

THE USABLE BUILDINGS TRUST

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Our specific activities

UBT's work falls into four main areas:

- 1 Research and policy
- 2 Development
- 3 Networks and capacity building
- 4 Education and Dissemination

Previous annual reports have outlined the year's work under the four headings above. However, as things we have been promoting move nearer to the mainstream, the classification has become less useful. For example, Soft Landings currently includes activities in all four areas. The Summary of Progress that follows is therefore organised by topic.

Summary of progress in 2010

A NEW PROFESSIONALISM

UBT is encouraging design and building teams to get much more involved in understanding how the buildings they design and adapt actually work, so they can carry forward their insights, work with occupiers, improve building performance, and learn from the feedback. UBT regards this as part of a *new professionalism*, and integral to the responsibility that many institutions now place on their members to understand and promote principles of sustainability. This year we gave several talks on the subject. For 2011, we have been invited to give papers on *the new professionalism* at the annual conference of the Association of Consulting Engineers, and at the international Sustainable Buildings conference in Helsinki. We also hope to develop an outline code of practice that could be endorsed by relevant institutions, several of which have already expressed their interest. We are also discussing opportunities for a special journal issue that would be able to explore the wider aspects, with comments from several countries.

SOFT LANDINGS

Soft Landings supports the *new professionalism* with an approach that any project team can use to organise itself and its work to improve engagement with users and outcomes, and to help make follow-through and feedback routine. After the Soft Landings *Framework* was published in 2009, UBT worked with a group of architects, engineers, contractors and project managers to test it on case studies of school building and refurbishment projects they were already working on. This year we completed three documents arising from this: the technical report, an illustrated summary (edited and produced by BSRIA as a *pro bono* contribution to the project), and an awareness-raising leaflet. We also attend meetings of the UK industry group which is hosted by BSRIA and is

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helping to take the work forward. The word is spreading; for example, Soft Landings was endorsed in the Chief Construction Adviser's *Innovation and Growth Team's* report to government in December.

The schools work revealed the importance of client commitment to Soft Landings. However, even where this existed, the case studies identified major practical difficulties in getting funds allocated to aftercare once a building had been handed over.

In late 2009, Partnerships for Schools (PfS), the agency responsible for England's school building programme, announced that it would support Soft Landings. In early 2010, UBT and members of the Soft Landings for Schools team met PfS to discuss how to go about this in practice. PfS decided to give priority to find ways of embedding the approach in local authorities. Following the General Election, PfS's intended budget for this disappeared, and local authority influence over school procurement was diminished. Nevertheless, UBT has used its own resources to work with a group of local authority representatives who see the benefits of Soft Landings, with a view to developing a common approach. The focus is on a series of one-page case studies that make the case that Soft Landings will help local authorities (and indeed all clients) to get better value for money in an age of austerity; and which they can't afford not to do.

International interest in Soft Landings has been encouraging, particularly in Australasia. In November it was launched at events in six Australian State Capitals and in Auckland, Wellington and Christchurch. Each event started with a video prepared by UBT which described the background to Soft Landings and the need for a new professionalism.

COMMUNICATING AND BENCHMARKING ENERGY AND CARBON PERFORMANCE

We have made progress, but there have been difficulties and frustrations, particularly owing to the large and growing numbers of players involved. Unfortunately there is no clear centre of gravity for all this work, especially in government, and with all sorts of bodies taking an interest: BIS and its Innovation and Growth Team, the British Council for Offices (BCO), the Carbon Trust, the Better Buildings Partnership, DCLG, Defra, DECC, the Energy Saving Trust, the Technology Strategy Board (TSB), the Treasury and the Zero Carbon Hub, to name a few, before even getting to the institutions and voluntary organisations. Unfortunately, a lot of these initiatives have not built on the foundations previously established (e.g. by CIBSE and as part of the Energy Efficiency Best Practice programme in the 1990s), and are instead leading to duplication and inconsistencies.

This year, UBT has been concentrating on the technical underpinnings of energy reporting and benchmarking, working with CIBSE in particular. We are on the CIBSE benchmarking group (and wrote a strategy paper for it), and have participated in its recent review of data collected from over 40,000 Display Energy Certificates (see below). We have also been encouraging revisions to the CIBSE TM 22 Energy Assessment and Reporting Method, where some

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development work is now underway by others, with funding to CIBSE by TSB to assist its Building Performance Evaluation programme. We are also providing input into the Carbon Buzz project, which is also supported by RIBA and CIBSE and recently received substantial new funding from TSB. The project is helping architects and engineers to address the differences between anticipated and actual energy and carbon performance of their projects, and is using some of the principles that UBT has helped to develop.

