



the centre for the **BUILT ENVIRONMENT**

# CBE NEWS

Autumn 2006

CONSULTATION EVENTS ON  
POLICY FOR ARCHITECTURE

WORKER ENGAGEMENT  
FOR HEALTH AND SAFETY

CONSULTING THE PUBLIC  
IN HELENSBURGH



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# EDITORIAL



left: Branka Dimitrivic, Director

centre: David O'Neill, Administrator

right: Anne Blacklock, Business Development Manager

Welcome to the autumn issue of CBE News, which highlights some recent and future activities of academics at the participating higher education institutions.

Consultation and engagement with the general public, professionals and construction workers emerged as a significant theme of this issue. Academics and students of Mackintosh School of Architecture contributed to the public consultation organised by Helensburgh Community Council with the view to explore ideas for the town's regeneration and development. Researchers at School of the Built and Natural Environment at Glasgow Caledonian University presented the outcomes of their research on Approaches to Worker Engagement to 120 delegates in London. CBE assisted Scottish Executive's Architecture Policy Unit in the organisation of consultation meetings on Policy for Architecture, held in Glasgow, Aberdeen and Inverness.

As our events in Aberdeen and Inverness show, CBE is expanding its activities across Scotland following one of the requirements of SEEKIT funding, Please see our forthcoming programme in CBE E-News and updates on the CBE website ([www.cbe.org.uk](http://www.cbe.org.uk)) to let us know which of the listed events you wish to be organised in-house or in other places in Scotland. To keep up to date with the CBE events and those organised by other parties, you can subscribe to the CBE E-News, our electronic newsletter, by contacting [David.Oneill@gcal.ac.uk](mailto:David.Oneill@gcal.ac.uk)

SEEKIT have also provided funding for an awards scheme that CBE will run. Knowledge and Technology Transfer in the Built Environment (KTTBE) awards aim to instigate joint academic/industry projects. You can find out how to apply in this issue and on the CBE website. We showcase two examples of academic assistance to developing innovative flood barriers and anti-damp devices for new and existing buildings. The list of academic expertise available at the participating institutions will assist you in identifying with whom you might join forces to apply for the KTTBE award.

If your organisation does not have an environmental policy or waste management plan, Sustainability Centre in Glasgow will provide free and bespoke assistance. Please see their announcement in this issue. For organisations interested to expand business abroad, we bring articles on opportunities in Dubai and on information sources for construction industry in France and Germany.

CBE office will move to new premises in the Buchanan House, 5th floor, in November 2006. Most future CBE events will be held in a seminar room on the same floor. As Buchanan House is next to the Glasgow Caledonian University, we will continue to use services of the campus mailroom. So, the CBE mail address will remain as follows: The Centre for the Built Environment, Glasgow Caledonian University, 70 Cowcaddens Road, Glasgow G4 0BA. Our telephone numbers will not change. We look forward to welcoming you at our new premises.

# MORE THAN PIONEERS

## SUMMARY OF A RECENT CBE SEMINAR

### A Hundred Years of Women at Work in the Scottish Building Industry (1820-1920) Dr Nina Baker, Department of Architecture, University of Strathclyde, Glasgow

In the early 21<sup>st</sup> century, and a generation after equal opportunities legislation in the UK, it is still the case that work choices are gendered. The construction industry remains one of the most segregated of occupations, being still predominantly white and male. There have been various attempts over the years to encourage women to take up construction trades but the barriers facing such women remain the same: traditionalist prejudices that this is not women's work. The woman who chooses to take up a manual trade is likely to be isolated and made to feel she is pioneering in unexplored territory, because women have never done this kind of work before. Whilst that may be true at the level of some personal experiences, it is not the case in terms of historical fact. Records show that women were working in all the main building trades, to a greater or lesser extent, from earliest times.

Starting from the point in 1820 when trades directories begin to record who did what and where in Scotland, it is possible to find women working as painters, brickmakers, gasfitters, joiners and so on, in all the Scottish counties and throughout the hundred years under consideration. Is it possible that we are less egalitarian now than in the past? Looking at statistics and life stories of women from 1820-1920 yields some surprising results and uncovers the hidden history of Scottish women quietly getting on with their work – in the building industry.

For instance, in the first part of the 19<sup>th</sup> century Ann Coulson (nee Boyd) was working as a top-of-the-range housepainter and interior decorator to the middle and upper classes of Edinburgh and the Lothians. She and her husband Thomas worked on Dalmeny House, Falcon Hall and many middle class houses in the city. Their own home featured in a 'homes and gardens' type write up in the Scotsman, as being remarkably decorated. Ann continued to work after her husband's death and the business was auctioned off on her own death a few years later.



