

ACBEE

Accelerating Change in Built Environment Education

First Annual Report **2004**



Contents

Foreword	1
Executive summary	2
Accelerating Change in Built Environment Education	3
Introduction	
2004 – A year of progress	3
The ACBEE Prospectus	3
University/industry engagement	4
Successful case studies	5
Identifying the benefits	5
Considering the regions	5
Towards the future	5
Appendix One	6
Case studies	
Appendix Two	7
Steering Groups	
Appendix Three	8
Survey on University/industry engagement	
Appendix Four	9
Participants at workshops and debates	

Cover photo:

Students from Imperial College of Science and Technology help to construct a 1:20 scale replica of the Barcelona Radio Mast as part of the latest John Doyle Group 'Constructionarium', exercise held last month (May 2004) at CITB ConstructionSkills National Construction College at Bircham Newton, Norfolk. The Constructionarium was one of the first university-industry partnership case studies to be submitted to ACBEE (ref: Appendix 1).

Foreword

For many years, in several different industry sector contexts, I have felt the lack of genuine communication and understanding between industry, its professional institutions and the academics who teach and research the relevant disciplines. Yet every industry relies crucially for its competitiveness on innovation and the quality of its people. The linkages between stakeholder groups are absolutely fundamental to an industry's success, and to its attractiveness in the jobs market.

The need is greater when, as in construction today, the industry is going through a process of major change in culture and working practices as it implements the ideas in the Latham and Egan reports and develops the concepts of partnership and collaborative working.

It has therefore been a great personal pleasure to watch the development of ACBEE over the past year, from a gleam in the eye to an established programme of case studies with genuine buy in from stakeholders. The concept of measurement has also received general assent and this is extremely encouraging for the future.

Our task for the coming months, with the support of the Strategic Forum and that of the training community, is to build on these foundations and produce an intellectually rigorous set of ideas that will deepen understanding and improve the quality of dialogue which already exists. I and my colleagues in ACBEE look forward to the challenge.



John Hobson, Chairman of ACBEE,
former Director of the DTI Construction Directorate

June 2004



ACBEE

Securing improved industry performance by changing built environment education

Executive overview

The ACBEE (Accelerating Change in Built Environment Education) programme has been in existence for just over a year and is already making a valuable contribution to higher education in the built environment.

In 2003:

ACBEE set out to:

- Enter into a dialogue with universities and industry and produce a prospectus calling for case studies of high quality
- Identify and promote 20 successful case studies that align with key industry themes and promote an understanding of interdisciplinary team-work
- Take the first steps towards identifying the benefits that such courses can bring in improving industry performance
- Bring about rapid and measurable changes and improvements in built environment higher education
- Provide a framework from which a similar progress can be made towards improving built environment further education

ACBEE achieved:

- After a successful period of university/industry engagement the ACBEE prospectus¹ was published in October 2003
- In the first year ACBEE has identified and published some 21 case studies¹ of high quality that meet the criteria expected
- A Spring 2004 workshop has established the foundations and the issue of measurement is a priority for the forthcoming year
- Awareness of the need and support for ACBEE has been growing apace at all levels of the educational and industry sectors
- A pilot programme in the South East is to examine the regional perspectives of ACBEE and its implications for engaging with regional HE and FE groups

The ACBEE programme is endorsed by the Strategic Forum for Construction.

¹ The prospectus and case studies can be found at: www.cebe.ltsn.ac.uk/learning/acbee/index

Accelerating Change in Built Environment Education

Introduction

ACBEE (Accelerating Change in Built Environment Education) was established early in 2003 as a means of focusing on the need for built environment higher education and the industry it serves to attract, recruit and retain sufficient graduates now and for the future.

ACBEE developed from the CITB 'Making Connections' initiative, with the aim of encouraging the built environment industry, universities and professional bodies to work together to improve dialogue and provide more relevant training and education. This was in response to the major culture and process changes confronting the industry and its academic colleagues in implementing the ideas put forward by the Latham and Egan reports on a more collaborative and partnering industry.

ACBEE promotes the need for courses and teaching programmes that align with key industry themes and which demonstrate active university, industry or institutional partnerships. The first results of such aims are now being promoted as a series of case studies of high quality (Appendix One) that:

- Promote greater awareness of the need for rapid changes in built environment education
- Provide a foundation for determining the value and benefits that such approaches can deliver in support of improved industry performance
- Will help to accelerate the move towards improved built environment higher education for the future

ACBEE is a clear and focused programme that results from the collective views of many leading educational, industry and institutional observers, whose wider issues and opinions will continue to be taken into account.