UBT has been a keen promoter of Display Energy Certificates (DECs) for public and commercial buildings, based on their actual energy use. In 2001, before we became a charity, our research and policy adviser wrote *Flying Blind*, which pointed out that the industry, its clients and government seemed to be uninterested in the discrepancies between estimated and actual energy performance of public and commercial buildings and showing how energy certification might help. In 2005, we wrote *Onto the Radar*, which demonstrated how DECs could get started with a minimum of information, and how statutory and voluntary approaches could co-evolve. This and EU-funded research to which we made an input helped to convince a number of governments of the practicability of the approach, which was adopted for public buildings in England and Wales in 2008. UBT also worked with the British Property Federation, with support from the Carbon Trust, to develop the Landlord's Energy Statement, which made DECs possible in multi-tenanted commercial buildings. This approach is referred to explicitly in DCLG's guidance to DECs.

Unfortunately, DCLG's proposed 2006 consultation on extending DECs to commercial buildings did not happen. This left some of our initiatives stranded. We were therefore delighted when DCLG included the topic as part of its consultation document on zero-carbon non-domestic buildings; and when the results, published in November, revealed widespread support. Market interest in voluntary DECs for commercial buildings has also been growing, but accompanied by fears and misunderstandings about the strategy and benchmarking process. Consequently, we prepared a draft strategy paper with the CIBSE benchmarks group, discussed this at a meeting convened by BCO in November, and gave a presentation to a Workshop held by UKGBC, the UK Green Building Council in December.

Our work on energy reporting and benchmarking also led to an invitation to give the keynote address to an international workshop on the topic in New Delhi in July. Together with our earlier work in Europe, North America and Australia, the experience has allowed us to appreciate better the many common features between commercial buildings in different countries, and the importance of unified technical underpinnings. For 2011, we are therefore considering a new paper, *Taking Stock*, which will look back on some of the history and propose ways in which a number of disparate threads might eventually be made to converge. This may also align with work to be undertaken by the UKGBC, which is planning to set up a task group to take forward the issues identified at the Workshop.

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HOUSING

UBT's faculty and our housing group leader edited a special issue of *Building Research and Information* journal on the evaluation of housing performance, which was published in September 2010. We were surprised and delighted by the positive comments that this publication immediately generated. Historically, the performance in use of domestic buildings has received less attention than non-domestic ones, and UBT itself has only become involved in the area over the past five years, following our collaboration in developing a housing questionnaire with Oxford Brookes University and supporting PhD candidates elsewhere. Since evaluation of domestic and non-domestic buildings has evolved along somewhat different paths, the special issue includes an article by UBT, which has attempted to join some of the threads.

MAKING BUILDING PERFORMANCE EVALUATION ROUTINE

In early 2010, we continued to provide input to a committee convened by the Zero Carbon Hub to develop proposals for a Building Performance Evaluation programme, to be funded by the Technology Strategy Board (TSB). Our members gave presentations at the launch of the programme in May. However, the approach we had advocated proved impracticable in relation to TSB's procurement rules as a public-funded body. For various reasons, UBT was also unable to take a central role of facilitation and advice that we had hoped might have been possible when we first talked to TSB about their proposed programme in 2008.

We had anticipated that our charitable status would have allowed us to work in partnership with government, but in the event it proved inhibiting. If UBT were to have had more core funding, the outcome might have been different; and we would have had a more substantial portfolio of expertise, techniques, results and connections to draw upon.

CONFERENCES AND COURSES

In 2010 we made twenty-five presentations, including events in Australia, India, Ireland and New Zealand. In pursuit of our no-fly policy, we have been making more use of electronic media, in particular for an 90-minute session on the new professionalism in Sydney in April on a live video link, a Q&A at a Carbon Trust event in Northern Ireland, and the pre-recorded introduction to the launch sessions of Soft Landings in Australia and New Zealand, which was given in nine state capitals.

UBT actively supports postgraduate courses around the world by teaching and by informal support to students working on building performance. The two-day building performance module in the MSc on Advanced Environmental and Energy Studies organised by the University of East London at the Centre for Alternative Technology (CAT), Machynlleth is now in its sixth year and continues to be very popular. We have also been approached about a similar course at the Eden Project, starting in 2011 or 2012.