Rachel Hamilton (main), Isobel Twaddle (top right), Clydebridge 1916 extension brickies (bottom right)

More prosaically, the interlinked families of the Murrays, Middletons and Ramsays in Glasgow included women who were painters and decorators from 1845-1915. Isobel Twaddle ran the family plumbing business for many years after her husband's early demise, until her sons were old enough to be able to take over. In the face of considerable hostility in the trade in Glasgow, she ran Hugh Twaddle & Sons successfully, even taking apprentices and enlarging the business in the 1880s & 1890s.

It would have been possible, even at the height of Victorian sensibilities about the place of women in society, to find a female plumber, glazier or gasfitter in most of the counties of Scotland, particularly in the latter half of the 19<sup>th</sup> century. Women also worked as masons, joiners, plasterers and bricklayers throughout the period. More famously, Rachel Hamilton was the forewoman of the Jordanhill brickworks in the mid 19<sup>th</sup> century, having worked also in the shipyards and been a special constable during major riots at Partick.

This demonstrates that women working in the industry today are more than pioneers: their work is a continuation of a path trodden by others. Can the industry use this historical path to guide its way to a more diverse future? I would like to hope that knowing more about the industry's history of diversity could normalize the choices for a more diverse workforce in the future.

# THE POETICS OF PLACE

## URBAN STRATEGIES FOR HELENSBURGH

A collaborative Urban Design project between the Mackintosh School of Architecture and Helensburgh Community Council.



Students of Mackintosh School of Architecture at the consultation event

Helensburgh Community Council first approached the Mackintosh School of Architecture in November 2005 with a view to developing ideas for the town of Helensburgh. Subsequent meetings with Kathleen Siddle of the Community Council and Nigel Millar, its Chairman, established the scope, duration and timing of the project, which was to end with a public exhibition in the town. The project was undertaken by Fourth year students of the Mackintosh School of Architecture in a period of three weeks between the end of February and the middle of March 2006. The public exhibition of the projects was held in the town between 18th and 30th March this year.

The impact of the exhibition in the community, which was called "The Poetics of Place", was astonishing and the outcome of the project exceeded all expectations. Consequently the Mackintosh School hopes to embark on a continuing collaboration with the Community Council and the recently formed Helensburgh Partnership, a development steering group, jointly funded by Scottish Enterprise Dunbartonshire and Argyll & Bute Council.

This is a short extract from the brief issued to the students...

Helensburgh is a beautiful town. Located on the northern shore of the Firth of Clyde some twenty-five miles west of Glasgow, it enjoys an expansive prospect over the water to distant hills and towns under the ever-changing West Coast skies.

Sir James Colquhoun, who named it after his wife, founded the town in 1776. It was from its inception a well-ordered town and is constructed on a generous, squared gridiron plan, which extends from the esplanade, embraces the compact town centre and extends to the upper reaches of the town. Here, the varied assortment of tenemental, commercial and public buildings which largely define the lower streets gives way to a sophisticated suburban landscape of walls, clipped hedges, gateways, avenues of trees and grass verges. This very particular streetscape and the luxurious planting of expansive private gardens all but conceal the presence of a rich array of villas set within the blocks. The whole ensemble is a unique, if not almost abstract townscape, which is quite simply extraordinary in its seasonal transformations.

Today however, like many Scottish towns, Helensburgh's fortunes are mixed. Essentially now a commuter town with a population of around 15,000, changing commercial practices and retail markets are coupled with slow population decline, the loss of tourism and the lack of indoor recreational facilities. This has brought about a period of economic uncertainty and has raised questions as to the future of the town.

In Helensburgh's favour are its magnificent setting, the clarity of its plan, its fine architecture, distinctive landscape and the potential of its seafront. Geographically it has access to ferry services and good rail links, not only to Glasgow and beyond, but also to Mallaig in the north. Finally with the opening of the Loch Lomond National Park a few miles to the north, Helensburgh can be seen as a veritable gateway to an extraordinary set of landscapes.

The project brief also drew on a series of recent strategy documents. The first was "Helensburgh Town Centre & Waterfront - Final Report", commissioned from consultants "Yellow Book", which focussed specifically on those two areas of the town. The second prepared by the "Vision Steering Group", was an offshoot of the Community Council. This took a holistic approach to the town and was greatly informed by public consultation. With some exceptions both documents were in general accord and, in summary, six areas were identified which most urgently required the formulation of integrated design strategies.

These areas were as follows:

- The Town Centre
- The Waterfront and Pier
- Young People
- Tourism
- The Town Environment
- The Town Infrastructure

Neither document contained images, which might have indicated the potential impact that their respective resolutions might have had on the town. Consequently, it was hoped that the Mackintosh School of Architecture project would visually describe and explore the urban potential of Helensburgh and act as an additional catalyst which might help focus some of the ongoing, and often heated, debate between all parties about the future of the town.

