

## Structural engineering knowledge mapping

Category	Sub-category	Existing Institution of Structural Engineers publication(s) (Italics denotes in preparation or planned)	Examples of other sources of guidance
General			Cobb <i>Structural engineer's pocket book</i> 2 <sup>nd</sup> ed (Elsevier Butterworth Heinemann, 2009)
Construction industry			Morton & Ross <i>Construction UK: introduction to the industry</i> . 2 <sup>nd</sup> ed (Blackwell, 2007)
Construction law, contracts, dispute resolution		Expert Evidence: a guide for expert witnesses and their clients. 2 <sup>nd</sup> ed	ICE, ACE, CIC, RIBA, Ramsey ICE manual of construction law (Telford, 2011), Uff <i>Construction law</i> 10 <sup>th</sup> ed (Sweet & Maxwell, 2009). Adriaanse <i>Construction contract law</i> 3 <sup>rd</sup> ed (Palgrave Macmillan, 2010), Murdoch & Hughes <i>Construction contracts: law and management</i> 4 <sup>th</sup> ed (Taylor & Francis, 2008)
Safety		Safety in tall buildings and other buildings of large occupancy (out of print) <i>Risk in structural engineering</i>	SCOSS, CROSS, CIRIA, HSE, McAleenan <i>ICE manual of health and safety in construction</i> (Telford, 2010)
	CDM		CIRIA, CITB Construction Skills, HSE ACoP, Joyce <i>CDM regulations 2007 explained</i> (Telford, 2007)
Computers		Guidelines for the use of computers for engineering calculations	Davies, S.R. <i>Spreadsheets in structural design</i> (Longman, 1995), Christy <i>Engineering with the spreadsheet</i> (ASCE, 2006), Stolarski <i>Engineering analysis with ANSYS software</i> (Butterworth-Heinemann, 2006)
	CAD		Various AutoCAD handbooks
	ITC		
History		Structural engineering: history and development	Ashgate series <i>Studies in the history of civil engineering</i> [12 volumes], Addis <i>Building: 3000 years of design, engineering and construction</i> (Phaidon, 2007), Saint <i>Architect and engineer: a study in sibling rivalry</i> (Yale University Press, 2007)

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Mathematics			Breach <i>Fundamental maths for engineering and science</i> (Palgrave Macmillan, 2011), Stroud <i>Engineering mathematics</i> 6 <sup>th</sup> ed (Palgrave Macmillan, 2007), Singh <i>Engineering mathematics through applications</i> (Palgrave, 2003)
Surveying			RICS, Bannister <i>Surveying</i> 7 <sup>th</sup> ed (Prentice Hall, 1998), Schofield <i>Engineering surveying</i> 6 <sup>th</sup> ed (Butterworth Heinemann, 2007)
Geology			Geological Society, BGS
	Seismology		ICE, EEFIT, Bolt <i>Earthquakes</i> 5 <sup>th</sup> ed (Freeman, 2003)
Energy			
	Wind		Hau <i>Wind turbines</i> 2 <sup>nd</sup> ed (Springer, 2006), Manwell <i>Wind energy explained: theory, design and application</i> . 2 <sup>nd</sup> ed (Wiley, 2009)
Timber		Manual for the design of timber building structures to Eurocode 5	TRADA, Ozelton & Baird <i>Timber designers' manual</i> . 3 <sup>rd</sup> ed (Blackwell, 2002), Porteous & Kermani <i>Structural timber design to Eurocode 5</i> (Blackwell, 2007), McKenzie <i>Design of structural timber to Eurocode 5</i> . 2 <sup>nd</sup> ed (Palgrave Macmillan, 2007), ICE <i>Designers' guide</i> [due 2011]
Masonry		Manual for the design of plain masonry in building structures. 2 <sup>nd</sup> ed	BDA, IMS, Curtin <i>Structural Masonry designers' manual</i> . 3 <sup>rd</sup> ed (Blackwell, 2006)
		Manual for the design of plain masonry in building structures to Eurocode 6	IMS <i>EN 1996-1-1 and EN 1996-2: guidance and worked examples</i> (IMS, 2009), ICE <i>Designers' guide</i> [due 2011], Concrete Centre <i>How to design masonry structures using Eurocode 6</i>
Concrete		Manual for the design of concrete building structures to Eurocode 2	<a href="http://www.eurocode2.info">www.eurocode2.info</a> , Concrete Centre, Concrete Society, Concrete Centre <i>Concrete buildings scheme design manual: a handbook for the IStructE chartered membership examination</i> (Concrete Centre, 2006), Concrete Centre <i>Concise Eurocode 2: for the design of in-situ concrete framed buildings to BS EN1992-1-1:2004 and its UK National Annex: 2005</i> (Concrete Centre, 2006), ICE <i>Designers' guides</i>

