, as well as a significant number of architects. It has been expanded in the 2006/07 version so now includes nearly 100 practical demonstration videos as well as nine learning models covering structural principles in Eurocode terms (www.steelcal.org).

Interest in SCI courses on the use of the Eurocodes is growing steadily. Attendees have the benefit of participatory design sessions run by SCI staff who, as Eurocode 3 and 4 panel members, have been responsible for authoring the steel code itself and writing supporting guidance. Increasingly companies are demanding in-house training and convert the course material for their own use to bring through further engineers (www.steel-sci.org/education).

In the coming few months designers will see the following publications from SCI (shop.steelbiz.org)

- *Introduction to the Steel Eurocodes* – takes the designer through the relevant parts of Eurocodes '0' (basis) and 1 (actions) to the use of Eurocodes 3 and 4 for steel and steel-concrete composite building structures.
- *Concise Eurocode for Buildings* – shows as concisely as possible how to design common forms of beam and column buildings in accordance with Eurocodes.
- *Design Worked Examples* – exemplar calculations

to the Eurocodes for all principal elements in a steel structure.

- *Multi-storey Building Guide* – guidance on the use of Eurocodes to design common forms of multi-storey structures.
- *Blue Book* – design load / span tables with an introductory section explaining how tabulated numbers are derived from Eurocode clauses.
- *Tubes Blue Book* – design load /span tables with an introductory section explaining how tabulated numbers are derived from Eurocode clauses, with particular reference to tubular sections.
- *Tubes Worked Examples* – exemplar calculations to Eurocodes for all principal elements in a steel structure in tubular form.
- *BCSA Red Book* – design load / span tables with an introductory section explaining how tabulated numbers are derived from Eurocode clauses.
- *Fire and the Eurocodes* – explanation and examples of the use of new fire-engineering approaches opened up by the introduction of Eurocodes.

SCI members will be the first to see all of the new publications appearing in SCI's online technical library (www.steelbiz.org). This will join all of the Access-Steel content, providing the most comprehensive information resource available for designing steel and composite structures to the structural Eurocodes (www.access-steel.org). It encompasses the full range of supporting information, from client design guides through to non-contradictory complementary information. The latter unlocks Eurocodes by filling gaps in the published codes for common forms of structure.

To date the online Access-Steel content comprises

- 25 case studies
- 45 worked examples
- 12 interactive worked examples



Access Steel, the European steel industry's multi-lingual Eurocode implementation website, provides free design guidance for steel and composite buildings



- 40 design flow charts
- 46 items of non-conflicting complementary information
- 45 scheme development guides.

SCI is continuing to develop new content to support Eurocode use. In the next few months you can expect a unique online interactive version of the *Blue Book*, a threaded discussion area for discussion of Eurocode issues and an online advisory service. Designers will also begin to see the first wave of Eurocode-based design software.

For further information please contact SCI on 01344 636525, advisory@steel-sci.org or visit steel-sci.org ★

BRITISH MASONRY SOCIETY AND BRICK DEVELOPMENT ASSOCIATION



by **Cliff Fudge**, President, British Masonry Society, and **Ali Arasteh**, Principal Structural Engineer, Brick Development Association

The construction industry has supported a number of initiatives to assist designers in getting to grips with the new structural masonry Eurocode.

One of the key documents being developed is a manual by the Institution of Structural Engineers (IStructE), which aims to encourage the use of structural masonry in the UK. With the help of additional funding from the Aircrete Products Association, the Brick Development Association and the Concrete Block Association, a consultant has been engaged to research and write the initial drafts for consideration by the IStructE task group and to prepare the final text.

The manual will follow the basic format of the *Manual for the design of plain masonry building structures* first published by IStructE in 1997 and revised in 2005. It will provide guidance on the design of load-bearing masonry and masonry infill to structural frames, structural fire design of masonry, selection of materials and execution of masonry. Established good practice not covered in the Eurocode will also be included.

Guidance will be provided on the design of plain masonry in building structures in accordance with BS EN 1996-1-1, BS EN 1996-1-2 and BS EN 1996-2 and the information contained in the national annexes to these parts. The range of structures covered will be limited to building structures that do not rely on bending in masonry for their overall stability. However, the design of individual masonry elements subject to lateral loading and involving bending for their resistance will be included.