The project was integrated into the Fourth Year Urban Studies course, which offers students the opportunity to explore, through design and research, the complex nature of the urban environment. The project was timetabled between the design of a public building in Glasgow City Centre and a housing project located close to the centre of Glasgow. The project was also deliberately short - three weeks - in order to encourage a set of intuitive propositions based on the students' generic understanding of urban issues already acquired and their immediate observations of the town. Prior to embarking on the project two short talks were delivered to the students, firstly by Stuart Noble, a local historian and author of books on the town and its region, and secondly, Bill Brackenridge, Director of the Helensburgh Partnership. The talks provided a succinct but informative introduction to Helensburgh, its historical evolution and the current issues facing the town.

The students were organised into twelve, self selected teams of six and were set the task of interpreting the town, formulating ideas for design development and finally presenting them for public exhibition. Student led research into the town was conducted on a team by team basis and was necessarily limited due to the restricted timescale of the project. This, however, encouraged the teams to take a broad overview of the urban construct of Helensburgh, allowing them to target a



Students' projects for regeneration of Helensburgh

limited, but significant set of issues within their design proposals. To allow for easier comparison between the proposals, it was determined that the format for each of the twelve presentation panels would measure 1200mm x 1200mm. In this way each team followed independent lines of enquiry and the resulting ideas were clearly and concisely communicated. Although many ideas were, perhaps inevitably, somewhat naïve, they were nevertheless, highly stimulating and, importantly, drew informed responses from the public.

Journalist and broadcaster, Ruth Wishart, in a packed Victoria Halls on Thursday 16th March, formally opened the exhibition. On the following Saturday the exhibition reopened in a vacant shop on West Clyde Street, overlooking the waterfront and manned daily by pairs of students. The public response was remarkable. The exhibition attracted over 1000 visitors, almost three hundred of who voluntarily returned questionnaires.

The results of this research are currently being analysed by a Mackintosh School researcher and Project Coordinator of "Living Cities", a recently founded research unit within the School. Whilst it is too early to comment on the results of this analysis, initial findings suggest a difference of opinion in development priorities between the inhabitants of Helensburgh and visitors to the town. This intriguing finding will hopefully form the basis of further research into the nature of public participation in Helensburgh's regeneration and henceforth the Mackintosh School of Architecture's continuing relationship with the town.

**Mark Baines**  
Tutor/Lecturer

**Mackintosh School of Architecture**

# APPROACHES ON WORKER ENGAGEMENT IN HEALTH AND SAFETY

## CBE AND SBNE IN LONDON TO PROMOTE WORKER INVOLVEMENT



CBE was involved in preparing and managing a knowledge transfer event for the Health and Safety Executive (HSE) in London, together with the team from Glasgow Caledonian University's School of the Built and Natural Environment.

Dr Iain Cameron, Head of Construction Management & Economics, and Dr Billy Hare, Research Fellow, presented the outcomes of their research on Approaches to Worker Engagement to 120 delegates. The research funding of £96,000 was provided by HSE.

Delegates learned about the finer points of how to get construction workers more involved in Health and Safety.

The researchers from BNE were accompanied by Pamela Thomson, Business Development Officer, Anne Blacklock, Business Development Manager from the Centre for the Built Environment.

The team from BNE hit the 'Big Smoke' during London Fashion Week to hold a Knowledge Transfer Event for the Health and Safety Executive (HSE) on 20th September. Dr Iain Cameron, Head of Construction Management & Economics, and Dr Billy Hare, Research Fellow, went mob-handed flying the flag for GCU in the midst of one of London's busiest weeks. The purpose of the trek was to enlighten 120 delegates on the findings of their £96K research, funded by HSE, investigating "Approaches to Worker Engagement".

Delegates were lured by the likes of Zandra Rhodes and John Rocha, but thankfully they were more interested in the finer points of how to get construction workers more involved in Health and Safety. The researchers from BNE were accompanied by Pam Thomson, Business Development Officer, Anne Blacklock, Business Development Manager, from the Centre for the Built Environment, and Anita Meldrum from MPR who is undertaking a PhD on Worker Engagement.

Delegate packs for the event were bundled together in their stylish 'Caledonian' bags. So if anyone spotted the Caledonian 'C' in any photos of the Fashion Week events you'll know how they got there!

### Introduction to the research project

So you think your Safety Management System is bullet proof, your site audits consistently score above 90%, but your workers are still suffering accidents. Conventional wisdom dictates that your next move would be to implement a behavioural safety programme. An integral part of this approach is 'Worker Engagement' (W.E.) but rather than being a small wheel of a larger machine W.E. is becoming a key driver for instigating cultural change. HSE Construction Division commissioned Glasgow Caledonian University (GCU) to investigate and report on various approaches to W.E. The findings show what works, what doesn't and what the future may hold for behavioural safety.