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		Guide to the structural use of lightweight aggregate concrete	
	Reinforcement	Manual for the design of reinforced concrete building structures. 2 <sup>nd</sup> ed	BCA, Concrete Centre, Concrete Society, Bhatt, P et al <i>Reinforced concrete: design theory and examples</i> (Spon, 2006), Threlfall <i>Reynolds's reinforced concrete designer's manual</i> . 11 <sup>th</sup> ed (Taylor & Francis, 2008), Martin & Purkiss <i>Concrete design to EN 1992</i> (Butterworth Heinemann, 2006)
		Standard method of detailing structural concrete: a manual for best practice. 3 <sup>rd</sup> ed	BCA, Concrete Centre, Concrete Society,
		Recommendations for the permissible stress design of reinforced concrete building structures	
	Precast		Narayanan <i>Precast Eurocode 2: design manual</i> (Concrete Centre, 2007), Elliott <i>Multi-storey precast concrete framed and panel structures</i> . 2 <sup>nd</sup> ed (Blackwell, 2011)
Steel		Manual for the design of steel buildings to Eurocode 3	<a href="http://www.access-steel.com">www.access-steel.com</a> , BCSA, SCI, ICE <i>Designers' guide</i>
		Manual for the design of steelwork building structures. 3 <sup>rd</sup> ed	Hayward <i>Steel detailers manual</i> . 3 <sup>rd</sup> ed (Wiley-Blackwell, 2011), SCI <i>Steel designers manual</i> 6 <sup>th</sup> ed (Blackwell, 2003), Al Nageim & MacGinley <i>Steel structures: practical design studies</i> 3 <sup>rd</sup> ed (Spon, 2005) etc
	Iron		CTI (formerly BCIRA), SCI P 138 <i>Appraisal of existing iron &amp; steel structures</i> (SCI, 1995), Swailes et al <i>Scottish iron structures</i> (Historic Scotland, 2006)
	Stainless Steel		Euro-Inox; SCI <i>Structural design of stainless steel</i> (SCI, 2002)
Aluminium			Aluminium Federation, BS 8118, Bull <i>Aluminium structural elements design: a practical guide to Eurocode 9</i> (Elsevier, 2011), Muller <i>Introduction to structural aluminium design</i> (Whittles, 2010), Kissell & Ferry <i>Aluminium structures</i> 2 <sup>nd</sup> ed (Wiley, 2002) etc

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Composites		Interim guidance on the design of reinforced concrete structures using fibre composite reinforcement	Collings <i>Steel-concrete composite buildings: designing with Eurocodes</i> (Telford, 2010), Nethercot <i>Composite construction</i> (Spon, 2003), ICE <i>Designers' guide</i>
Glass		Structural use of glass in buildings {2 <sup>nd</sup> ed in preparation)	CWCT, GGF, Schittich <i>Glass construction manual</i> 2 <sup>nd</sup> ed (Birkhauser, 2007), Achilles <i>Basics: glass construction</i> (Birkhauser, 2009)
Plastics & polymers			RAPRA, Bank <i>Composites for construction: structural design with FRP materials</i> (Wiley, 2006), EUROCOMP <i>design code and handbook</i> (Spon, 1996)
Adhesives		Guide to the structural use of adhesives	Mays & Hutchinson <i>Use of adhesives in civil engineering</i> (CUP, 1992), Amstock <i>Handbook of adhesives and sealants in construction</i> (McGraw-Hill, 2000)
Natural materials			Keefe <i>Earth buildings</i> (Spon, 2005), Morton <i>Earth masonry</i> (BRE, 2008)
Structural design		Communication of structural design (out of print) <i>Philosophy of structural design</i>	
		Stability of buildings A working engineer's guide on robustness and disproportionate collapse <i>Philosophy of structural design</i>	Starossek <i>Progressive collapse of structures</i> (Telford, 2009), IABSE <i>Design for robustness. IABSE SED 11</i> (IABSE, 2009)