ACBEE is funded by CITB ConstructionSkills and forms part of the accelerating change agenda endorsed by the Strategic Forum. CEBE (Centre for Education in the Built Environment), based at Salford University, provides the day-to-day secretariat and overall administrative support for ACBEE.

From the outset ACBEE has been guided by a pan-industry steering group including representatives from CITB ConstructionSkills¹, Construction Industry Council, Constructing Excellence, CEBE and LTSN Engineering, as well as academic and industry specialists, professional institutions and trade associations (see ACBEE Steering Groups – Appendix Two).

¹ CITB ConstructionSkills, CITB (NI) and the Construction Industry Council (CIC) work in partnership as the Sector Skills Council for Construction. CEBE and LTSN Engineering are part of LTSN, the universities Learning and Teaching Support Network which is now part of the UK-wide Higher Education Academy.

A year of progress

Proactive engagement – 2003/2004

The steering group have, since early 2003, guided the ACBEE programme from a good idea that built on the CITB's 'Making Connections' activity to a project that is making a valuable contribution to higher education in the built environment, with dialogue between universities and industry being a key consideration.

In the past year, ACBEE has published its Prospectus, organised two workshops and a debate (for participants, see Appendix Four), identified 21 case studies of high quality (Appendix One), promoted its work to a wide circle of interested parties, started to identify potential measures and benefits, and implemented activity in SE England that will investigate regional engagement and the implications of built environment change in Further Education.

The ACBEE Prospectus

The ACBEE Prospectus was prepared and issued in October 2003 as a result of the understanding and conclusions determined at the Summer 2003 workshop (refer to 'University/industry engagement', next section). The primary focus of the Prospectus was to encourage the submission of case studies of high quality, and to this end it set out a number of criteria that might typify a case study of high quality. The criteria sought were:

- An 'active' partnership/collaboration of industry, HE and/or institutional partners
- Objectives and potential benefits for each partner that are clearly defined before commencement and which can be readily measured
- Inclusion of a clear industry subject or theme with wide built environment appeal
- The teaching of interdisciplinary team-work understanding
- Approaches and ideas that are replicable and transferable and which include well-structured modular learning elements
- Relevance and value to students and appropriateness to real industry activities
- Inclusion of recognised best practice approaches
- Commitment to the case study being tracked and measured over time

The ACBEE Prospectus can be downloaded from our website at: www.cebe.ltsn.ac.uk/learning/acbee/index, from where those interested in submitting a case study can download a template – or call ACBEE on 0161 295 5944.

University/industry engagement

Workshop – June 2003

ACBEE organised its first workshop at the Building Centre in London to examine the issues surrounding the measurement and evaluation of industry/university engagement. This showcased several potential case studies of good industry/education engagement. Delegates were asked to consider two key issues:

- What are the characteristics of a case study of excellence?
- How could the impact of a case study be measured?

This resulted in a number of important characteristics being identified which were used as the foundation for the ACBEE Prospectus, and its call for further case studies of high quality. Delegates concluded that the issue of measurement would become clearer once the initial case studies had been identified and discussed further.

Debate – October 2003

The debate at the Institute of Civil Engineers, sponsored by Building magazine, was chaired by David Foster (Sky News) with the main speakers – ACBEE's John Hobson and CIRIA Chief Executive Tim Broyd – examining the case for and against change. The audience discussed the issues of recruitment in built environment disciplines and how industry/university engagement could help to improve the quality and quantity of new people.

The debate covered the problems of attracting sufficient high quality school-leavers and the fact that the industry needs bright people to perform at its best in an increasingly competitive global market. It also questioned why some universities were able to attract sufficient quality applicants and disciplines whilst others were not, and that more 'real-world' focus was needed.

Workshop – February 2004

University and industry partners of the early (12) case studies attended a workshop at Loughborough University to discuss the issues of measurement.

It was recognised that industry engages with universities in order to help provide a real-world context for learning, so that students are able to apply their knowledge in an industrial context. The value of this could be measured by:

- Tracking the development of alumni students
- Feedback from employers and graduates
- Tutor secondments to industry and industry secondments to HE

Mutual engagement provides an attractive industry in which quality graduates want to work and it develops competent people who are able to apply and expand their knowledge through lifelong learning.

The key challenges are to ensure a sustainable student intake, remove traditional boundaries between disciplines and improve integration between higher education and industry.