### Behavioural safety

Behavioural safety is seen by many as the 'last piece of the jigsaw' to move the industry beyond the current accident plateaus. Yet the concept does not come without its critics. Decriers believe safe behaviour programmes run the risk of assuming unsafe worker behaviour is the only cause of accidents, ignoring management or systemic errors. This approach focuses on compliance with procedures restricting thinking to the lower end of the hierarchy of risk controls. Consider, for example, measuring the number of times a plumber complies with

a 'hot-works' permit-to-work system when joining copper pipes. Whilst the observer notes correct PPE worn, warning signs displayed, combustible materials isolated etc. etc. they are completely oblivious to the option of replacing the hot-works process altogether by specifying 'push-fit' connections. Something the plumber is probably well aware of.

### The research

Here's where 'Worker Engagement' enters the stage. Worker involvement has always been part of most behavioural programmes, not to mention being a statutory requirement. But maybe now it should be more prominent. HSE believe this to be the case. So much so that Gordon Crick, Construction Division's champion of their Worker Engagement Initiative, funded a £96K research project, lead by GCU's Dr Iain Cameron with Dr Billy Hare and Dr Roy Duff. The research team investigated good practice, which included defining what good W.E. should look like, before implementing these approaches on sites to measure their effects.

Rather than report on mega projects, where safety is generally better, the research team sought to ground their study in a traditionally difficult and challenging



From the Worker Engagement Conference in London

industry sector: refurbishment and fit-out works. Dr Cameron wanted to move the research away from "atypical construction projects to sites representative of where the majority of accidents occur". To this end the team engaged Stephen Coppin, Head of EHS at Lend Lease Projects, seconded to DWP Job Centre Plus rolling out the refurbishment of Job Centres across the country. Stephen convinced the client to invest heavily in an infrastructure, built on OGC guidance, "promoting a just and positive culture conducive to safe and healthy working on all of the projects".

This knowledge and expertise was drawn on to help the team develop four approaches which were implemented on various Royal Bank of Scotland refurbishment sites, through the involvement of John Hanley, Director for SHE at MACE Ltd. John facilitated previous GCU research where visiting Professor Bill Maloney gave groups of managers and workers identical scenarios, asking them to develop risk assessments and method statements. The findings of this previous study showed



the depth and knowledge possessed by workers that the managers failed to identify. Professor Maloney is of the opinion "when you hire the hands, you also get the brain". Therefore, the HSE research project sought to explore worker engagement from the perspective that workers can contribute to the management of H&S and influence others rather than the traditional view that they need to be told how to behave.

The four approaches were implemented across nine sites by the research team:

1. Pre-task briefings involved site management outlining the work to be done at the start of each shift and discussing H&S issues with the work gangs. Feedback cards were given to workers to gain views on any issues they wished to raise.

2. Suggestion boxes were installed and safety circles of workers organised, for the purpose of identifying and solving safety problems. Suggestions were fed into the safety circle discussions.

3. Informal approaches involved the site manager walking around the site at least once a shift and discussing H&S issues with workers. He kept a diary to record the issues discussed. A worker 'safety champion' was asked to fulfil a similar role. He also carried a diary.

4. The Safety Rep. and H&S committee is the traditional approach to worker consultation, promoted by the construction Trades Unions. This was a difficult approach to test, as no workers volunteered to undertake the role of safety representative. The approach was accommodated through a similar type of contractor, who was already training, with Trade Union assistance, a worker to become a Safety Rep.

All approaches incorporated an "action list" that was used to record issues raised and track whether they were closed out satisfactorily.

# APPROACHES ON WORKER ENGAGEMENT IN HEALTH AND SAFETY

## The findings

The study found that certain elements from each approach were successful whilst others were not as successful. For example, workers were more inclined to participate in face-to-face oral communication, often of an informal nature. These were pre-start meetings, safety circle meetings and informal conversations with site management. By contrast, attempts to engage workers in written form, such as feedback cards, suggestion forms and worker diaries, were unsuccessful.

Those sites where more than 50% of the sampled workers had formal health and safety training recorded more discussion on topics beyond merely site issues (see 'meaningful discussions' text-box). Training also helped workers understand why certain safety controls were in place and raised awareness of hazards.

## Meaningful discussions

- The scope of issues covered; do they relate purely to physical hazards or do they extend to organisational management, safety culture etc?
- The objectives in developing the solutions - where do they rank in the hierarchy of risk controls? i.e. avoid, reduce or PPE.
- The depth of understanding; of accident causation.
- The scope of solutions presented - similar to the two above, but dealing with whether solutions are aimed at prevention, e.g. through design, or if they are reactive.
- The ability to transfer issues by involving others when an issue needs action by those out-with the authority of the immediate line manager e.g. senior management, plant manager etc.

