



BUILDING CONSERVATION MASTERCLASSES STRUCTURAL REPAIR OF HISTORIC BUILDINGS

BC3D226 3-6 APRIL 2017 (3 day course)

This course is of special value to those who wish to gain a new perspective in applying engineering principles to the conservation of historic structures. The course will be of value to architects, conservation officers, masons, carpenters and others involved in conservation, as well as to engineers.

The five basic maxims of building conservation are 'conserve as found' and 'minimum intervention', 'like for like repairs', 'repairs should be reversible' and 'repairs should be sympathetic'. These philosophies must be tempered with responsibility for the safety and structural integrity of historic buildings, and for the safety of the users of those buildings. This course will attempt to draw together these two, sometimes seemingly opposing, views of conservation and safety.

Various permanent repair methods which might be applied to historic buildings are discussed and there will be debate about the merits of hidden repairs as against more obvious repairs. Not all historic buildings are as hazardous as they sometimes seem and we will discuss alternatives to the carrying out of repairs to apparently unstable structures.

The programme covers inspecting and repair works ranging from pointing and grouting to tying and underpinning. Use will be made of case studies to illustrate various points, discussion from the floor will be encouraged and there will be opportunity for

discussion in small groups to consider specific problems.

The informal evening sessions provide an opportunity for participants to present a structural problem for group discussion. Please come prepared with a case you would like to present; pictures/slides and/or drawings would be useful.

Ian Hume, former Chief Structural Engineer at English Heritage and an Engineer Accredited in Conservation, is a visiting lecturer on a number of university post-graduate conservation courses and runs seminars on the structural aspects of conservation. He has published a number of papers and articles

Alan Conisbee is a Director of Conisbee, Consulting Civil and Structural Engineers

Terry Girdler is Head of Heritage Engineering at Conisbee, Consulting Civil and Structural Engineers and an Engineer Accredited in Conservation

Recommended Reading:

Beckmann, Poul and Bowles, Robert, *Structural Aspects of Building Conservation*, Elsevier.

Robson, Patrick, *Structural Repair of Traditional Buildings*, Donhead Publishing.

A full reading list is at the foot of the course details.

OUTLINE PROGRAMME

Day 1	Monday
16.00-18.00	Register at Reception Desk
19.00	Dinner
Evening	Introduction to the course; who we are and what we do; philosophy of conservation Discussion point: what is conservation?
Day 2	Tuesday
Morning	The basics of structural behaviour; the inspection of historic buildings, understanding the structure, what does its history say to you? Discussion point: the old library; monitoring equipment and methods Visit: Weald and Downland Open Air Museum: www.wealddown.co.uk Looking at timber repairs

Afternoon	Bricks, lime mortar and brickwork repairs; ties and anchors; pointing and grouting Case studies of brickwork repairs; a 'do nothing' option: a way of avoiding intervention; load testing; beginning to do something; scaffolding and temporary works; Discussion points: thinking the process through
Evening	Discussion of students' problem cases
Day 3	Wednesday
Morning	The 'don't do very much' option; structural intervention to historic buildings – French drains, underpinning, timber beam strengthening A look at some typical repairs for timber and metal Visit: Amberley Museum and Heritage Centre: www.amberleymuseum.co.uk Problem buildings – what advice would you give
Afternoon	Reporting back from the Amberley Museum; floor loadings; Codes of Practice; sustainability; the structural aspects of service installations; costs; case studies including some modern movement buildings
Evening	Discussion of students' problem cases.
Day 4	Thursday
Morning	A miscellany of thoughts: cantilever stairs, traffic vibrations; jacking structures; façade retention Ruquette Minor intervention case studies
Afternoon	Major intervention case studies; Discussion point: the reuse of an ancient site; the value of accreditation; drawing the course to a conclusion
15.30	Issue of certificates and depart.

Non-residential course fee £594 (includes £9 cover charge for visit)

Fully inclusive residential course fee:

Shared bathroom facilities £765

Standard room with private bathroom facilities £825

Superior room with private bathroom facilities £885

HOW TO BOOK

Please complete one booking form, or copy of form, per person per course and enclose a deposit for each course booked. On receipt of your booking, we will send all the further details you will need for your visit, including the course details and your final payment slip. Travel instructions will be sent to all students.