Measurement could be applied at macro (university subject) level, similar to the current research assessment exercise being undertaken by HEFCE, as well as on a micro (individual case study) level. Although the approach to the two is very different, there is a need to develop both.

It was concluded that there are a number of barriers and constraints to good university/industry engagement including the fact that:

- HEFCE funding does not currently reward engagement activities
- Universities have become skewed in outlook by the RAE (Research Assessment Exercise), with lower recognition for tutors who have higher levels of professional experience and competence
- Industry needs to show more interest in the RAE results and work with universities to demonstrate the value of research to teaching
- Universities need to recruit more teachers with industrial experience and give them greater rewards

Successful case studies

The ACBEE programme has, within the first year, resulted in the submission of a number of case studies of high quality. We set out to publish 20 case studies which demonstrate successful and quality interaction between industry and HE partners, and have secured slightly more than this.

We initially looked at the contribution that each case study made to industry/higher education engagement. Structured interviews were also conducted with course providers, industry partners and students to highlight areas where more detailed exploration might be required. The following themes were explored:

- Student attractiveness/industry relevance
- What will students learn/key industry themes
- What measures could be tracked over time
- Success of the course/module and the difficulties encountered
- Working together to improve dialogue for relevant training and education
- The five most important issues needed to promote innovative engagement

The first case studies – some 21 submitted examples – are now being widely disseminated. They can also be accessed and may be downloaded from the ACBEE website – www.cebe.ltsn.ac.uk/learning/acbee/index. Those interested in submitting a case study can download a template from the website.

Further details of these case studies can be found in Appendix One.

Identifying the benefits

Following the Loughborough workshop a preliminary study was conducted amongst built environment HEIs. It looked at the possible need for macro-level measurements to demonstrate university/industry engagement. Respondents surveyed were overwhelmingly in favour. Results are given in Appendix Three.

This has established the foundations for further study, and we propose to examine the issue of macro measurement as a priority in the coming year. Most of the case study promoters are also now planning to develop methods of measuring the success of their courses in order to demonstrate the delivery of improved industry performance.

Considering the regions

For accelerated change to succeed, we have to engage the interests of all sectors of the built environment, especially at a regional and local level where industry and education partnerships are also essential. To study this an ACBEE sub-group was commenced in the South East earlier this year. It is now examining the regional and smaller business perspectives of ACBEE to determine how they might secure widespread regional buy-in. Successful engagement at a local level could also point the way to better industry/university dialogue for further education. The ACBEE South East group's first regional workshop is being held this month (June 2004).

Towards the future

ACBEE has set out to bring about rapid and measurable changes and improvements in built environment higher education. Its efforts are being increasingly noticed through a growing number of case studies of high quality and greater awareness across academia and the industry.

The next phase of the ACBEE programme intends to:

- Extend the number of case studies available to study by identifying industry-relevant themes and inviting further submissions
- Hold a major conference on industry/education engagement, Spring 2005
- Research and establish a proven methodology for measuring the performance of industry/education engagement
- Conduct a survey on the type of information that industry needs about engagement with universities and to also examine what is available
- Explore and report on the value of regional networking, building on the work in the South East region
- Study, as a result of the South East pilot, the implications for university/industry engagement to support regional higher and further education
- Publish a summary report of the findings in this phase and the application of measurement to early case studies

Appendix One

Published case studies

The Project Team Leadership Programme

Be Collaborating for the Built Environment/
CITB ConstructionSkills, Wates Foundation

A cross-discipline, 18 month course for high-achieving young managers who are already in the construction industry. It concentrated on developing the construction leaders of tomorrow and principles of collaborative working across the industry.

Interdisciplinary Design for the Built Environment (IDBE)

Cambridge University/ARUP

An interdisciplinary programme that accepts engineers, architects, constructors, surveyors, planners, clients and other disciplines. It encourages participants to look beyond their existing specialisms. Unlike many Masters courses it is aimed at fully qualified and employed young professionals.

Occupational Standards in the Built Environment

Construction Industry Council (CIC)/Professional Bodies

The Progression Project has standardised the use of Occupational Standards to provide a mechanism for progression within the industry between academic, vocational and professional qualifying structures. These provide a common language to overcome barriers to individual progression and harmonize development processes.

The Educational Supply Chain – Building Awareness

Costain/ICE, CITB ConstructionSkills, Anders Elite,
Hill McGlynn, Fairfield-Mabey, Bachy Soletanche,
Aggregare Industries, Travis Perkins

This programme aims to address the shrinking workforce problem, raising awareness of the construction industry, by engaging with education and the supply chain. It brings together all industry stakeholders – professional institutions, schools, training boards, the business supply chain, and Costain's own staff – with a common purpose.