There were two sites within the case studies that showed a poor response to the interventions. On one occasion the workers, who were sub-contracted, displayed a negative attitude to the intervention. On the other site the manager displayed a negative attitude. This shows how things can go wrong if only a few people don't buy into the idea.

Whilst investigating the factors that constitute effective worker engagement it has been found that any approach should have three elements that can be measured, to gauge success (see 'elements of good worker engagement' text-box). Resource provision and meaningful two-way discussion are important. However, managers including workers views and taking action was seen as a key demonstration of leadership, required to gain trust and ultimately sustain the process beyond that of a mere short-term initiative. Therefore a transparent 'Action List' with target dates and named individuals should be visible to all workers, ideally on a site notice board.

## Elements of good worker engagement:

- Adequate and appropriate resource provision;
- Opportunities for meaningful two-way communication;
- Regular audit of the extent to which: decisions have taken account of workers input and issues raised by workers have been followed through.

## The future

The research team recently held a knowledge transfer event at the Health & Safety Executive's London Head Office with HSC Commissioner Danny Carrigan and Stephen Williams, HSE Chief Inspector of Construction. 130 delegates attended and also participated in workshops.

Danny Carrigan was keen to see a return to "sensible health and safety" something workers are able to help with by "bringing managers back down to earth". Stephen Williams wants to see contractors move "beyond minimum compliance to best practice". Also stating Worker Engagement "is now a priority topic for inspectors". Gordon Crick has rewritten the Construction Design & Management Regulations 1994 (CDM) section on 'workers views', which has drawn heavily on the research findings. Specifically, the need for face-to-face, informal communication, opposed to voluminous paperwork, was a key criticism of the CDM Regulations. This also has

the backing of the Construction Industry Advisory Committee (CONIAC) Worker Engagement working party, of which, Gordon is the secretary.

The research team also threw down the gauntlets to industry at the event. A Worker Engagement 'Action Plan' was issued for delegates to instigate their own approaches for improvement. Dr Billy Hare posed the questions "Are you doing all you can or is your policy on worker engagement merely lip service? What issues are your workers discussing: is it toilet rolls or design solutions to prevent work at heights? Could you prove that you are actioning worker concerns or recommendations?"

Worker Engagement is just one element of GCU's plan of research work for improvement of H&S in construction. The team are currently undertaking their next linked study, funded by the Institution for Occupational Safety & Health (IOSH), investigating superior performance in relation to H&S professionals. They are also creating a Worker Engagement Knowledge Club on their website as part of their wider research work. HSE have reached what they call "benefits realisation stage" and are now handing the baton over to industry. GCU are hopeful that they can work with industry to monitor the long-term effects of worker engagement. This requires industry funding if the full benefits are to be realised. Stephen Williams gave the research team his seal of approval stating, "HSE will continue to work with GCU to encourage and support the development of worker engagement in the industry".

The full research report will be published by HSE in due course [per G. Crick]. However, if you want an advance copy Dr Hare can furnish you with one on receipt of your Action Plan.

Contact Dr Hare for an Action Plan template at b.hare@gcal.ac.uk or by telephone on 0141 331 3908.

# Have You Got An Environmental Policy Or Waste Management Plan?

The Sustainability Centre in Glasgow (SCG), in partnership with Laing O'Rourke, Dearle & Henderson and the Centre for the Built Environment (CBE), has been given funds from the Scottish Executive's Expertise, Knowledge & Innovation Transfer Fund and the European Regional Development Fund to provide free and bespoke assistance to participating small and medium enterprises (SMEs) in the West of Scotland.

The project specifically focuses on two areas that will assist SMEs:

- The development of an environmental policy statement
- The construction of a waste management plan

These are increasingly requirements of public sector tenders. One contractor involved in the project recently stated:

*"We have been exposed to areas that were completely unfamiliar to us previously. In particular, an environmental and sustainability policy within our line of work is urgently becoming an essential element."*

If you are interested in becoming involved in the project; you will be asked to complete a questionnaire which covers the key areas relating to sustainable practice and knowledge to allow the project team to identify the key issues and gaps in sustainability performance. The project allows each SME up to a maximum of sixteen hours support.

For further information, please contact Dr Kirsty Hunter or Ms Geraldine Trufil, on 0141 273 1367.

**Promoting Sustainable Business Competitiveness in SMEs**

[www.sustainabilityinconstruction.org](http://www.sustainabilityinconstruction.org)





the centre for the **BUILT ENVIRONMENT**

On 6th November 2006, the Centre for the Built Environment (CBE) launched an awards scheme named Knowledge and Technology Transfer in the Built Environment (KTTBE), funded by Scottish Executive's SEEKIT programme. The scheme will promote co-operation in R&D and knowledge/technology transfer between Scottish small to medium sized enterprises (SMEs) and researchers at Higher Education Institutions (HEIs).