Structural design of reinforced and prestressed masonry is specifically excluded from the manual, as are retaining walls and arched structures. The exception to this is the use of bed-joint reinforcement in laterally loaded wall panels and for crack control. The

design of both load-bearing masonry and masonry infill panels to framed structures will be covered, as will the requirements for resistance, serviceability and durability of structures.

In summary, the key areas that are going to be covered by the document are

- choice of structural form (conceptual design)
- choice of materials
- general principles of limit-state design for masonry walls and columns
- design of load-bearing masonry
- design of laterally loaded masonry
- details and construction
- design for fire.

Other documentation to help designers is also being published. *Designers' Guide to EN 1996-1-1 Eurocode 6: Design of masonry structures – Common rules for reinforced and unreinforced masonry structures*, due to be published by the Institution of Civil Engineers' publishing division Thomas Telford in October this year, deals with the key sections in Eurocode 6 and clarifies which of the informative annexes will be adopted by the UK national annex.

The British Masonry Society (www.masonry.org.uk) is considering updating its own guidance document that was originally published to explain the draft (ENV) version of Eurocode 6. In addition, a series of *How to* documents is being produced for structural engineers.

For more information please contact the British Masonry Society on 020 8660 3633, secretary@masonry.org.uk or visit www.masonry.org.uk; or the Brick Development Association on 01344 885 651, brick@brick.org.uk or visit www.brick.org.uk ★



Eurocode 6 and support resources produced by the industry is likely to encourage greater use of structural brickwork, such as the recent award-winning Cork Institute of Technology

TIMBER RESEARCH AND DEVELOPMENT ASSOCIATION



These issues have been remedied as far as possible within the manual's 250 pages and an accompanying CD of spreadsheets, which calculate the lateral strength of dowel-type connections in a wide range of materials.

Subjects addressed which can cause difficulty for designers unfamiliar with timber include material specifications, load duration effects, movement, creep, robustness and disproportionate collapse, fire resistance and protection against decay. More general subjects include the usual beams, columns and connections; roofs, walls and floors; and both timber-frame and open-frame structures.

There are sections on vibration, flitch beam design, glued joints, checking requirements (including advice to local authority engineers), workmanship, installation, control and maintenance. All the material modification factors have been gathered into one table, followed by charts giving their values in the case of factors which

are more difficult to calculate. In a few instances it appears that the current rules in Eurocode 5 can produce unsafe design solutions, so where necessary alternative procedures have been provided.

Timber-frame designers will be relieved to know that information has been included to allow for the shielding effect of masonry, and that there is a table of racking strengths for standard wall panels similar to the one currently provided in BS 5268-6.

The manual has been developed under the guidance of an IStructE task group comprising experienced engineers familiar with both timber and the Eurocodes, and it has been thoroughly peer-reviewed. There should be at least one copy in every design practice, building control office and engineering student's library.

For further information contact TRADA Technology on 01494 569600, information@trada.co.uk or visit www.trada.co.uk ★

TRADA Technology Ltd has been producing design guidance for use with Eurocode 5 since the early 1990s. This summer will see the publication of a joint Institution of Structural Engineers (IStructE) / TRADA manual for the design of timber buildings to Eurocode 5, written largely by TRADA staff who have built on their previous expertise in this area. Its aim is to provide, under one cover, all the information that a qualified structural engineer will need to design the most common types of timber building as quickly and efficiently as possible.

There are three major difficulties which users of Eurocode 5 will face when switching from BS 5268

- material properties have to be sought in various other standards and documents instead of under one cover
- lack of practical design guidance
- complicated formulae for calculating the strength of connections.



Designing timber roof structures such as this to Eurocode 5 should be simpler and safer with the forthcoming TRADA / IStructE design manual

ICE AND ISTRUCTE LAUNCH NEW EUROCODES EXPERT WEBSITE

by **Simon Fullalove**, Editor

The Institution of Civil Engineers (ICE) and the Institution of Structural Engineers (IStructE) officially launched the enhanced Eurocodes Expert website at www.eurocodes.co.uk on 2 April 2007.

It aims to be the UK's authoritative source of information on the structural Eurocodes, all 58 parts of which will have been published by BSI by the end of this month (June 2007), and is supported by an extensive range of content partners drawn from professional bodies, trade associations and government.