Health and Safety Management

Edinburgh University/AWG Construction Services

This course brings together all Civil Engineering Health & Safety teaching into one module. It has a distinct industry bias to ensure it serves as an introduction to the concepts that need to be managed upon graduation. It will also draw upon active research that is taking place within the School of Engineering & Electronics.

The European Challenge

Hanzehoghschool, Groningen (Netherlands)

International HE partnership with Kingston University and other European real estate schools. Innovative use of Blackboard Virtual Learning Environment as a communications tool across seven European Countries. This high quality multinational corporate real estate simulation is based on the relocation of a USA based corporation to a new Headquarters building in Europe.

Personal Learning in the Built Environment

Heriot Watt University/CIOB, RICS, Graduate Employers

A Personal Learning Plan (PLP) has been developed for all undergraduates studying in the Construction Management and Surveying Programme (CMS). The PLP requires students to self assess and evidence their skills and plan ways of developing and improving them. The appeal of the PLP is that it allows students to relate their academic work to working practice and vice-versa through the development of subject knowledge and transferable skills.

“Constructionarium”

Imperial College/John Doyle Group

Students on the course work on engineering design and use their own initiative on a real, but scaled-down site. The emphasis is on creativity, design, teamworking and communication skills, as well as engineering judgement and problem solving.

Inter-professional Studies

Leeds Metropolitan University/Client and Contractors

An inter-disciplinary module where students work in teams on 'real' projects to experience the approach and work of students from other disciplines. Development proposals consider the design, planning and funding of a project which are presented to a panel consisting of a real client and contractors.

Centre for Innovative Construction Engineering (CICE)

Loughborough University/Industrial Sponsors

CICE was established to advance construction industry research and innovation training. During this 4-year multi-discipline course participants are each sponsored and funded by a construction industry company with whom they work to help deliver new ways of working, new applications and marketable ideas.

Commercial Management & Quantity Surveying

Loughborough University/Industrial Sponsors

A programme developed jointly by Loughborough and fifteen major contractors to meet the needs of tomorrow's commercial managers. These major companies have shown their commitment by sponsoring both the programme and the course students.

Real Estate Management

Oxford Brookes University/Industrial Sponsors

The course was developed to attract high calibre non-cognate graduates into chartered surveying and satisfy the demands of the profession for high calibre masters graduates in real estate management. The programme was set up in close consultation with five leading global real estate surveying practices and RICS.

Women into the Built Environment (WITBE)

Sheffield Hallam University/Learning & Skills Council,
CITB, Connexions

This recognises the need to increase the involvement of women and encourage a higher proportion of them to take up skills training and HE built environment courses. It includes an interdisciplinary technical design service, run by women professionals working with community groups through placement students on 'real' building projects.

Short industrial work placements

Sheffield Hallam University/Ben Bailey Homes/
Sheffield City Council

These HND short industrial work placements give students a 'taste' of work within a range of built environment professions. This placement is an important vehicle for the development of employability, in that students gain 'hands on' experience of the construction industry, which helps them relate theory to practice.

Corporate University Initiative

Styles & Wood Academy/Manchester Business School

The Styles & Wood Academy is open to all staff, key suppliers and business partners. This corporate university initiative provides management and business skills training for construction professionals and includes modules that emphasise interdisciplinary teamwork, goal setting and management in a customer-oriented service-led culture.

Undergraduate Construction Skills Application

University of Abertay Dundee/

National Construction College (Glasgow)

Students on the course have the opportunity to have 'hands-on' practical experience of construction site activities. This involves building a full-scale reinforced concrete structure which underpins the teaching through deepening students' understanding of materials, safety practice and construction techniques.

Reflective Practice for Housing Practitioners (APEX Agreement)

University of Central England/Chartered Institute of Housing (CIH)

APEX is a new programme from the Chartered Institute of Housing and is the practical experience requirement for Corporate Membership of the CIH. Students at UCE can undertake and be assessed in APEX, studying it as a short course or as a 24 credit module if they are completing their studies for the BA Professional Housing Studies.

Foundation Degrees for Construction

University of Central Lancashire/Conlon Construction

The University of Central Lancashire has, for a number of years, worked to develop its foundation degrees (FdSc in Construction) and this is typical of its work with industry and the community to develop new programmes to meet the sector's needs.

