

 **EUROCODE 6**
Background and Applications

EN 1996 Design of Masonry Structures

A dissemination of information for training workshop

2-3 April 2009, Brussels
Charlemagne Conference Centre



Organised by the European Commission
DG Enterprise and Industry
Joint Research Centre

with the support of
CEN/TC250, CEN Management Centre
and Member States



Malcolm Greenley
Programme Manager –
BSI Secretary to
CEN/TC 250

The Member States of the EU and EFTA⁽¹⁾ recognize that Eurocodes serve as reference documents for the following purposes :

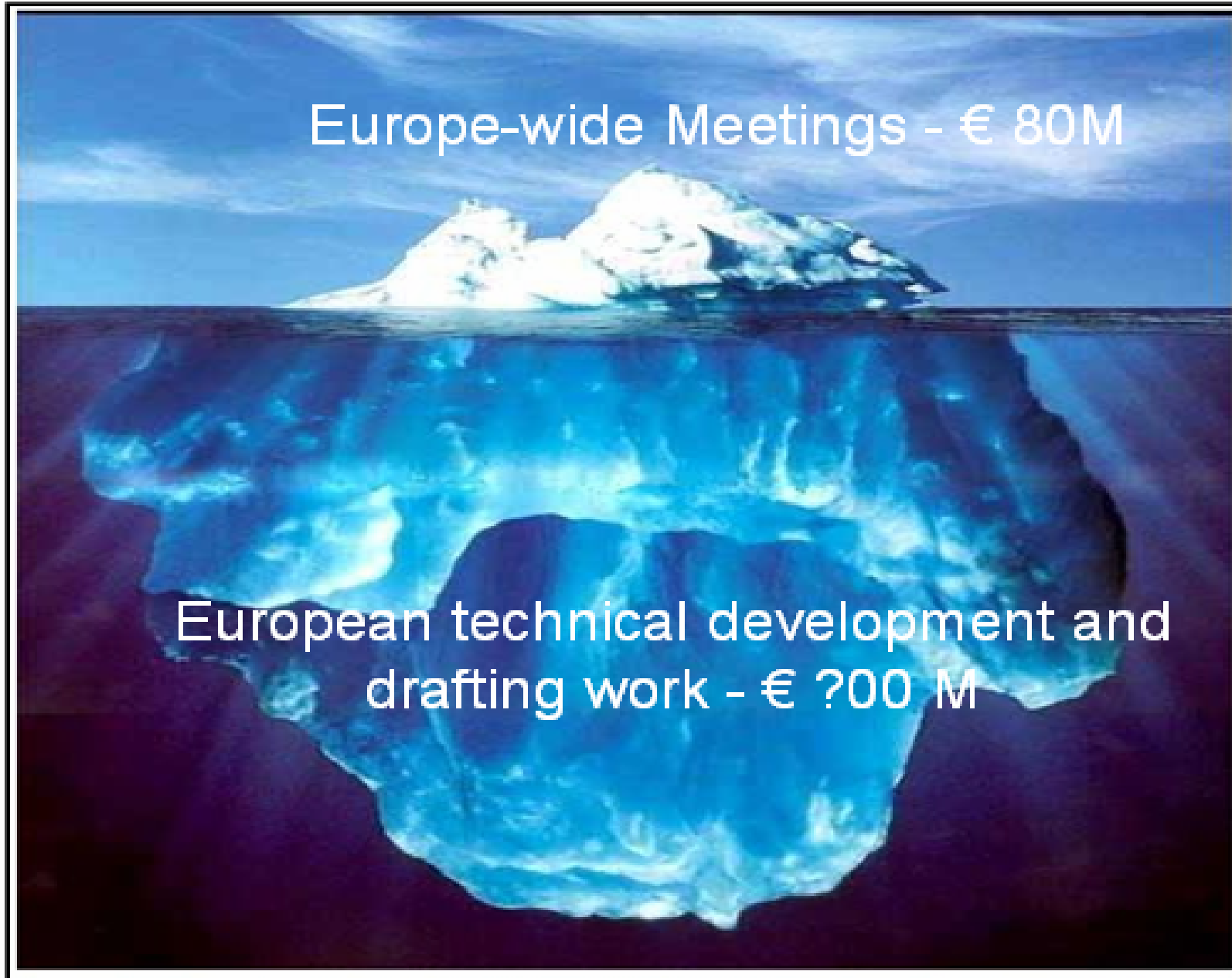
- **as a means to prove compliance of building and civil engineering works with the essential requirements of Council Directive 89/106/EEC, particularly Essential Requirement N°1 – Mechanical resistance and stability – and Essential Requirement N°2 – Safety in case of fire ;**
- **as a basis for specifying contracts for construction works and related engineering services ;**
- **as a framework for drawing up harmonised technical specifications for construction products (ENs and ETAs)**