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		Aims of structural design <i>Philosophy of structural design</i>	Jennings <i>Structures: from theory to practice</i> (Spon, 2004), Millais <i>Building structures</i> . 2 <sup>nd</sup> ed (Spon, 2005), Garrison <i>Basic structures for engineers and architects</i> (Blackwell, 2005), Yeomans <i>How structures work</i> (Wiley-Blackwell, 2009), Hunt <i>Tony Hunt's structures notebook</i> 2 <sup>nd</sup> ed (Architectural Press, 2003), Hunt <i>Tony Hunt's sketchbook; Tony Hunt's second sketchbook</i> (Architectural Press, 1999; 2003), Seward <i>Understanding structures: analysis, materials, design</i> . 4 <sup>th</sup> ed (Palgrave Macmillan, 2009), Ji <i>Seeing and touching structural concepts</i> (Taylor & Francis, 2008), ICE <i>Designers' guide</i>
		The achievement of structural adequacy in buildings <i>Philosophy of structural design</i>	
	Loading	Manual for the design of building structures to Eurocode 1 and Basis of Design	Stanhope <i>Structural floor loading and raised floor specification for office buildings</i> (Stanhope, 2004) [Position paper], ICE <i>Designers' guides</i>
	Seismic	Manual for the seismic design of steel and concrete buildings to Eurocode 8	Booth & Key <i>Earthquake design practice for buildings</i> 2 <sup>nd</sup> ed (Telford, 2006), Dowrick <i>Earthquake resistant design and risk reduction</i> 2 <sup>nd</sup> ed (Wiley, 2009), Coburn & Spence <i>Earthquake protection</i> 2 <sup>nd</sup> ed (Wiley, 2002), Naeim <i>Seismic design handbook</i> 2 <sup>nd</sup> ed (Kluwer, 2001), ICE <i>Designers' guide</i>
	Wind	Manual for the design of building structures to Eurocode 1 and Basis of Design	Cook <i>Wind loading: a practical guide to BS 6399-2</i> (TTL, 2002), Holmes <i>Wind loading of structures</i> . 2 <sup>nd</sup> ed (Taylor & Francis, 2007), ICE <i>Designers' guide</i>
Testing		Structural assessment: the role of large & full-scale testing	Doran & Cockerton eds <i>Principles and practice of testing in construction</i> (Testing in Construction vol 1) (Whittles, 2006), Bungey <i>Testing of concrete in structures</i> . 4 <sup>th</sup> ed (Taylor & Francis, 2006), Edgell ed <i>Testing of ceramics in construction</i> (Testing in Construction vol 2) (Whittles, 2005)
	Materials	Appraisal of existing structures. 3 <sup>rd</sup> ed	