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UBT also has teaching input to postgraduate courses at the University of Cambridge, Oxford Brookes University, University of Newcastle and University of Reading.

WEBSITE AND STUDENT SUPPORT

UBT maintains and develops its international network of researchers, practitioners and policymakers through our website, www.usablebuildings.co.uk. In 2010, we completed updating our [portfolio of twenty-two feedback techniques](#) to include recent developments. The update was also designed to help support Soft Landings and the Technology Strategy Board's building performance evaluation programme.

In 2010 the website received 600 password requests, so we now have a total of 3000 password holder members. The website has over 1500 unique visitors per month, with over one gigabyte of material downloaded every month. More information is in the endnotes.

We build capacity by disseminating material from UBT and other authors. We expand our network by responding seriously to queries, particularly from postgraduate students and researchers around the world. Typically five such queries a week receive a considered response from our faculty, or from members of our network. We also provide more substantial support to student dissertations, especially by providing free access and guidance to occupant survey techniques and analysis. We assisted over thirty postgraduate student projects in 2010.

THE INCUBATOR

The Incubator contains initiatives which UBT is prepared to underwrite because we believe in their potential, and is seeking to obtain support to take them further. In 2008, *Soft Landings* moved out of the incubator, fledged with the production of the *Framework* document in 2009, and is now moving into the mainstream, e.g. with a mention in the Government's *Innovation and Growth Team's* report on low-carbon construction.

The emergence of our work in housing evaluation from the incubator was marked by the special issue of *Building Research & Information* in September. One characteristic that is emerging is the growing similarity between problems in recently-completed housing and those we identified in non-domestic buildings in the 1990s; and which led to the formation of UBT. Foremost amongst these are insufficient attention to detail, unmanageable complication, and poor communication of design intent to the users.

Although in 2009-10 we managed to update our web-based *Portfolio of feedback techniques*, it still remains partly in the incubator, being a warehouse of material in need of better explanation to potential users. We hope to have the opportunity to invest in its front end in 2011.

Our proposed *Portfolio of feedback results* remains in the incubator. We developed a proof-of-concept website for this five years ago, but it was a fairly major operation to turn this into a useful resource and we were unable to find a

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backer. At one stage, we had hoped that it might be adapted to disseminate results from the Technology Strategy Board's building performance evaluation programme, but their work seems to have taken a different path. With other organisations also developing websites with case studies, what we intended may have been overtaken by events – but we are still looking out for opportunities.

Another idea is a series of *Flashcards* – condensed summaries that bring people up to date on a strategic or detailed topics about understanding and improving building performance. Typically these would consist of two pages (or computer screens), the first with key points and the second with supporting information. In recent discussions, we have identified a real need for these; and they might be appropriate candidates for sponsorship.

Funding, fundraising and support

Sadly, our annual income has continued its downward trend, from £53,092 in 2009 to £31,007 this year. Reasons include the political and economic situation, limited capacity, distractions that a growing interest in our area of work have been providing, and a failure to achieve our goal of shifting our income from project-related to core funding.

In 2010, charitable donations more than halved (from £20,000 to £9,695), because one of our core funders was unable to continue its annual donation. Fortunately, we were able to curtail our expenditure, and so reduce our annual losses from £19,531 in 2009 to £12,792 this year. However, the savings have largely been made by faculty members doing more work for nothing, a situation that is unsustainable in the longer term.

Recent efforts to find charitable funding have focused on a large overseas philanthropic body with an international programme to improve building performance, and especially energy and carbon efficiency. We first contacted their European arm. We were then approached directly and independently, and had meetings with representatives in November and December. We hope this may lead to opportunities in 2011 for core or project-related funding. We have also identified opportunities for collaborative work with two other charities in the UK.

UBT's financial policy has been to maintain reserves of at least £40,000, and to take action if they threaten to fall below this figure. In 2009 our reserves fell to £44,000 making the Trustees aware of the need to curtail our exposure. In 2010, our ambition to stay just above the action level was thwarted by the unexpected loss of an annual donation of £10,000 at the end of the year; making net current assets now £31,708. Given the uncertainties, the Trustees are hoping to stabilise the situation in 2011 and may need to review more radical options for 2012.

We gratefully acknowledge support from:

- Davis Langdon for continuing to provide annual core funding during this difficult year.