For further information about the course, please contact the Course Organiser: +44 (0)1243 818219 or

cpd@westdean.org.uk

For further information about booking, please telephone the Bookings Office: +44 (0)1243 818300.

Website: www.westdean.org.uk

Recommended Reading:

An overview in three volumes.

Volume 1 – Materials and skills for Historic Building conservation

Volume 2 – Structures and construction in Historic Building Conservation

Volume 3 – Understanding Historic Building Conservation

All published by Blackwell Publishing at £45 per volume

Structural surveys and appraisals.

Non-destructive investigation of standing structures

Published by the Technical, Conservation, Research and Education Division of Historic Scotland

Guide to structural survey.

Clive Richardson, an Architects Journal reprint

Appraisal of existing structures.

published by the Institution of Structural Engineers

Surveys and inspections of buildings and similar structures.

published by the Institution of Structural Engineers

Structural appraisal of traditional buildings.

Patrick Robson, published by Gower

The stone skeleton.

Jacques Heyman, published by The Cambridge University Press

Arches, Vaults and Buttresses.

Jacques Heyman, published by Variorum

Recognising rot and insect damage in buildings.

published by the Building Research Establishment

Timber Decay in Buildings.

Brian Ridout. Published by Spon

Surveyors check-list for rehabilitation of traditional housing.

published by the Building Research Establishment

Site safety.

CIRIA special publication 1990.

Appraisal of existing iron and steel structures.

Michael Bussell.

Appraisal and repair of building structures.

Holland, Montgomery-Smith and Moore.

Appraisal and repair of masonry.

Parkinson, Shaw and Knowles.

Surveying historic buildings.

David Watt and Peter Swallow.

Survey and Repair of Traditional Buildings.

Richard Oxley. Published by Donhead

The technology of building defects.

John Hinks and Geoff Cook. Published by E & FN Spon

Defects and deformations in buildings

Barry A Richardson. Published by E & FN Spon

Has your house got cracks?

T J Freeman, R M C Driscoll & G S Littlejohn. Published by ICE & BRE

Structural monitoring.

Monitoring building structures.

J F A Moore, published by Blackie

Repair techniques.

Emergency repairs for historic buildings.

Eleanor Michell, published by English Heritage

Structural renovation of traditional buildings.

CIRIA Report 111

Structural repair of traditional buildings

Patrick Robson published by Donhead

Repair of ancient buildings.

A R Powys, published by the SPAB

Conservation of engineering structures.

published by the Institution of Civil Engineers

Rehabilitation and re-use of old buildings.

D Highfield, published by SPON

Practical building conservation, volumes 1-5.

John and Nicola Ashurst, published by English Heritage and Gower Press

The repair of historic buildings.

Christopher Brereton, published by English Heritage

Craft techniques for traditional buildings.

Adela Wright, published by Batsford

Conservation of Timber Buildings.

F W B Charles. Published by Donhead

Structural aspects of building conservation

Poul Beckmann and Robert Bowles, published by McGraw Hill

Old waterfront walls, management, maintenance and rehabilitation

R N Bray and P F B Tatham, published by Spon

The maintenance of brick and stone masonry structures

Edited by A M Sowden, published by Spon

The repair of historic timber structures

David Yeomans published by Thomas Telford

Appraisal and repair of timber structures

Peter Ross. Published by Thomas Telford

Building Research Establishment (BRE) publish a great deal of useful information on building problems and building repair

Conserving Buildings, a guide to techniques and materials

Martin E Weaver, published by Wiley

Preserving Post-War Heritage.

English Heritage. Published by Donhead

Conservation of Ruins.

John Ashurst. Published by Butterworth-Heinemann

Building maintenance and preservation

Edward Mills, published by The Architectural Press.

Building conservation contracts and grant aid.

Ken Davey, published by E & FN Spon

There are also many useful articles in "Context", the quarterly journal of the Institute of Historic Building Conservation. Many of these can be found on the IHBC web site www.ihbc.org.uk

The Journal of Architectural Conservation is a useful source of information.