SCOTTISH EXECUTIVE

# SEEKIT KTTBE AWARDS SCHEME LAUNCHED

## What are KTTBE Awards?

KTTBE awards are aimed at building relationships between SMEs and HEIs, and at stimulating collaborative work that will lead to new products and processes that will benefit the enterprises, the institutions and the Scottish economy.

The KTTBE awards are aimed specifically at funding feasibility studies that will allow the participants (of whom there must be 2 or more, at least one SME and one HEI) to assess both the potential and feasibility of a new product or process. The feasibility studies must focus on opportunities that can attract follow-on funding from existing sources, demonstrate a clear route to market or indicate a step change in current processes within a company.

The output of the feasibility studies should, preferably, reflect the interdisciplinary or cross-sectoral nature of the work, the value to be obtained from any partnerships on an ongoing basis and the potential to develop a product or process that can give benefit to the participants and to the Scottish economy.

Applications are requested from any Scottish SME requiring technology transfer from an HEI active in construction, architecture, urban planning and related technologies and disciplines.

## How much is a KTTBE Award?

The grants, which are of a value up to £5000, are to be awarded to the HEI(s) to evaluate the feasibility of an interdisciplinary or cross-sectoral approach to a market led problem. This should be of relevance to a Scottish SME who should be a contributing partner to the study. No restrictions apply to the number of KTTBE Awards that an SME can apply for.

There is flexibility in the way in which the funding may be committed. All expenditure, however, must be clearly accounted for in a final report.

## What is required in the Final Report?

The Final Report submitted with the Grant Invoice shall be in two parts. The First Part must detail the work done during the study and outline the outcome of the feasibility study. The First Part of the Final Report will be available for publication on the CBE website and by the Scottish Executive. The Second Part of the Final Report is NOT for publication. It must include detailed accounting of all expenditure by the HEI and the SME and full details of the SME contribution. If the Final Report includes any confidential material then this should be included in Part 2, which will be available to the Partners and to the CBE (under appropriate confidentiality agreements if required).

## How many KTTBE Awards are available?

There are ten awards available for allocation until June 2008.

## Confidentiality and Intellectual Property

The Universities and SMEs applying for the KTTBE Award must consider both confidentiality and intellectual property prior to submitting their application. The university's Research and Commercialisation Office will be required to approve any application of grant. It is strongly recommended that the applicants make early contact with the university's RCO or equivalent office. The CBE will, if required, enter into a Non Disclosure Agreement with the applicants. Given the value of the award it is considered unlikely that significant levels of IP will be generated during the study. However the applicants should evaluate the potential for generating intellectual property and consider entering into an appropriate agreement, if necessary. It will be a condition of award that the SME is able to exploit any foreground Intellectual Property within their business sector.

## De Minimis Rules

Under EC regulation 69/2001 ("the de minimis aid regulation"), this is a de minimis aid to an SME. There is a ceiling of 100,000 euro for all de minimis aid provided to any one firm over a 3-year period. Any de minimis aid awarded to you under this grant will be relevant if you wish to apply, or have applied, for any other de minimis aid.

## How does CBE decide who should get a grant?

An independent committee assembled especially for the task will consider applications, all of which will have signed appropriate confidentiality statements. Proposals will be assessed according to the following criteria:

- Relevance to the KTTBE awards
- Have 2 or more partners involved.
- A strong opportunity to show the feasibility to research and develop a novel market led product or process.
- Opportunity to attract follow-on funding from other sources to research and develop market led products or processes.
- HEI track record.
- Preference will be given to a strong cross-sectoral approach.
- Preference will be given to a strong interdisciplinary approach.
- Quality of the work proposed in the feasibility study.
- Creation of new long-term relationships within the Scottish Community.
- Relevance and benefit to the HEIs.

- Relevance and benefit to any HEI and SME partnership.
- New partnerships that have not jointly received funding from any source.
- Value for money.
- Priority areas: potential applicants are urged to contact the CBE to discuss ideas for any suitable project.

## What is the deadline for applications?

All applications for the first call should be submitted by 5pm on 19th January 2007. The awards will be announced on 9th February 2007.

## Where can I get help with my application?

General advice and help may be sought from:

Dr Branka Dimitrijevic,  
Director  
The Centre for the Built Environment  
Glasgow Caledonian University  
70 Cowcaddens Road  
Glasgow, G4 0BA

tel: 0141 273 1408  
e-mail: Branka.Dimitrijevic@gcal.ac.uk

## How do I apply?

Please use the application form which can be downloaded from the CBE website <http://www.cbe.org.uk>. Application forms should be sent in writing (to arrive before 5pm on the specified date) to the above address.