(1) EFTA : European Free Trade Association (Iceland, Norway, Switzerland, Liechtenstein)



In addition, the Eurocodes are expected to :

- **improve the functioning of the single market for products and engineering services by removing obstacles arising from different nationally codified practices for the assessment of structural reliability ;**
- **improve the competitiveness of the European construction industry and the associated professionals and industries, in countries across Europe**



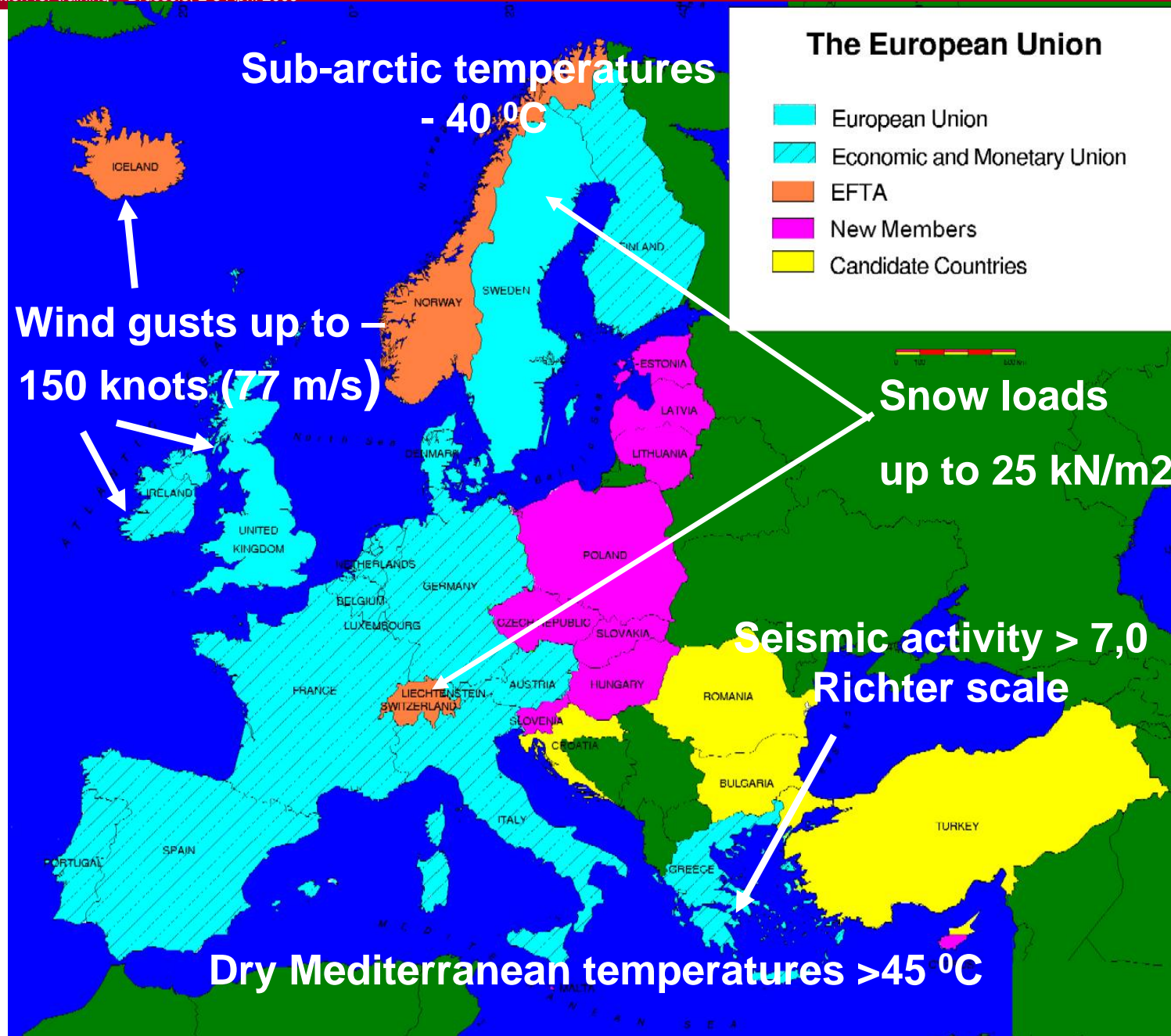


The Evolution of Eurocodes includes the activities required by the implementation and use of the EN Eurocodes on the following topics:

- ❖ **Maintenance,**
- ❖ **Harmonization,**
- ❖ **Further development.**
- ❖ **Promotion, education and training**

The problem is not to teach Eurocodes, but to teach the design of structures with the Eurocodes.

- **The correct use of the Eurocodes promotes innovation and competitiveness of industry**
- **The correct use of the Eurocodes needs a high quality background information on their scientific and technical basis to avoid any misinterpretation**
- **Several facets for the promotion of Eurocodes :**
 - **Education of students in EU Engineering schools and Universities,**
 - **Education of engineers inside companies**
 - **Education of public and private “clients” on all technical and legal aspects**
 - **International promotion – flexibility is key**





Some locations where Eurocode promotion has occurred



The E.U./JRC, BSI, and experts have promoted Eurocodes globally through promotional seminars and lectures at conferences