Industry content partners

In addition to ICE and IStructE, initial content partners include The Concrete Centre, Steel Construction Institute (SCI), Timber Research and Development Association (TRADA), the Brick Development Association (BDA) and the British Masonry Society (BMS).

The site replaces the initial Eurocodes Expert website ICE launched four years ago. It uses an innovative 'traffic lights' system to indicate the current UK status of each of the Eurocodes parts and their associated national annexes. The site provides easy access to comprehensive support resources provided by the content partners – including news, FAQs, publications, websites, events and courses.

ICE and IStructE steering group

Design and content of the new website was overseen by a steering group drawn from the IStructE Standing Committee on the Implementation of the Structural Eurocodes, chaired by Professor David Nethercot OBE, and the ICE's Eurocodes Expert Advisory Group, chaired by Professor Haig Gulvanessian CBE.

According to Professor Nethercot, 'The revised site should now be viewed as the first place to consult for all those seeking guidance on issues associated with the introduction of the structural Eurocodes.'

Authoritative information

Professor Gulvanessian commented, 'Eurocodes have been many years in their development and there is an urgent need for authoritative information for professionals to implement the codes in practice. The Eurocodes Expert website provides definitive timely and relevant information available from the desktop.'

Eurocodes Expert is aimed primarily at civil and structural design engineers but also intended to be useful for clients, manufacturers, building control officers, academics, trainers and students, both in the UK and wherever English versions of the codes are likely to be used or adopted.

For further information please contact the Eurocodes Expert manager **Oriana Marcolongo** on 020 7665 2427 or eurocodes.expert@eurocodes.co.uk ★

NEW EUROCODES EXPERT MANAGER APPOINTED

by **Simon Fullalove**, Editor



Oriana Marcolongo brings a wealth of e-learning and e-publishing expertise to Eurocodes Expert

E-learning and e-publishing specialist Oriana Marcolongo has been appointed as the new manager of Eurocodes Expert, the joint initiative between the Institution of Civil Engineers and Institution of Structural Engineers to provide authoritative information on implementing the structural Eurocodes.

Oriana previously worked for online training solutions and services provider Thomson NETg, where she spent eight years in a variety of product management roles in localisation and product marketing. Prior to joining Thomson she spent seven years in the electronic publishing sector, initially with Sega Europe and then with Pearson New Entertainment.

'Newsflash' service

Based at Canary Wharf, Oriana has already overseen the launch of the new Eurocodes Expert website and launched the new electronic Eurocodes *Newsflash* service. Her focus during the rest of 2007 will be to build the community of content partners contributing to the Eurocodes Expert website, orchestrate the Eurocodes Expert roadshows and enhance the services of the Users' Group to members, 'by providing information and support of real relevance to the challenges they face in implementing the Eurocodes'.

She will also administer the Eurocodes Expert advisory group chaired by Haig Gulvanessian, the most recent meeting of which was held in London on 10 May 2007.

For further information contact **Oriana Marcolongo** on 020 7665 2427 or eurocodes.expert@eurocodes.co.uk ★

The screenshot shows the homepage of the Eurocodes Expert website. The header includes the 'eurocodes expert' logo with the tagline 'MAKING EUROCODES EASIER' and the ICE and IStructE logos with the tagline 'AN ICE AND ISTRUCTE INITIATIVE'. The navigation menu includes Home, About, News, Eurocodes, Support, Users' Group, and Contact us. A search bar is located in the top right. The main content area is divided into several sections: 'QUICK LINKS' with a list of Eurocodes parts (0-9); 'WELCOME TO EUROCODES' with a welcome message and a link to the Users' Group members' 15% discount on Eurocode 6 course; 'LATEST NEWS' with a link to the same discount article; 'UPCOMING EVENTS & COURSES' with a list of events; 'LATEST PUBLICATIONS' with a list of design guides; and 'UK STATUS' with a pie chart showing the status of Eurocode parts: 12 published, 40 awaited, and 7 not published. The 'CONTENT PARTNERS' section lists logos for The Concrete Centre, ICE, SCI, TRADA, and BMS.