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- The Technology Strategy Board, for funding *Soft Landings for Schools* work, which was completed in 2010.
- Matching funding for *Soft Landings for Schools* from Architecture + Design Scotland, CABE and Willmott Dixon Re-thinking.
- BSRIA and their publisher Roderic Bunn towards production of a 24-page colour brochure on *Soft Landings for Schools*.
- Help from volunteers, in particularly Mike Buckley on editing *Soft Landings for Schools*.

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Summary of Public Benefits

The Charity's overall objectives are to promote studies of building performance in use; put the results in the public domain; and disseminate and interpret the findings in the wider public interest. In these areas, as UBT's funding shrinks its influence grows. From the activities described earlier, we identify the following to be of particular public benefit:

The New Professionalism

UBT is seeking to change the culture of building professionals from "handing over the keys and walking away" to a close engagement with outcomes. This offers major public benefits in improving all-round building performance (i.e. for the occupants, the economy and the environment) in ways that markets alone have not been able to. Professional institutions already require their members to understand and practise sustainable development, so UBT argues that this must necessarily include proper understanding of the consequences of their actions. The concept seems to be gaining momentum.

Soft Landings

Throughout its life as a charity UBT has been helping to research, develop, test and promote *Soft Landings* as a practical way of delivering *the New Professionalism* on any building project. In 2009, we were co-authors and publishers of the *Soft Landings Framework*. In 2010, we completed and published a technical report on applying this to case studies of school projects, and with BSRIA produced an illustrated summary document. We also contribute to the user group that BSRIA is hosting, where members grapple with details of implementing the *Framework* and compare their experience of its practical application. The point is to ensure that buildings work as intended from the beginning, and are not hobbled by ongoing, chronic problems; and for the construction industry, clients and government to learn more from the projects they undertake. This is again of major public interest; and the approach is supported in the Government's *Innovation and Growth Team's* November 2010 report on low-carbon construction.

Communicating Building Energy Performance

Building on over 25 years work in the field of energy performance research and reporting, UBT is vigorously pursuing balanced and clear methods for communicating building energy and carbon performance in the UK and worldwide. This is becoming increasingly important to the delivery of low-carbon building performance, in a world of increasingly complicated and incompatible policy instruments and performance metrics.

Portfolio of Feedback Techniques

This year we updated UBT's portfolio of techniques, in particular to support *Soft Landings* and the Building Performance Evaluation programme. The portfolio directs practitioners and researchers to available methods for building evaluation; and encourages them to adopt and build upon robust and

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tried-and-tested methods.

Courses, seminars and public lectures

UBT maintains a popular programme of lectures, workshops, masterclasses and seminars, mostly at postgraduate courses in universities, national conferences, and at events and short courses in designers' and builders' offices. We assist individuals working in the area of building performance through mentoring, making connections and providing support. We have also convened feedback user groups from time to time; an idea that others are now picking up, as evidenced by the setting-up by other of a South-West regional feedback group to which UBT has been invited. We gave a short introductory talk at its inaugural meeting in Bristol in November, and were co-sponsors of a joint event with local authorities on performance feedback and soft landings.

UBT's website www.usablebuildings.co.uk

Our modest website has proved remarkably popular worldwide, and a valuable resource for practitioners and postgraduate students. It exists primarily to give open access to technical papers, articles and presentations. UBT also cooperates with publishers and authors to allow papers by UBT faculty and others to be free downloads to members, not restricted behind paywalls.

UBT's activities are one step on the road to a further goal - buildings that work better for their occupants, economically, and for the environment – so many indirect effects of our work are necessarily unknown to us. We are encouraged that systematic building evaluation is now entering the mainstream in the UK and in other countries; that the often major differences between expectations are now more widely appreciated, and by the number of citations our work is obtaining, for example in Google Scholar.