## What happens next?

You will receive notification of the outcome of your application within 6 working weeks of the deadline you submitted to. If your application is successful, subject to verification of status, the HEI will be offered a grant of up to £5000 to carry out the work proposed in your application.

## How do I claim the grant?

The grant is payable in arrears and will be paid on receipt of a report on how the grant was used, which in the sole opinion of the assessment panel, meets with all the criteria specified in the award winning proposal. A summary of the feasibility study report will then be published on the CBE website.

## How to Establish Knowledge and Technology Transfer Opportunities?

The CBE runs seminars and workshops in key areas of the built environment. These seminars are open to all interested parties and encourage the formation of partnerships that could lead to applications for KTTBE Awards and resulting successful knowledge and technology transfer.

Details of the seminars and workshops and on registration will be found on the CBE web site at: [www.cbe.org.uk](http://www.cbe.org.uk)

# THE URBAN DEVELOPMENT TRENDSETTER THAT IS DUBAI

The Emirate's architectural development frenzy has certainly inspired mega projects elsewhere in the region.

With ambitions to become a hub of global commerce, a top tourist destination and a shopping centre- a New York/Hong Kong/Las Vegas/Miami rolled into one - Dubai has been spending billions of dollars to build an astonishing modern city nearly from scratch in a mere 15 years. Some US\$100 billion worth of real estate under construction or in the pipeline continues the boom to date.

In Dubai, shopping malls, luxury hotels, residential towers and artificial islands are being built. Around 5 million tourists visit Dubai per year and the city -according to government literature- is planning for 15 million by 2020. For Dubai, Singapore has been the model that has already proved that combining business with tourism can be a successful formula for a city-state. To do this, Dubai has turned itself into a transport hub; the existing airport is being expanded and a new airport planned with six runways and the capacity to handle 120 million passengers per year. One of the new runways will be dedicated to cargo aircraft, which will load and unload at the world's first 'logistics city'.

A new report, "Icons of Imagineered Urbanism: Real Estate Development in the Gulf with a Focus on Dubai" was released by Arab Advisors Group's Financial Markets Research division on August 27, 2006. This report can be purchased from the Arab Advisors Group for only US\$ 1500. The 50-page report has 29 detailed exhibits and 29 figures and pictures. The report presents a thorough overview of the outstanding urban development in progress in Dubai and all the main mega projects in the city-state. The report further profiles all the major players in the market including Emaar, United Development Company, Gulf Finance House and Kuwait Finance House - Bahrain. Moreover, the report highlights developments in other cities in the Gulf such as Abu Dhabi, Doha, and Manama.



Burj Dubai, the world's highest building under construction



Please contact the Arab Advisors Group to get a copy of the report's Table of Contents.

"Dubai is not the only city engaged in a construction boom of tremendous proportions attracting international interest; Doha (Qatar) and the island state of Bahrain and are also in the race. The sister emirate Abu Dhabi now also wants a slice of the action. These are examples of 'instant' cities or 'cities within cities' that are focal points of their government's efforts to promote real estate development. They are not cities like London, Paris or New Delhi that have been shaped through a long process of evolution."

Dr. Samer Bagaeen, holder of a PhD in Planning Studies from University College London and Lecturer in Planning, Geography

and Environment at the University of Aberdeen, wrote in the report, which Dr. Bagaeen authored alongside another Arab Advisors analyst.

"The challenge for Dubai and the UAE is to retain their attractiveness for investors and expatriate residents as not just an attractive place to live and work, but also as a cost-effective location. The Dubai municipality is planning for a population of 5 million by 2020 compared to the present 1.2 million. While an official cap on rent increases to 15 per cent has been imposed until the end of 2006 to reduce the frenzy, the growth of rents became a big concern in 2005. As in Qatar, there are expectations that the vast real estate developments under way will lead to a more stable real estate market." Dr. Bagaeen concluded.



left: Burj al-Arab, the world's tallest hotel

The Arab Advisors Group's team of analysts in the region has produced close to 650 reports on the Arab World's communications, media and financial markets. The reports can be purchased individually or received through an annual subscription to Arab Advisors Group's ([www.arabadvisors.com](http://www.arabadvisors.com)) Strategic Research Services (Media and Telecom). To date, Arab Advisors Group has served over to 385 global and regional companies by providing reliable research analysis and forecasts of Arab communications markets to these clients. Some of our clients can be viewed on <http://www.arabadvisors.com/clients.htm>

Arab Advisors Group provides reliable research, analysis and forecasts of Arab communications, media and technology markets.

Arab Advisors Group Strategic Research Services (Media and Telecoms) are annual subscriptions. The services cover nineteen countries in the Arab World: Lebanon, Syria, Jordan, Palestine, Iraq, Egypt, Sudan, Saudi Arabia, Yemen, UAE, Kuwait, Qatar, Bahrain, Oman, Libya, Tunisia, Algeria, Morocco and Mauritania.