E.U. Commission actively support the Promotion of the Eurocodes through the Joint Research Centre:

Eurocodes Workshop, Varese
27th to 29th November 2006

Delegates attended from:

Algeria, Egypt, Jordan,
Lebanon, Morocco, Tunisia
and Albania





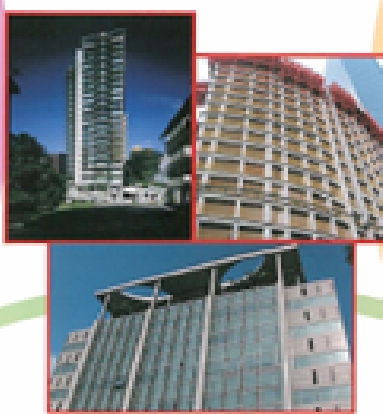
Conclusions from the conference:

- The Eurocodes are recognised as design codes for practice of high quality and coherence.
- Especially with regard to the large number of different regions in China the Chinese are highly interested in the way of handling specific local/regional conditions.
- In addition Eurocodes are a good basis for better mutual understanding, technical discussions, and exchange of experience.
- It is thought that in the short term China is unlikely to adopt the Eurocodes, however interestingly it is believed they have been translated into Mandarin



Seminar on Implementation of Eurocodes

EN 1990: Basis of Structural Design
EN 1991: Actions on Structures
EN 1992: Design of Concrete Structures

Date : 15 July 2008
Time : 9.00am to 5.30pm
Venue : SPRING Singapore Auditorium



Jointly Organized by

Implementation of Eurocodes

EN 1990: Basis of Structural Design
EN 1991: Actions on Structures
EN 1992: Design of Concrete Structures



Are you ready for Eurocodes implementation in Singapore?

Since the announcement by BCA in Oct 2004 of the plan to implement the Eurocodes in Singapore, SPRING Singapore with support of BCA have commissioned this process for the adoption of Eurocodes.