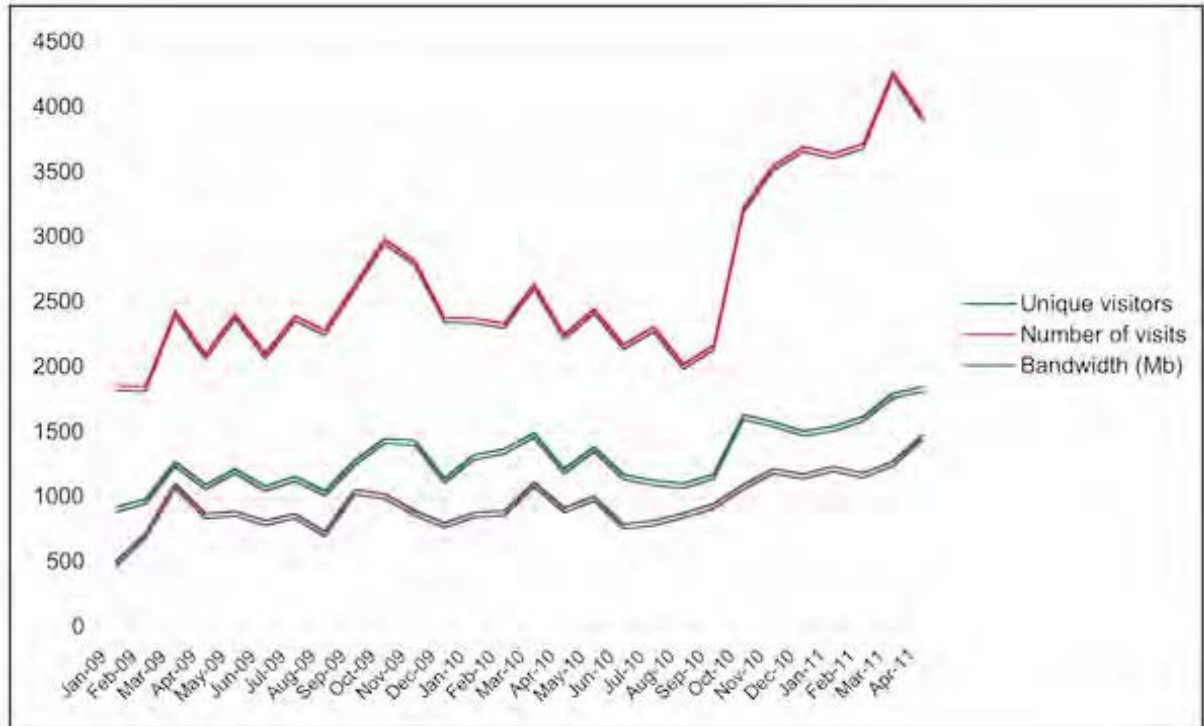
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ENDNOTES

Usable Buildings website activity 2009-10



For most of 2009-10, our website www.usablebuildings.co.uk attracted between 1000-1500 'unique' visitors per month, with each visitor coming back twice on average. There tends to be a dip in the summer and a peak in the autumn, owing to holidays and the academic year. However, from October 2010, activity seems to have changed, with visitors topping the 1500 mark and also making more visits each. This may be a symptom of a growing interest in building performance evaluation, and in the UK the launch of the Technology Strategy Board's Building Performance Evaluation programme. The number of "hits" is typically 100,000 per month.

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Events and University courses, 2010

These are public presentations by UBT advisers, trustees and supporters at which the Usable Buildings Trust has been given prominence. Private events are not normally included. Where available, presentation graphics can be found on the Events page of www.usablebuildings.co.uk

Bill Bordass, *People, environment and control in buildings*, University of Reading, MSc in Intelligent Buildings, 20 January 2010.

Adrian Leaman, *The Buildings in Context*, Technology Strategy Board *Energy Efficient Whitehall* project launch, Quaker Meeting House, Euston, 26 February 2010.

Bill Bordass, *The User's Perspective: buildings, energy and carbon*, World sustainable energy days conference: *Building renovation: towards low energy consumption*, Stadhalle, Wels, Austria, 4 March 2010.

Adrian Leaman, *Sustainable Schools: Myth or Reality?* Technology Strategy Board *User-Centred Design 'Sandpit'*, Brailbook House, Bath, 15 March 2010.

Adrian Leaman, with Bill Bordass via video link, *Predicted Performance versus Actual or 'Get Real about Buildings'*, Carbon Trust Low Carbon Buildings Symposium 23rd March 2010, Dunadry House, Antrim, 23 March 2010.

Adrian Leaman, *Soft Landings: the obvious next step*, BCO Environmental Sustainability Group, King Sturge, 30 Warwick Street, London, 26 March 2010.

Roderic Bunn, *Soft Landings: Closing the Loop Between Low Energy Design and Reality*, ARBS 2010 Conference, Sydney Convention & Exhibition Centre, Sydney, Australia, 12 April 2010.