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Corrosion		Cathodic protection of concrete structures: the way ahead	Ahmad <i>Principles of corrosion engineering and corrosion control</i> (Butterworth-Heinemann, 2006), Richardson et al <i>Shreir's corrosion</i> (Elsevier, 2009)
Structural analysis		Qualitative analysis of structures (out of print)	Brohn <i>Understanding structural analysis</i> 3 <sup>rd</sup> ed (New Paradigm Solutions, 2005). Megson, T H G <i>Structural and stress analysis</i> 2 <sup>nd</sup> ed (Elsevier, 2005) etc
		Analysis and testing of Bridges (out of print)	Highways Agency
Structural failure		Structural failures in buildings (out of print)	SCOSS, CROSS, Campbell ed <i>Learning from construction failures</i> (Whittles, 2001), Delatte <i>Beyond failure: forensic case studies for civil engineers</i> (ASCE, 2009), MacAlevey <i>Structural engineering failures: lessons for design</i> (Createspace, 2010), ICE forensic engineering conferences
Structural dynamics			ICE <i>Dynamics</i> 2 <sup>nd</sup> ed (Telford, 2002), Craig & Kurdila <i>Fundamentals of structural dynamics</i> 2 <sup>nd</sup> ed (Wiley, 2006), Paz <i>Structural dynamics</i> 5 <sup>th</sup> ed (Kluwer, 2004), Clough & Penzien <i>Dynamics of structures</i> . 2 <sup>nd</sup> ed (McGraw-Hill, 1993), Biggs <i>Introduction to structural dynamics</i> (McGraw-Hill, 1964)
	Wind engineering		Cook <i>Wind loading: a practical guide to BS 6399-2</i> (TTL, 2002) etc
	Earthquake engineering	Manual for the seismic design of steel and concrete buildings to Eurocode 8	Booth & Key <i>Earthquake design practice for buildings</i> 2 <sup>nd</sup> ed (Telford, 2006), Dowrick <i>Earthquake risk reduction</i> (Wiley, 2003), Naeim <i>Seismic design handbook</i> 2 <sup>nd</sup> ed (Kluwer, 2001)
	Stability	Stability of buildings A working engineer's guide on robustness and disproportionate collapse	Starossek <i>Progressive collapse of structures</i> (Telford, 2009), IABSE <i>Design for robustness</i> . IABSE SED 11 (IABSE, 2009), IABSE <i>Introduction to safety and reliability of structures</i> . SED 5. 2 <sup>nd</sup> ed (IABSE, 2006)
	Vibration	Dynamic performance requirements for permanent grandstands subject to crowd action	Concrete Centre, SCI <i>Design of floors for vibration</i> (SCI P 076, 2007), Bachmann & Ammann <i>Vibrations in structures</i> (IABSE, 1987)

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Structural elements	Facades		CWCT, Bussell et al <i>Retention of masonry facades</i> (CIRIA C579, 2003), Watts <i>Facades: technical review</i> (RIBA, 2007), Herzog <i>Façade construction manual</i> (Birkhauser, 2004)	
	Walls		BRE, BDA	
	Floors		BRE <i>Floors and flooring</i> 2 <sup>nd</sup> ed (BRE, 2003), Concrete Society TR 34 <i>Concrete industrial ground floors</i> 3 <sup>rd</sup> ed (Concrete Society, 2003)	
	Beams		Concrete Centre, SCI	
	Columns		Concrete Centre, SCI	
	Connections/Welding		BCSA, SCI, TWI, SCI green books, Owens & Cheal <i>Structural steelwork connections</i> (Butterworth, 1989), Davies <i>The science and practice of welding</i> 2 vols (CUP, 1993)	
	Roofs		BRE, Mindham <i>Roof construction and loft conversion</i> . 4 <sup>th</sup> ed (Blackwell, 2006), BRE <i>Roofs and roofing</i> (BRE, 2000)	
	Cladding/curtain walls	Aspects of cladding		CWCT
		Guidance notes on the security of the outer leaf of large concrete panels of sandwich construction (out of print)		
	Arches		Heyman <i>Masonry arch</i> (Ellis Horwood, 1982)	
	Frames		BCSA and CONSTRUCT specifications, TRADA <i>Timber frame construction</i> 4th ed (TRADA, 2008); <i>Timber frame housing: UK structural recommendations</i> 3 <sup>rd</sup> ed (TRADA, 2006)	
Plates		Timoshenko & Weinowsky-Krieger, <i>Theory of plates and shells</i> Young & Budynas <i>Roark's formulas for stress and strain</i> 7 <sup>th</sup> ed (McGraw-Hill, 2001), Szilard <i>Theories and applications of plate analysis: classical, numerical and engineering methods</i> (Wiley, 2004)		

