



CV for :

Dr Stuart Matthews

B Eng, PhD, C Eng, CSci, CWEM, FICE, FIStructE, MCIWEM

Job Title

Chief Engineer, Construction, BRE Ltd

Profession background

Principally a Civil, Structural and Environmental Engineer

Qualifications

- BEng, Civil and Structural Engineering, University of Sheffield, UK.
- PhD, Dynamics of Cable Stayed Bridges, University of Sheffield, UK.

Affiliations

- Chartered Engineer; Chartered Scientist; Chartered Water and Environmental Manager
- Fellow of the Institution of Civil Engineers; Member 1979, Fellow 2002
- Fellow of the Institution of Structural Engineers; Member 1984, Fellow 2002
- Member of Chartered Institution of Water and Environmental Management, 1983
- Member of Concrete Society, 1988.
- Liveryman of the Worshipful Company of Paviers and Freeman of the City of London, 2010

Awards

Institution of Structural Engineers Clancy Prize 2013: Medal and Certificate.

Expertise

- Extensive experience in the fields of civil engineering and building, including design and construction of concrete infrastructure, service life and durability issues, works for water treatment and distribution, water retaining structures (ponds, reservoirs and basements – some for the storage of nuclear materials), inspection and assessment of existing infrastructures and buildings – particularly large panel system (LPS) built high-rise dwelling blocks, deterioration of reinforced concrete structures, including carparks, bridges etc and building facades, plus methods for their repair and refurbishment, as well as addressing the range of general problems that arise during concrete construction works.
- Extensive expert witness and related fee-earning work and investigation work on a range of topics including structural and building fabric matters, structural deterioration, fire damage evaluation, service life prediction, innovations in concrete, in-service performance issues for concrete, as well as structural collapse and fatal accident investigations.
- Involved in a wide range of national and European research projects including full scale structural tests, concrete remediation works, development of analytical methods and assessment guidance.
- Preparation of published guidance on many of the above topics, including codes, for the design and assessment of concrete structures, as well as journal and conference papers, BRE technical reports, Digests and Information Papers, contributions to numerous *fib* Bulletins and the *fib* Model Code 2010, along with a number of technical books on various structural and concrete related topics.
- Wide-ranging knowledge of the use of non-destructive testing investigative techniques, especially the use of subsurface radar and full-scale structural testing.
- Experience of structural dynamics and vibration issues.

Continuing Professional Development for being an Expert Witness (EW) includes events on *building professionals as EW, design liability, writing proofs of evidence & giving expert evidence in public inquiries, construction dispute resolution, forensic engineering practice, Expert Witness Institute annual conferences, best EW practice, hot-tubbing, understanding solicitors post Jackson, terms and conditions for EWs, etc*

Career Profile

- Since 2005: Chief Engineer Construction, BRE
- 2009: Internal secondment to the post of Director Sustainability, BRE Global.
- 1998-2005: Director Centre for Concrete Construction, BRE concerned with the many different facets of concrete as a construction material and its structural use in many different circumstances.
- 1997-98: Head Centre for Repair and Refurbishment, BRE focussing on building and structure works.
- 1992-97: Head of Structural Appraisal and Monitoring, BRE involved in research and consultancy in the fields of in-service behaviour, monitoring and appraisal of existing structures.
- Since 1992: Building Research Establishment / BRE Ltd: see details above.
- 1989-92: Travers Morgan - Managing Director of the Materials and Building Maintenance Division.
- 1984-89: Structure Testing Services - Director with responsibilities for operational and financial management, technical matters in the fields of structural and vibration engineering.
- 1976-84: Senior Engineer, Yorkshire Water: design/construction of water treatment/distribution works

Expert Witness / Public Inquiry / Technical Advisor Experience includes

- **Investigating a supermarket roof collapse:** Investigation of the multi-stage collapse of some 2000m² of roof causing fatal injury to over 50 people; the technical work was in support of legal considerations.
- **Concrete problems, Crossrail project, London:** Investigation of concrete construction problems for a large station box structure, the work was undertaken in support of contract considerations.
- **International Commercial Court of Arbitration:** Acting as the Arbitral Tribunal's Independent Expert with respect to structural and concrete matters and involved in the assessment of certain allegations of defective and or omitted works relating to the design and construction of a multi-functional retail and office complex in **Moscow** with an overall floor area of some 109,000m².
- **General Market and associated buildings and substructures, Smithfield, London:** Engineering advice on options for the management of the existing buildings (circa 1880's) and the associated supporting substructures (railway deck slabs) involving examination of a range of scenarios.
- **Planning Inquiry for the redevelopment of the General Market, Smithfield, London:** Acted as City of London's engineering expert for all matters concerned with the existing historical buildings (1880's) and the decks they are built on over an operational railway. 1500 pages of evidence prepared.
- **Fatal accident inquiry, London:** Investigation of the collapse of stonework from a building causing fatal injury to a person below; the technical work was undertaken in support of legal considerations.
- **Insurance dispute:** Investigation of structural movement and damage to a row of 8No Victorian dwelling blocks up to 5 storeys high, which was the subject of a sizeable disputed insurance claim.
- **1930's dwelling blocks, London W2:** Advice in a dispute about the recovery of costs for repairs to the properties in a large complex of prestigious flats experiencing corrosion of structural steelwork frame.
- **Bank building, Hong Kong:** Expert technical advice upon matters concerning damage to stone cladding upon a 24 storey reinforced concrete office building. The work involved developing a sophisticated analytical model of movements causing damage and the timing of cladding installation.
- **Nuclear storage buildings, Harwell:** Adjudication upon technical matters raised in an Engineering Substantiation Report on HAC roof units in buildings storing nuclear materials.
- **Edwardian dwelling blocks, London W2:** Expert opinion given in dispute about repair works costs on mechanisms of deterioration, corrosion of steelwork issues and repair of the building fabric.
- **Retaining wall failure, Leeds:** Desk study and provision of a technical opinion on the issue of potential responsibilities and liabilities in respect of the failure of a Victorian drystone retaining wall.

Committees – participation in numerous national (UK) an international technical committees:

Publications, Codes of Practice, Guidelines, Standards & Keynote Lectures - includes publishing guidance on many technical topics, codes for the design and assessment of concrete structures, journal and conference papers, BRE Technical Reports, Digests and Information Papers, contributions to numerous *fib* Bulletins and the *fib* Model Code 2010, as well as a number of technical books on various structural and concrete related topics. Recent major works published through IHS-BRE Press include the *Design of durable concrete structures* (FB70, 2014), and the *Handbook for the assessment of large panel system dwelling blocks for accidental loading* (BRE Report BR 511, 2012).