Construction Cost Management

University of Reading/Industrial Sponsors

A fast track route to professional qualification and senior management practice in construction cost management. It is designed to attract high quality new entrants to the profession. This innovative programme integrates education in academic theories with professional vocational training in the practice of construction cost management.

BAE Systems Corporate Training Initiative in Project Management

University of Salford/BAE Systems,

Centre for Construction Innovation (CCI)

An online distance learning (MSc) programme in Project Management to meet the needs of project manager designers, consultants, contractors and clients. It provides corporate training in the principles and practices of Rethinking Construction, fits with existing BAE development programmes and provides a postgraduate qualification for project management professionals in the BAE Systems CS & S Division.

Foster Firm Scheme

University of Westminster/RICS Matrics London;

Professional Practices

A common criticism of surveying graduates from full time courses is that they have little awareness of the realities of professional practice. This scheme was set up so full time students spend a minimum period of two weeks in an unpaid placement with a 'foster firm'. The students are exposed to the 'day-to-day' operation of a professional practice and the experience they gain feeds into their final year academic studies.

Appendix Two

ACBEE steering group members

Chairman

- John Hobson, former Director of the DTI Construction Directorate

HEI representation

- Mel Lees, University of Salford, Deputy Director, CEBE (Centre for Education in the Built Environment)
- Prof. George Henderson, Senior Academic Advisor, CEBE
- Sarah Williamson, Academic Co-ordinator, Loughborough University – LTSN Engineering

Industry

- Sheila Hoile, Director of Training Strategy, CITB ConstructionSkills
- Stef Stefanou, Chairman, John Doyle plc
- Sue Hobbs, Constructing Excellence
- Oliver Whitehead, Chairman, Alfred McAlpine plc

Professional and trade bodies

- Mike Ankers, Chief Executive, Construction Products Association
- Paul Hyett, Chairman of RyderHKS and past President, RIBA
- Graham Watts, Chief Executive, Construction Industry Council

Organisation and administration

- Ian Cooper, Eclipse Research Consultants – adviser
- Eddie Coulter, Communications strategy and media
- Pam Lowe, ACBEE Administrator, c/o CEBE, University of Salford
- Aled Williams, ACBEE Project Manager, Academic Co-ordinator, CEBE

ACBEE South East sub-group

- Brian Wood (Chair), Oxford Brookes University/ South East Construction Skills Forum (SECSF)
- Angus Foster (Deputy Chair), CIOB/CIC/SECSF
- Steve Bull, CITB ConstructionSkills Southern Counties and SECSF
- Derek Rees, South East Centre for the Built Environment (SECBE)/Constructing Excellence
- John Hobson, ACBEE (national chairman)
- Eddie Coulter ACBEE (national steering group member)

Appendix Three

Macro-level measurements for university/industry engagement

ACBEE recently conducted a preliminary study on the issue of macro-level measurement for university/industry engagement. The purpose was to build on the issues coming out of the second Workshop held at Loughborough and test them on a wider population. The aim was to identify a series of indicators (proxies) that could be measured and which would give a reasonable indication of the level of engagement within a subject area in a particular university.

The survey was sent to all higher education institutions active in the built environment. On the specific question of whether these indicators were appropriate, the survey returned a very positive result. A summary of the findings on this question is given in fig.1. The survey included additional questions about the methods of measuring these indicators, but limitations on space mean that they are not included in this report and a detailed report on the initial findings of the survey is being published separately.

The survey included the following indicators, all prefaced with 'To measure the way that university/industry engagement':

- satisfies the need of industry to recruit high quality new staff
- is evidenced in the curriculum
- is evidenced in activities other than teaching
- is evidenced in the leadership of the subject area