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	Shells		IASS, Subramanian <i>Space structures: principles and practice</i> (Multi-Science, 2006)
Demolition			NFDC, BS 6187
Geotechnics			BGS, FPS, ICE, BRE, Charles <i>Geotechnics for building professionals</i> (BRE, 2005), Fookes et al <i>Geomorphology for engineers</i> (Whittles, 2005)
	Soil mechanics		Craig <i>Soil mechanics</i> 7 <sup>th</sup> ed (Spon, 2004) etc
	Basements	Design and construction of deep basements including cut-and-cover tunnels	Basement Information Centre, Puller <i>Deep excavations</i> 2 <sup>nd</sup> ed (TTL, 2003), <i>Water-resisting Basements</i> (CIRIA Report R139, 1995), <i>Basement waterproofing: design guide</i> (BCA, 1994), <i>Basement waterproofing: site guide</i> (BCA, 1994), [Concrete Centre guidance by Narayanan due 2008]
	Foundations	Soil-structure interaction: the real behaviour of structures (out of print)	BS 8004, Tomlinson <i>Foundation design and construction</i> 7 <sup>th</sup> ed (Prentice-Hall, 2001), Curtin <i>Structural foundation designers manual</i> 2 <sup>nd</sup> ed (Blackwell, 2006), Atkinson <i>Structural foundations manual for low-rise buildings</i> 2 <sup>nd</sup> ed (Spon, 2004)
	Piling		ICE, FPS, Tomlinson <i>Pile design and construction</i> 5 <sup>th</sup> ed (Taylor & Francis, 2008), Fleming <i>Piling engineering</i> . 3 <sup>rd</sup> ed (Taylor & Francis, 2009)
	Ground anchors		BS 8081
	Retaining walls		BS 8002, HK GEO, ICE <i>Retaining structures</i> (TTL, 1993), Clayton <i>Earth pressure and earth retaining structures</i> 2 <sup>nd</sup> ed (Blackie, 1993) etc
	Ground movement		<i>Ground movement and structures</i> conferences
Construction sites			Doran <i>Site engineers manual</i> 2 <sup>nd</sup> ed (Whittles, 2009)
Cranes			CIRIA <i>Crane stability on site: an introductory guide</i> (CIRIA, 2003) [CIRIA C703]
Temporary works			BS 5975, NASC TG 20-08, Illingworth <i>Temporary works</i> (TTL, 1987), Ratay <i>Handbook of Temporary Structures in Construction</i> 2 <sup>nd</sup> ed (McGraw-Hill,



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			1996), Pallett <i>Formwork, scaffolding, falsework and facade retention</i> in Doran ed <i>Site engineers manual</i> (Whittles, 2004)
Subsidence		Subsidence of low rise buildings. 2 <sup>nd</sup> ed	BRE, Freeman et al <i>Has your house got cracks</i> 2 <sup>nd</sup> ed (TTL, 2002), Biddle <i>Tree root damage to buildings</i> (Willowmead, 1998), Roberts et al <i>Tree roots in the urban environment</i> (TSO, 2006)
Tunnels			ICE, BTS, Chapman <i>Introduction to tunnel construction</i> (Spon, 2010)
Bridges			SCI, Concrete Centre, HA, ICE, Parke & Hewson <i>Manual of bridge engineering</i> 2 <sup>nd</sup> ed (Telford, 2008) etc
	Concrete		Concrete Centre, Benaim <i>The Design of prestressed concrete bridges: concepts and principles</i> (Taylor & Francis, 2008), Hewson <i>Prestressed concrete bridges</i> . 2 <sup>nd</sup> ed (Telford, 2011)
	Steel		SCI
	Cable stayed		Walther et al <i>Cable stayed bridges</i> 2 <sup>nd</sup> ed (Telford, 1999), Troitsky <i>Cable stayed bridges: theory and design</i> 2 <sup>nd</sup> ed (BSP, 1988), Gimsing <i>Cable supported bridges: concept and design</i> 2 <sup>nd</sup> ed (Wiley, 1997)
	Footbridges		OTUA triennial conferences, FIB <i>Guidelines for the design of footbridges</i> (FIB, 2005) [FIB Bulletin 32], Strasky, Jiri. <i>Stress ribbon and cable-supported pedestrian bridges</i> . 2 <sup>nd</sup> ed (Telford, 2011)
	Gantries	The operation and maintenance of bridge access gantries and runways. 2 <sup>nd</sup> ed	HSE
	Maintenance		Surrey University conferences, Ryall <i>Bridge management</i> 2 <sup>nd</sup> ed (Butterworth-Heinemann, 2009), Tilly et al <i>Iron and steel bridges: condition appraisal and remedial treatment</i> (CIRIA C664, 2008), McKibbinns et al <i>Masonry arch bridges: condition appraisal and remedial treatment</i> (CIRIA C656, 2006)
Cable-supported structures			IABSE