Home page of the new ICE / IStructE Eurocodes Expert website

EUROCODES ROADSHOWS PLANNED FOR AUTUMN



by **Oriana Marcolongo**, Eurocodes Expert Manager

Eurocodes Expert is planning a further series of its popular half-day 'roadshow' seminars at various locations around the UK this autumn. Aimed at practising engineers in the building and civil engineering sectors, the seven short but intensive events in October and November 2007 will focus on practical aspects of Eurocode transition implementation. Areas to be covered at each of seminar include

- the Eurocodes experience so far
- benefits and threats unveiled
- when to implement and considerations for implementation
- setting the scene – the UK post Eurocodes
- Eurocodes exposed – myths, legends, reality
- practitioner's perspective
- Eurocodes for buildings and bridges.

Venues and dates

Presented by a team of acknowledged Eurocodes experts, the seminars are taking place at the following venues on the following dates

■ Belfast	2 October
■ Birmingham	8 October
■ Cardiff	9 October
■ London	8 November
■ Manchester	19 November
■ Leeds	20 November
■ Glasgow	29 November

Delegate fees for each event are £99 + VAT and bookings made before 31 July receive a 10% discount (please quote ECN0707 when booking). As with all Eurocodes Expert courses, attendance can count

towards continuing professional development.

To book online or for further details please visit www.eurocodes.co.uk/roadshows or contact eurocodes.expert@eurocodes.co.uk ★

Supported by



EUROCODES EVENTS

Eurocodes Expert aims to provide details of all Eurocode-related training events run by recognised construction industry associations in the UK. Listed below are all forthcoming events listed on the Eurocodes Expert database at www.eurocodes.co.uk. Please contact manager Oriana Marcolongo if you know of any other Eurocode-related events which should be included.

Date	Title	Venue	Cost	Lead organiser	Telephone	Email
28 June 2007	Design of structural masonry to Eurocode 6	Cambridge	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
31 July 2007	Design of concrete structures to Eurocode 2	Birmingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
02 August 2007	Design of steel structures to Eurocode 3	Birmingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
06 September 2007	Eurocode 7: geotechnical design	Manchester	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
20 September 2007	Design of structural masonry to Eurocode 6	Ascot	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
26 September 2007	Eurocodes: the basis of structural design (EN 1990)	Nottingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
02 October 2007	Eurocodes Expert roadshow	Belfast	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
04 October 2007	Design of steel structures to Eurocode 3	Bristol	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
08 October 2007	Eurocodes Expert roadshow	Birmingham	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
09 October 2007	Eurocodes Expert roadshow	Cardiff	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
17 October 2007	Eurocode 7: geotechnical design	Ascot	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
08 November 2007	Eurocodes Expert roadshow	London	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
14 November 2007	Eurocode 1—actions on structures	Nottingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
19 November 2007	Eurocodes Expert roadshow	Manchester	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
20 November 2007	Eurocodes Expert roadshow	Leeds	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
20 November 2007	Design of concrete structures to Eurocode 2	Ascot	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
28 November 2007	Design of steel structures to Eurocode 3	Nottingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
29 November 2007	Eurocodes Expert roadshow	Glasgow	£99	Eurocodes Expert	020 7665 2427	eurocodes.expert@eurocodes.co.uk
04 December 2007	Eurocode 7: geotechnical design	Birmingham	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com
05 December 2007	Design of structural masonry to Eurocode 6	Manchester	£265	ICE / Thomas Telford	0800 1830133	training@thomastelford.com

EUROCODES PUBLICATIONS UPDATE

Eurocodes Expert aims to provide details of all significant publications relating to Eurocodes, including guide books, journal papers and articles. Several of the documents are free to download via the Eurocodes Expert website at www.eurocodes.co.uk, which also includes contact details for all other publications. Listed below are selected recent and forthcoming publications from the Eurocodes Expert database. They are categorised by the Eurocode they relate to, with the most recent or forthcoming publications shown first. Please let the Eurocodes Expert manager Oriana Marcolongo know of any errors or omissions.