This seminar aims to guide the industry in implementation of the Eurocodes stated above and help facilitate industry's migration to these Eurocodes.

This seminar is organized by SPRING Singapore and BCA in collaboration with EC to help enterprises migrate towards the adoption of Eurocodes in tandem with EC.

The seminar will give participants an overview and implementation details of EC EN 1990, EC EN 1991 and EC EN 1992 including the Draft Singapore National Annexes which are essential to guide the industry on application of the Eurocodes. Local as well as UK experts will provide insights into the standards development and implementation of Eurocodes with seminar participants.

WHO SHOULD ATTEND

- ▶ Professional engineers / architects / qualified persons / consultants
- ▶ Clients
- ▶ Contractors
- ▶ Architects
- ▶ Product and material manufacturers
- ▶ Relevant government agencies

PROGRAMME

Welcome Address
Seminar Sponsors
Opening Address
Building & Construction Authority

An Overview of the Eurocodes Standards Development and Implementation Experience in the UK
An Introduction to Eurocodes
Global Programme Manager, The British Standards Institution

Guidance on Implementation of Eurocodes – UK's Experience
- EN 1990 'Basis of structural design'
- EN 1991 'Actions on structures'
- EN 1992 'Design of concrete structures'
Dr Steve Denton
Director of Bridge and Structural Engineering, Parsons Brinckerhoff Ltd & Visiting Professor, University of Bath

Update on Status of Singapore National Annex (NA) Development to EC EN 1990 & EC EN 1991 and Highlights on Draft Singapore National Annexes
Dr Tom Tang (Host), Managing Technological University & Working Group Convener

Update on Status of Singapore National Annex Development to EC EN 1992 and Highlights on the Draft Singapore National Annex
Dr K. C. Chan (Org), Singapore Concrete Institute & Working Group Convener

Panel Discussion
Moderation
Dr Tom Chan & Mr Chiew Kiat Chuan
Technical Committee on Building Structure & Sub-Structure

SEMINAR DETAILS

Date: 15 July 2008
Time: From 9.00am
Venue: SPRING Singapore Auditorium,
1 Raffles Mall, Central
Park, Level 3
Singapore 179003
Fees: S\$3.00 (per participant)
(This includes GST. Course materials, Lunch & refreshments will be provided)

WHAT YOU WILL LEARN

- ✓ Update on the Eurocodes implementation programme in Singapore
- ✓ The Eurocodes experience in UK, benefits and lessons, when to implement and considerations, the UK past Eurocodes and practitioner's perspective
- ✓ Overall technical view on EC EN 1990, EC EN 1991, EC EN 1992 and guidance on implementation.