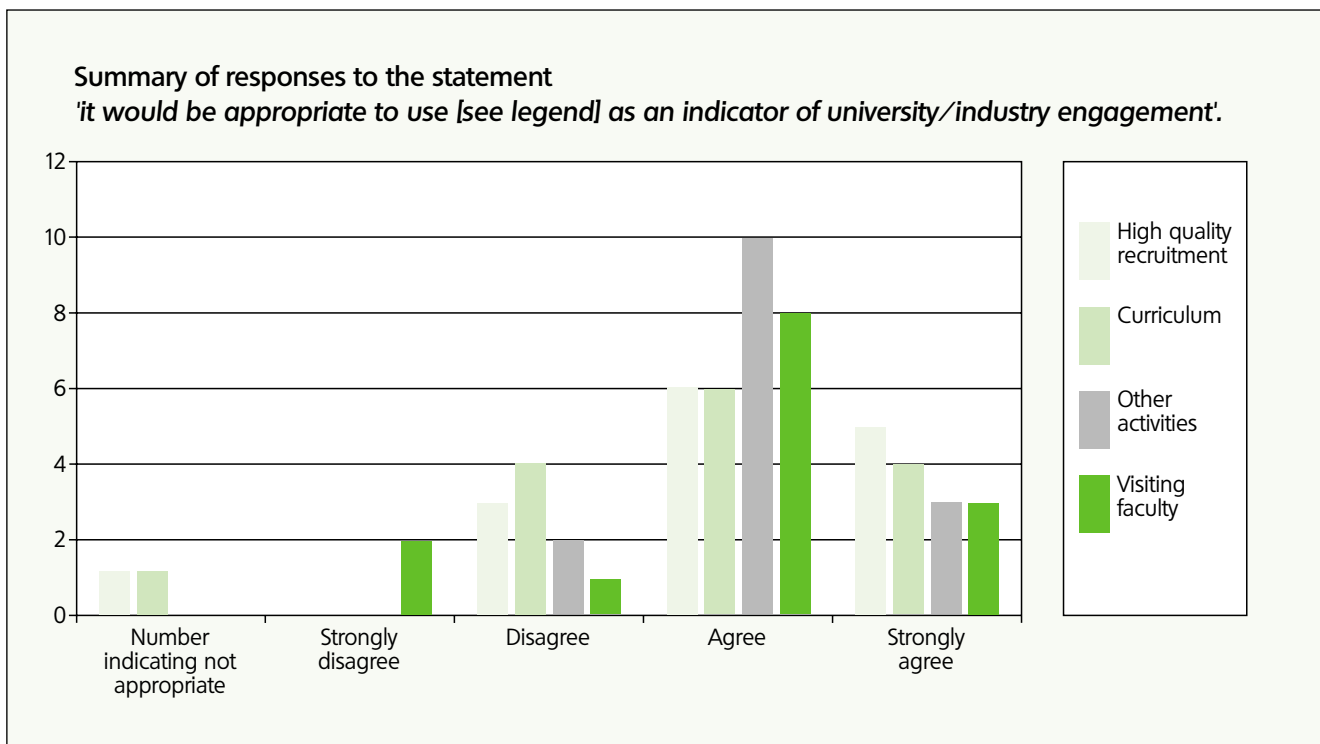


Figure 1 Potential indicators for measuring university/industry engagement

Appendix Four

Industry/university dialogue

Participants in workshops and debate

Organisations represented at the June 2003 workshop at the Building Centre, London

Building Centre Trust
 John Carpenter
 Centre for Education in the Built Environment
 Chartered Institute of Building
 CIRIA
 CITB
 Construction Industry Council
 Construction Products Association
 Department of Trade and Industry
 Eclipse Research Consultants
 Eddie Coulter Associates
 Health and Safety Executive
 HVCA
 John Doyle Group plc
 Leeds Metropolitan University
 Loughborough University
 LTSN Engineering
 Merseyside Construction Initiative
 Rethinking Construction
 Strategic Forum for Construction
 Summit Skills
 University of Cambridge
 University of Salford
 VMGL

Organisations attending the October 2003 debate at the Institution of Civil Engineers

Arup Foundation
 Be - Collaborating for the Built Environment
 Building Magazine
 Buro Happold
 CEBE
 CIBSE
 CIC
 CIOB
 CIRIA
 CITB
 Construction Products Association
 DFES
 Donaldsons
 Eclipse Research Consultants
 Eddie Coulter Associates
 Edward Cullinan Architects
 Imperial College London
 IStructE
 Leeds Metropolitan University
 Loughborough University
 LTSN Engineering
 Northumbria University
 QAA
 RIBA
 RMJM
 University of Central England
 University of Salford
 University of Westminster

Organisations represented at the February 2004 workshop at Loughborough University

ARUP Foundation, AWG Construction Services, Cambridge University, CEBE, CIOB, Constructing Excellence, Construction Industry Council (CIC), Eclipse Consulting, Edinburgh University, ICE, Imperial College London, John Doyle Group, Loughborough University, Manchester Business School, National Construction College (Glasgow), QAA, RICS, Sheffield Hallam University, Styles & Wood, Hanzehogeschool, Groningen, Netherlands, University of Abertay, Dundee, University of Reading, University of Salford.



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