Year	Title	Author	Publisher	Cost
General				
2007	Designers' guide to EN 1991-1-2, EN1992-1-2, EN 1993-1-2 and EN 1994-1-2 Eurocodes: fire engineering – actions on steel, concrete and composite structures	D Moore, C Bailey, T Lennon and Y Wang	ICE / Thomas Telford	£55
2006	Eurocode design of underground metro structures	Beadman, David	ICE	FREE
2005	Design of bridges (handbook 4)	Leonardo da Vinci Pilot Project CZ/02/B/F/PP-134007	European Commission	FREE
2005	Design of buildings for the fire situation (handbook 5)	Leonardo da Vinci Pilot Project CZ/02/B/F/PP-134007	European Commission	FREE
2004	Implementation of the structural Eurocodes	IStructE	IStructE	FREE
2004	National strategy for implementation of the structural Eurocodes: design guidance	IStructE	IStructE	FREE
Eurocode 0 – Basis				
2005	Reliability backgrounds (handbook 2)	Leonardo da Vinci Pilot Project CZ/02/B/F/PP-134007	European Commission	FREE
2002	Designers' guide to EN 1990 Eurocode: Basis of structural design	H Gulvanessian, J A Calgario, M Holický	ICE / Thomas Telford	£50
Eurocode 1 – Actions				
2007	Designers' guide to EN 1991-1-1, 1991-1-3 and 1991-1-5 to 1-7 Eurocode 1: Actions on structures – General rules and actions on buildings	H Gulvanessian, J A Calgario, P Formichi, G Harding	ICE / Thomas Telford	£55
2007	Designers' Guide to EN 1991-2, 1991-1-3 and 1991-1-5 to 1-7 Eurocode 1: Actions on structures – Traffic loads and other actions on bridges	J-A Calgario, M Tschumi, N Shetty and H Gulvanessian	ICE / Thomas Telford	£60
2007	Designers' Guide to EN 1991-1-4 Eurocode 1: Actions on structures – General actions – Wind actions	N Cook	ICE / Thomas Telford	£50
2006	How to calculate the design values of loads using Eurocodes (GD 2)	TRADA Technology	TRADA	£20
2005	Action effects for buildings (handbook 3)	Leonardo da Vinci Pilot Project CZ/02/B/F/PP-134007	European Commission	FREE
2005	Eurocodes: using reliability analysis to combine action effects	Gulvanessian H, Holicky M	ICE	FREE
Eurocode 2 – Concrete				
2007	Designers' guide to EN 1992-2 Eurocode 2: Design of concrete structures – Concrete bridges	C R Hendy and D A Smith	ICE / Thomas Telford	£85
2007	Early-age thermal crack control in concrete (C660)	Bamforth P	CIRIA	£80 (£40 for core and books club members)
2006	Concise Eurocode 2	Narayanan RS, Goodchild CH	The Concrete Centre	£45
2006	How to design concrete structures using Eurocode 2: columns	Moss R, Brooker O	The Concrete Centre	FREE
2006	How to design concrete structures using Eurocode 2: getting started	Brooker, O	The Concrete Centre	FREE
2006	How to design concrete structures using Eurocode 2: slabs	Moss R, Brooker O	The Concrete Centre	FREE
2006	How to design concrete structures using Eurocode 2: foundations	Webster R, Brooker O	The Concrete Centre	FREE
2006	How to design structures using Eurocode 2: beams	Moss R, Brooker O	The Concrete Centre	FREE
2006	How to design structures using Eurocode 2: column design charts	Moss R, Brooker O	The Concrete Centre	FREE
2006	Implementation of Eurocode 2 within the UK	Jones A E K	IStructE	FREE
2006	Manual for the design of concrete building structures to Eurocode 2	IStructE	IStructE	£70 (£45 to IStructE members)
2006	PD 6687:2006 Background paper the UK national annexes to BS EN 1992-1	BSI	BSI	£118 (£59 to BSI members)
2006	Standard method of detailing structural concrete. A manual for best practice (3 rd edition)	IStructE	IStructE	£125 (£75 for IStructE members)
2005	Derivation of design moment and shear coefficients for slabs and beams to Eurocode 2	Concrete Industry Eurocode 2 Group (CIEG)	The Concrete Centre	FREE
2005	Derivation of the flexure design equations	Construction Industry Eurocode 2 Group (CIEG)	The Concrete Centre	FREE
2005	Designers' guide to EN 1992-1-1 and EN 1992-1-2 Eurocode 2: Design of concrete structures – General rules and rules for buildings and structural fire design	R S Narayanan and A Beeby	ICE / Thomas Telford	£65