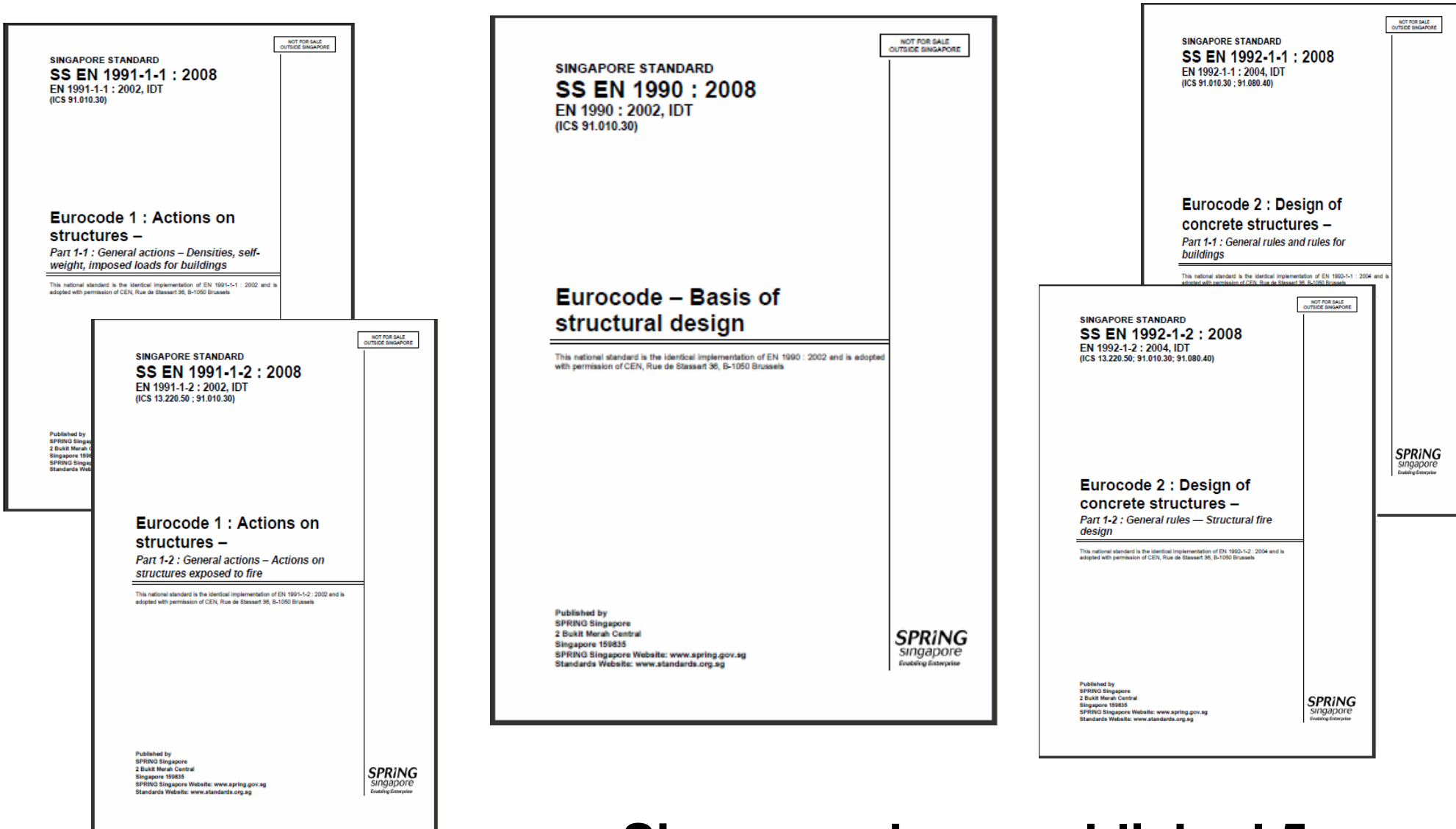
ACCREDITATION

BCA/BA – pending
PEB – 7 PDUs

Jointly organized by




Eurocodes Conference in Singapore – July 2008 to launch their National Annexes as DPCs



The image displays five covers of Singapore Standards (SS EN) wrappers for Eurocode 1 and Eurocode 2 parts. Each cover includes the title, standard number, and publication details.

Top Left Cover:
SINGAPORE STANDARD
SS EN 1991-1-1 : 2008
EN 1991-1-1 : 2002, IDT
(ICS 91.010.30)
Eurocode 1 : Actions on structures –
Part 1-1 : General actions – Densities, self-weight, imposed loads for buildings
This national standard is the identical implementation of EN 1991-1-1 : 2002 and is adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Bottom Left Cover:
SINGAPORE STANDARD
SS EN 1991-1-2 : 2008
EN 1991-1-2 : 2002, IDT
(ICS 13.220.50 ; 91.010.30)
Eurocode 1 : Actions on structures –
Part 1-2 : General actions – Actions on structures exposed to fire
This national standard is the identical implementation of EN 1991-1-2 : 2002 and is adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Middle Cover:
SINGAPORE STANDARD
SS EN 1990 : 2008
EN 1990 : 2002, IDT
(ICS 91.010.30)
Eurocode – Basis of structural design
This national standard is the identical implementation of EN 1990 : 2002 and is adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Top Right Cover:
SINGAPORE STANDARD
SS EN 1992-1-1 : 2008
EN 1992-1-1 : 2004, IDT
(ICS 91.010.30 ; 91.080.40)
Eurocode 2 : Design of concrete structures –
Part 1-1 : General rules and rules for buildings
This national standard is the identical implementation of EN 1992-1-1 : 2004 and is adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Bottom Right Cover:
SINGAPORE STANDARD
SS EN 1992-1-2 : 2008
EN 1992-1-2 : 2004, IDT
(ICS 13.220.50 ; 91.010.30 ; 91.080.40)
Eurocode 2 : Design of concrete structures –
Part 1-2 : General rules – Structural fire design
This national standard is the identical implementation of EN 1992-1-2 : 2004 and is adopted with permission of CEN, Rue de Stassart 36, B-1050 Brussels.