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Towers			Energy Networks Association on transmission towers, Smith <i>Communication structures</i> (Telford, 2007)
Liquid retaining structures			Batty & Westbrook <i>Design of water retaining structures</i> (Longman, 2001), Anchor <i>Design of liquid retaining concrete structures</i> 2 <sup>nd</sup> ed (Arnold, 1992), CIRIA <i>Underground service reservoirs: waterproofing and repair manual</i> (CIRIA, 1995) [CIRIA Report 138]
Silos			Eurocodes, Rotter <i>Guide for the economic design of circular metal silos</i> (Spon, 2001), Blight <i>Assessing loads on silos and other bulk storage structures: research applied to practice</i> (Taylor & Francis, 2006)
Highway engineering			HA, ICE, Britpave, DMRB, Delatte <i>Concrete pavement design, construction &amp; performance</i> (Taylor & Francis, 2008), Thom <i>Principles of pavement engineering</i> (Telford, 2008)
Railway engineering			Network Rail, ICE, London Underground Engineering Directorate, Permanent Way Institution <i>British railway track</i> . 7 <sup>th</sup> ed
Coastal & offshore engineering			ICE, Gerwick <i>Construction of marine and offshore structures</i> 3 <sup>rd</sup> ed (CRC Press, 2007), Bai <i>Subsea engineering handbook</i> (Gulf, 2010)
Drainage and sewerage			ICE, CIRIA, Butler & Davies <i>Urban drainage</i> 3 <sup>rd</sup> ed (Spon, 2011)
	SUDS		CIRIA
Dams			ICE, ICOLD
Contaminated Land		Building for a sustainable future: construction without depletion (2 <sup>nd</sup> ed in preparation)	ICE, EA, DCLG, CIRIA, Concrete Centre, Strange & Langford <i>Contaminated land: investigation, assessment and remediation</i> 2 <sup>nd</sup> ed (Telford, 2008) [ICE design and practice guide], Land Quality Management Ltd <i>The LQM/CIEH generic assessment criteria for human health risk assessment</i> . 2nd ed (Land Quality Press, 2009)

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Management		Guide to good management practice for engineering design offices	ICE, Project management books by Dennis Lock, Walker <i>Project management in construction</i> 5 <sup>th</sup> ed (Blackwell, 2007), CIOB. <i>Code of practice for project management for construction and development</i> . 4 <sup>th</sup> ed (Wiley, 2010)
	Communication	Communication skills for engineers and scientists (published by IChemE)	Scott & Billing <i>Communication for professional engineers</i> 2 <sup>nd</sup> ed (Telford, 1997)
	Risk	<i>Risk in Structural Engineering</i>	Summerhayes <i>Design risk management: contribution to health and safety</i> (Wiley-Blackwell, 2010), <i>RAMP</i> 2 <sup>nd</sup> ed (TTL, 2005), Loosemore <i>Risk management in projects</i> 2 <sup>nd</sup> ed (Taylor & Francis, 2005) etc
	Quality		BSI, Oakland & Marosszeky <i>Total quality in the construction supply chain</i> (Butterworth-Heinemann, 2006)
	Asset management		Lloyd <i>Asset management: whole-life management of physical assets</i> (Telford, 2010)
	Stadia	Dynamic performance requirements for permanent grandstands subject to crowd action	Nixdorf <i>Stadium atlas: technical recommendations for grandstands in modern stadia</i> (Ernst, 2008), John <i>Stadia: a design and development guide</i> 4 <sup>th</sup> ed (Architectural Press, 2007), Culley <i>Stadium engineering</i> (Telford, 2005), Home Office <i>Guide to safety at sports grounds</i> 4 <sup>th</sup> ed (HMSO, 1994) [the Green Book]
	Railway stations		RIBA
	Airports		RIBA, Kazda & Caves <i>Airport design and operation</i> 2 <sup>nd</sup> ed (Elsevier, 2007), Edwards <i>The modern airport terminal</i> 2 <sup>nd</sup> ed (Spon, 2005), Horonjeff <i>Planning and design of airports</i> 5 <sup>th</sup> ed (McGraw-Hill, 2010)
	Prisons		Home Office
	Hospitals		NHS