2005	Eurocode 2 design flowcharts	Concrete Industry Eurocode 2 Group (CIEG)	The Concrete Centre	FREE
2005	Eurocode 2 v. BS8110	Moss R, Webster R	The Concrete Centre	FREE
2005	How to design concrete structures to Eurocode 2: introduction to Eurocodes	Narayanan R, Brooker O	The Concrete Centre	FREE
2005	How to design concrete structures using Eurocode 2: calculating deflections of concrete members	Concrete Industry Eurocode 2 Group (CIEG)	The Concrete Centre	FREE
2005	How to design concrete structures using Eurocode 2: flat slabs	Moss R, Brooker O	The Concrete Centre	FREE
2005	Practical use of Eurocode 2	Webster R	The Concrete Centre	FREE
Eurocode 3 – Steel				
2007	Designers' guide to EN 1993-2 Eurocode 3: Design of steel structures – Steel bridges	C R Hendy and C J Murphy	ICE / Thomas Telford	£85
2005	Designers' guide to EN 1993-1-1 Eurocode 3: Design of steel structures – General rules and rules for buildings	L Gardner and D Nethercot	ICE / Thomas Telford	£50
2005	Eurocode 3 and the in-plane stability of portal frames	Lim JBP, King CM, Rathbone AJ, Davies JM, Edmonson V	IStructE	FREE
Eurocode 4 – Composite				
2006	Composite beam design to Eurocode 4	R M Lawson & K F Chung	The Steel Construction Institute	£34 (members rates)
2006	Designers' guide to EN 1994-2 Eurocode 4: Design of composite steel and concrete structures – General rules and rules for bridges	C R Hendy and Professor R Johnson	ICE / Thomas Telford	£65
2004	Designers' guide to EN 1994-1-1: Eurocode 4: Design of composite steel and concrete structures – General rules and rules for buildings	R P Johnson and D Anderson	ICE / Thomas Telford	£50
Eurocode 5 – Timber				
2008	Designers' guide to EN 1995-1-1 Eurocode 5: Design of timber structures – Common rules and rules for buildings	Vahlik Enjily and Julie Bregulla	ICE / Thomas Telford	£55
2007	Manual for the design of timber building structures to Eurocode 5	IStructE	IStructE	TBA
2006	Eurocode 5 – an introduction	TRADA Technology Ltd	TRADA	£6
2006	How to calculate deformations in timber structures using Eurocodes	TRADA Technology	TRADA	£20
2006	New Eurocode 5: a boost for timber bridge construction?	wood.for good	IStructE	FREE
Eurocode 6 – Masonry				
2007	Designers' guide to EN 1996-1-1 Eurocode 6: Design of masonry structures – Common rules for reinforced and unreinforced masonry structures	tbc	ICE / Thomas Telford	£50
2007	Manual for the design of plain masonry in building structures to Eurocode 6	IStructE	IStructE	TBA
Eurocode 7 – Geotechnical				
2006	Eurocode 7: implications for UK practice	Driscoll R	CIRIA	£100
2005	Eurocode 7 national application document	AGS	AGS	FREE
2004	Designers' guide to EN 1997-1 Eurocode 7: Geotechnical design – General rules	R Frank, C Bauduin, R Driscoll, M Kavvasas, N Krebs Ovesen, T Orr and B Schuppener	ICE / Thomas Telford	£50
Eurocode 8 – Earthquake				
2005	Designers' guide to EN 1998-1 and 1998-5. Eurocode 8: Design provisions for earthquake resistant structures	Professor Michael N Fardis, Dr. Eduardo Carvalho, Professor Amr Alnashai, Professor Ezio Faccioli and Professor Paolo Pinto, Professor Andre Plumier	ICE / Thomas Telford	£75
2004	Eurocode 8 and its implications for UK-based structural engineers	Booth E, Skipp B	IStructE	FREE

Constructive contributions to *Eurocodes News* are always welcomed and should be emailed to Eurocodes Expert Manager Oriana Marcolongo at eurocodes.expert@eurocodes.co.uk. *Eurocodes News* is edited by Simon Fullalove, designed by Kneath Associates and published by Eurocodes Expert, 1 Heron Quay, London, E14 4JD, t 020 7665 2427, f 020 76538 2847, eurocodes.expert@eurocodes.co.uk. This and previous issues are available online at the Eurocodes Expert website at www.eurocodes.co.uk