Published by SPRING Singapore, 2 Bukit Merah Central, Singapore 159835. SPRING Singapore Website: www.spring.gov.sg, Standards Website: www.standards.org.sg.

SPRING Singapore Enabling Enterprise

Singapore have published 5 Eurocode parts in SS EN wrappers

The main conclusion are:

Eurocodes are recognized as the most advanced, fully integrated suite of structural codes in the world and due to their flexibility allows adaption for use in any region.

Many countries have based their national codes on European standards – (BS, DIN, NF) and will need to change to maintain their relevance.

Several countries Singapore, South Africa, Malaysia, Vietnam have already committed to the adoption of Eurocodes.

Other countries are awaiting the experiences of the full pan Europe implementation in March 2010.

Further promotion in key areas is necessary – Conferences and Workshops

Revisit countries which have expressed interest and support with Workshops and Training

Assistance with development of National Annexes (funding and technical resource)

Joint Research Centre – E.U. Commission (JRC) -
<http://eurocodes.jrc.ec.europa.eu/>

BSI - <http://www.bsi-global.com/en/>

Eurocodes Expert - <http://www.eurocodes.co.uk/>

Institution of Structural Engineers - <http://www.istructe.org/>

CLG – UK government -

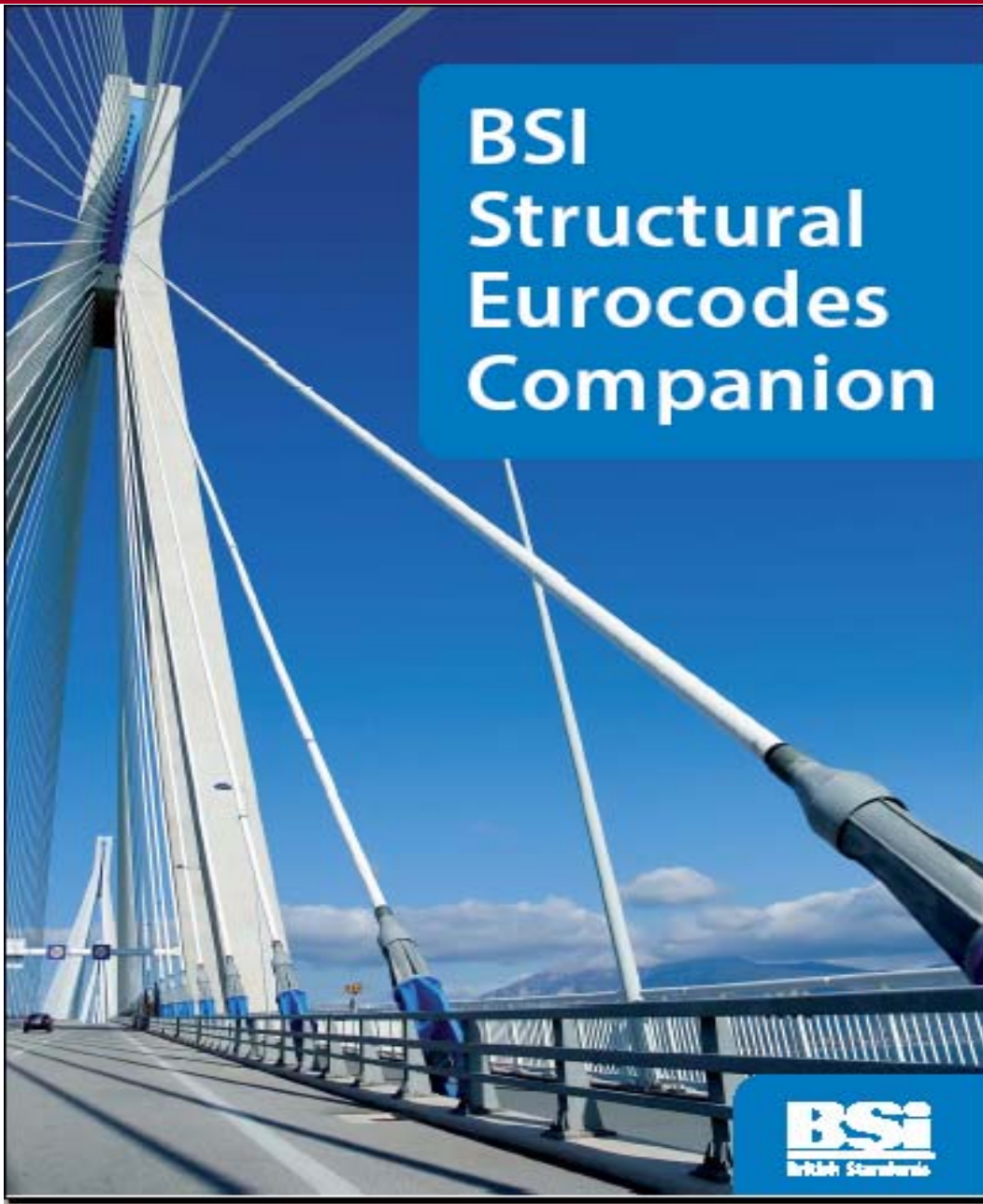
<http://www.communities.gov.uk/planningandbuilding/planningbuildingregulationsresearch/buildingdivisionresearch>