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	Tall	Safety in tall buildings and other buildings of large occupancy (out of print)	Taranath <i>Reinforced concrete design of tall buildings</i> (CRC Press, 2010); <i>Steel, concrete and composite design of tall buildings</i> 2 <sup>nd</sup> ed (McGraw-Hill, 1998); <i>Structural analysis and design of tall buildings</i> (McGraw-Hill, 1988), CTBUH <i>Structural systems for tall buildings</i> (McGraw-Hill, 1995), Gibbons <i>Two International Finance Centre, Hong Kong - the implication of 9/11 in Metropolis and beyond</i> (ASCE, 2005), Stafford Smith & Coull <i>Tall building structures: analysis and design</i> (Wiley, 1991) etc
	Car parks	Design recommendations for multi-storey and underground car parks. 3 <sup>rd</sup> ed. (4 <sup>th</sup> ed in preparation)	Hill Cannon <i>Car park designer's handbook</i> (TTL, 2005), ICE <i>Recommendations for the inspection, maintenance and management of car park structures</i> (TTL, 2002), <i>Enhancing the whole life structural performance of multi-storey car parks</i> (ODPM, 2002), <i>Crest Parking structures</i> 3 <sup>rd</sup> ed (Kluwer, 2001)..
	Temporary	Temporary demountable structures: guidance on procurement, design and use. 3 <sup>rd</sup> ed	
		Design of air-supported structures	
	Tension structures, membranes		TensiNet <i>European design guide for tensile surface structures</i> (TensiNet, 2004), Seidel <i>Tensile surface structures: a practical guide to cable and membrane construction</i> (Ernst, 2009), Wang <i>Free-standing tension structures: from tensegrity systems to cable-strut systems</i> (Spon, 2004)
	Underground structures	Design and construction of deep basements including cut-and-cover tunnels	Puller <i>Deep excavations</i> 2 <sup>nd</sup> ed (TTL, 2003 – 3 <sup>rd</sup> ed due 2011), Kaul <i>Cut-and-cover metro structures. Geo-structural design: an integrated approach</i> (Spon, 2010), CIRIA <i>Water-resisting basements</i> (CIRIA Report R139, 1995), Basement Information Centre
	Schools, universities, laboratories		DfE, Edwards <i>Guidelines for laboratory design: health and safety considerations</i> 4 <sup>th</sup> ed (Wiley-Blackwell, 2011)

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Building Materials	General		Doran <i>Construction Materials Reference Book</i> (Butterworths, 1992) [2 <sup>nd</sup> ed due 2011], Rushton <i>Investigating hazardous and deleterious building materials</i> (RICS, 2006)
	Concrete		Concrete Society, Concrete Centre
	Brick		BDA, IMS
	Metals		SCI, BCSA, Aluminium Federation, CTI (formerly BCIRA)
	Timber		TRADA
	Stone		Stone Federation
	Cement & mortars		Concrete Society, Concrete Centre
	Sustainable construction	Building for a sustainable future: construction without depletion [2 <sup>nd</sup> ed in preparation]	CIRIA, Bokalders <i>The Whole building handbook: how to design healthy, efficient, and sustainable buildings</i> (Earthscan, 2010), Halliday <i>Sustainable construction</i> (Butterworth-Heinemann, 2008), Addis <i>Building with reclaimed components and materials: a design handbook for reuse and recycling</i> (Earthscan, 2006)
	Building regulations		CLG, Tricker <i>Building regulations in brief</i> . 6 <sup>th</sup> ed (Butterworth-Heinemann, 2011), Billington et al <i>The Building regulations explained and illustrated</i> 13 <sup>th</sup> ed (Blackwell, 2007)
Building construction		BRE, Chudley <i>Building construction handbook</i> 8 <sup>th</sup> ed (Butterworth-Heinemann, 2010), Mitchells series, Historical: McKays <i>Building construction [various editions]</i> , Barry <i>The construction of buildings [various editions]</i> , Rivingtons <i>Building construction [various editions]</i>	