Bill Bordass, *People, Buildings, Energy and Carbon: Myths and realities*, ARBS 2010 Conference, Sydney Convention & Exhibition Centre, Sydney, Australia, 12 April 2010 *Via video link*.

Adrian Leaman and Bill Bordass, *Building Performance Module by the Usable Buildings Trust*, UEL/CAT MSc *Architecture course on Advanced Environmental and Energy Studies*, Centre for Alternative Technology, Machynlleth, 17-18 April 2010.

Bill Bordass, *Managing expectations for energy and carbon performance*, CIBSE National Conference, British Museum, London, 28 April 2010.

Adrian Leaman *Building Evaluation Primer*, Newcastle University CAP course, Bedson Teaching Centre, 13 May 2010.

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Adrian Leaman, *Building performance assessment methods*, School of Architecture, Victoria University of Wellington, 25 May 2010.

Adrian Leaman, *Green Buildings: are they really better for their users?* New Zealand Sustainable Building Conference, Te Papa museum, Wellington, 26 May, 2010.

Edge Debate,; *The focus on carbon is distracting us from saving carbon.* , Speakers: Guy Battle, Bill Bordass, Stephen Hill, Bridget Rowell, Sunand Prasad, Institution of Civil Engineers, 10 June 2010, chaired by Paul Morrell, the UK Government's Chief Construction Adviser.

Bill Bordass, *Benchmarking energy use in public and commercial buildings* (keynote address), USAID India Workshop on *Benchmarking of energy consumption and labelling of commercial buildings*, Le Meridien Hotel, New Delhi, India, 14 July 2010.

Bill Bordass, Andrew Eastwell and Mark Way, *Rethinking professional services for the low carbon future*, Construction Industry Council seminar on The Building Centre, Store Street, London, 16 September 2010. Chaired by Paul Morrell, Chief Construction Adviser.

Bill Bordass, *Usable Buildings 1970-2050: Back to the future?* Association of University Engineers' 40th Anniversary Conference, Manchester Conference Centre, 9 September 2010,.

Bill Bordass, *A new professionalism: the background to Soft Landings*, CIBSE Australia and New Zealand seminar series on Soft Landings (video supported by slides) and Roderic Bunn, *Soft Landings: Parts 1 and 2*, Perth 1 November, Adelaide 3 November, Canberra 5 November, Brisbane 8 November, Christchurch 10 November, Wellington 12 November, Auckland 15 November, Sydney 17 November and Melbourne 23 November 2010.

Bill Bordass, *Design intent to reality: using post-occupancy evaluation for better building design and operation*, Oxford Brookes University MSc course, 13 October 2010.

Bill Bordass, *Design intent to reality, towards a new professionalism*, CIBSE East Anglia Region, Norwich, 4 November 2010.

Bill Bordass, *Design intent to reality: managing expectations and closing the credibility gaps*, Seminar on zero carbon schools, 9 November 2010, the Custard Factory, Birmingham.

Bill Bordass, *What clients need: a better service from the industry*, Willmott Dixon, Bristol, 20 November 2010.

Bill Bordass, *Soft Landings in local authorities*, 30 November 2010, Aecom, Bristol,

Bill Bordass and Adrian Leaman, *Design Intent To Reality (3 parts)*, Interdisciplinary Design for the Built Environment (IDBE) Masters course, Cambridge, 9 December 2010.

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Bill Bordass, *Display Energy Certificates - Background and Potential*, UK Green Building Council, Workshop on Display Energy Certificates, 13 December 2010.

Publications 2010

A Leaman, *Are buildings getting better?*, Arup Journal, 1, 2010.

A Leaman and F Stevenson (editors), *Housing occupancy feedback: linking behaviour and performance*, special issue of Building Research and Information Journal 38 (5), Sep-Oct 2010.

A Leaman, F Stevenson and W Bordass, *Building Evaluation: Practice and Principles*, Building Research & Information 38 (5), 564-577, Sep-Oct 2010.

A Leaman and F Stevenson, *Evaluating housing performance in relation to human behaviour: new challenges*, Building Research and Information Journal 38 (5), Sep-Oct 2010.

W Bordass, *Soft landings for schools: Technical report on the case studies*, the Usable Buildings Trust September 2010.

M Buckley, W Bordass and R Bunn, *Soft landings for schools: Case studies*, the Usable Buildings Trust and BSRIA, November 2010.