Concrete Centre - <http://www.concretecentre.com>

Steel Construction Institute –

<http://www.steel-sci.org/Information/Eurocodes>


and Access steel at : <http://www.access-steel.com/>



Provides a valuable overview of the Eurocodes

Contributions from some of the UK's leading experts on Eurocodes

Free Download - from BSOL



Download free sample pages at
www.bsi-global.com/pp1990

New Revision

Practical guidance on Structural Eurocodes for students

PP 1990:2007 Extracts from the Structural Eurocodes for students of structural design

raising standards worldwide™

PP 1990:2007 Extracts from the Structural Eurocodes for students of structural design

PP 1990 is a user-friendly guide which introduces the principles of Structural Eurocodes to students of civil engineering, structural engineering and structural design.

This revised edition of PP 1990 includes updated extracts from nine of the ten published Eurocodes[†]. Each extract is accompanied with commentary and worked examples written by experts from industry and UK universities. This second edition also has the benefit of featuring extracts and explanatory text on the relevant published UK National Annexes which supply information on any nationally determined parameters referred to in the Eurocode text.

It is important for students to be aware of the Structural Eurocode series. The series details common design principles and rules for the

design of structures and component products, and describes a common series of methods for calculating the structural strength of elements used in construction. From 2010 this set of unified international codes of practice will replace national codes in the European Community. They are already mandatory for European public works and are set to become the benchmark standard for the private sector, throughout Europe and Worldwide.

NEW REVISION

- ISBN 978 0 580 50264 4
- BSI order ref PP 1990:2007

Price £35*

Pack of 5 £125*

PP 1990:2007 is also a valuable resource for postgraduate study and as a development tool and resource for engineers and technicians.

DOWNLOAD FREE SAMPLE PAGES AT: www.bsi-global.com/PP1990

Marketing reference: 1990-I 09/07

[†]All Eurocodes included contain updated material excluding Chapter 9 which is based on BS EN 1999 Eurocode 9. Design of aluminium structures

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Thank you for your attention

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