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Category	Sub-category	Existing Institution of Structural Engineers publication(s) (Italics denotes in preparation or planned)	Examples of other sources of guidance
	Building conservation		English Heritage, Historic Scotland, Beckmann & Bowles <i>Structural aspects of building conservation</i> 2 <sup>nd</sup> ed (Elsevier, 2004), Forsyth ed <i>Historic building conservation series</i> (Blackwell)
	Refurbishment		CIRIA, Doran <i>Refurbishment and repair in construction</i> (Whittles, 2009), Gorse <i>Refurbishment and upgrading of buildings</i> . 2nd ed (Spon, 2009)
	Estimating		CIOB <i>Code of estimating practice</i> . 7 <sup>th</sup> ed (Wiley-Blackwell, 2009), <i>Spon's architects and builder's price book</i>
	Appraisal/survey	Appraisal of existing structures. 3 <sup>rd</sup> ed	SCI <i>Appraisal of existing iron &amp; steel structures</i> (SCI P 138, 1995), Swailes et al <i>Scottish iron structures</i> (Historic Scotland, 2006), BCSA <i>Historical Structural Steelwork Handbook</i> (BCSA, 1984), Sutherland et al <i>Historic concrete: background to appraisal</i> (TTL, 2001), Ashurst <i>Practical building conservation</i> (Gower, 1988) [ <i>English Heritage Technical Handbook in 5 vols</i> ], Macdonald ed <i>Concrete: building pathology</i> (Blackwell, 2003), Bates <i>Historical structural steelwork handbook</i> (BCSA, 1984)
		Guide to surveys and inspections of buildings and associated structures. 2 <sup>nd</sup> ed	RICS
		Structural effects of alkali-silica reaction: technical guidance on appraisal of existing structures	Concrete Society ASR. TR 30. 3 <sup>rd</sup> ed (Concrete Society, 1999), BRE Digest 330 (2004), Blight <i>Alkali-aggregate reaction and structural damage to concrete: engineering assessment, repair and management</i> (CRC Press, 2011)
		Assessment of reinforced and prestressed concrete bridges	HA, Surrey University Bridge management conferences
		Guide to inspection of underwater structures	
		The structural engineers response to explosion damage	Cormie, Mays & Smith <i>Blast effects on buildings</i> 2 <sup>nd</sup> ed (Telford, 2009), Bangash <i>Impact and explosion</i> (BSP, 1993) etc

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		Safety in tall buildings and other buildings of large occupancy (out of print)	Strelitz <i>Tall buildings: a strategic design guide</i> (RIBA, 2005)
	Repair		Doran <i>Refurbishment and repair in construction</i> (Whittles, 2009), Holland <i>Appraisal and repair of reinforced concrete</i> (TTL, 1997) Ross <i>Appraisal and repair of timber structures</i> (TTL, 2002), Grantham <i>Concrete repair: a practical guide</i> (Taylor & Francis, 2011)
	Strengthening		HA, Concrete Society TR 55 <i>Design guidance for strengthening concrete structures using fibre composite materials</i> . 2 <sup>nd</sup> ed (Concrete Society, 2004), Oehlers <i>Design of FRP and steel plated RC structures: retrofitting beams and slabs for strength, stiffness and ductility</i> (Elsevier, 2004), Balaguru <i>FRP composites for reinforced and prestressed concrete structures: a guide to fundamentals and design for repair and retrofit</i> (Taylor & Francis, 2009), Somerville <i>Management of deteriorating concrete structures</i> (Taylor & Francis, 2008)
	Durability		Yu & Bull <i>Durability of materials and structures in building and civil engineering</i> (Whittles, 2006)
	Corrosion	Cathodic protection of concrete structures: the way ahead	Ahmad <i>Principles of corrosion engineering and corrosion control</i> (Butterworth-Heinemann, 2006), Richardson et al <i>Shreir's corrosion</i> (Elsevier, 2009)
Fire Engineering		Introduction to the fire safety engineering of structures Guide to the advanced fire safety engineering of structures	CIBSE, BRE, Purkiss <i>Fire safety engineering: design of structures</i> 2 <sup>nd</sup> ed (Butterworth-Heinemann, 2007)
Architecture			RIBA

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	Aesthetics		Kulasuriya The Aesthetics of proportion in structural form. <i>The Structural Engineer</i> , 80(14), 16 Jul 2002, Royal Fine Art Commission. <i>What makes a good building? an inquiry</i> . London: Royal Fine Art Commission, 1994
Town planning			RTPI, CABE
Biography			Doran <i>Eminent engineers</i> (Whittles, 1999), Skempton et al <i>A biographical dictionary of engineers in Great Britain and Ireland: volume 1: 1500-1830</i> (Telford, 2002); Cross-Rudkin and Chrimes <i>volume 2: 1830-1890</i> (Telford, 2008); <i>volume 3: 1890-1920 in preparation</i>

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