For more information, please contact the Arab Advisors Group offices.



[www.arabadvisors.com](http://www.arabadvisors.com)

# A POLICY ON ARCHITECTURE FOR SCOTLAND

## Representatives from industry attend consultation meetings in Glasgow, Aberdeen and Inverness.

In 2001, the Scottish Executive published "A Policy on Architecture for Scotland", which set out forty government commitments intended to help raise awareness of the value of good building design, promote recognition of the importance of architecture to the cultural life of Scotland and improve the quality of Scotland's buildings and built environments.

Five years on, considerable progress has been made and the Scottish Executive is taking the opportunity to review its policy on architecture. Three events were organised jointly by the Scottish Executive's Architectural Policy Unit and the Centre for the Built Environment, to provide an opportunity for professionals in the industry to have input to shaping the future policy priorities for architecture in Scotland. The consultation events took place in August in Glasgow, Aberdeen and Inverness and were very well attended by a good cross section of the industry including local authorities, housing associations, house builders, architects, surveyors and Strathclyde Police.

Anyone with an interest in the quality of the built environment, the sustainability agenda or community engagement in architecture and design, was welcome to attend to air their views. The design of our buildings and places is not just an issue for architects, planners and the construction industry; it is an issue for everyone. Architecture policy impacts on a wide range of issues including planning, regeneration, green spaces, arts and culture, community planning, housing, education and health. The Scottish Executive's Architecture Policy Unit was particularly keen to engage with individuals and organisations it has not met with before and those that might not provide a formal written response to the consultation. Opinions on, or experiences of, current policy and ideas for future direction that policy should take were invited.



To afford the opportunity for discussion, the event was interactive and provided plenty of opportunity for group discussion. Ian Gilzean, Principal Architect and Head of the Architecture Policy Unit at the Scottish Executive, provided a brief introduction and outlined the key areas for discussion. Then, working in small groups, with facilitators Les Scott and Tara McGregor from the Architectural Policy Unit, Branka Dimitrijevic and Anne Blacklock from CBE, delegates discussed three overarching areas of policy:

- How community engagement in the built environment and the planning system might be improved.
- How best to raise standards in the quality of our built environment and engender greater commitment to good design across all disciplines, sectors and interests.
- How sustainability could be better incorporated into the architecture and design policy.

Delegates appreciated the opportunity to share their views on recent progress and, looking to the future, contributed ideas on future priorities for change.

It is the intention to launch the new statement on policy early in the New Year. Please refer to [www.scotland.gov.uk](http://www.scotland.gov.uk) for more information.

CBE and the Architectural Policy Unit would like to thank The Scott Sutherland School of Architecture, in Aberdeen, and Highland Council, Inverness for hosting these events.

# WORKING ABROAD: FINDING INFORMATION ON BUILDING PRACTICE IN GERMANY AND FRANCE

CBE wishes to draw attention of practitioners in the construction industry, who have business links in Germany and France, or might plan them in future, to the providers of support and information for the construction industry in these countries. They are Fraunhofer Informationszentrum Raum und Bau (IRB) and Centre Scientifique et Technique du Bâtiment (CSTB). Both institutions are involved in the organisation of the CIB W102 2007 conference on Information and Knowledge Management - Helping the Practitioner in Planning and Building, which will take place in Stuttgart, on 16-18 October 2007. We believe that information available in English from the above organisations, with which CBE has established links, will be of interest to the organisations in the Scottish construction industry, which have or plan to establish business links in Germany and France.

## Fraunhofer Informationszentrum Raum und Bau (IRB) <http://www.irb.fraunhofer.de>

Fraunhofer IRB provides technical, planning and economic information from research and practice in civil engineering, architecture, building design, building law, town planning, housing, spatial planning and conservation. The organisation aims to be the central provider of information to the industry. In order to achieve this, IRB is cooperating with other service providers to connect the most important sources of knowledge, i.e. 45 German and 29 international organisations. The organisation has around 100 staff and its budget in 2005 was 7,100,000 Euros.

IRB staffs of engineers, architects and planners carry out the work of finding and evaluating specialist construction knowledge and then classifying it according to the following specialist fields:

- Building materials, physics and services
- Building pathology, maintenance and conservation
- Architecture, interior design, landscape design and planning
- Building planning and structural design

- Civil engineering
- Waste, soil, water
- Building industry and construction operations
- Building and planning law and contractual building law
- Town planning, spatial development and housing

For English speaking practitioners, IRB provides information in English language (look for the link 'English' on the home page of the website and all other web pages). IRB has five business units, which provide information to different target groups. The business units are as follows:

- Business Unit 1 - Interdisciplinary information on planning, building and research
- Business Unit 2 - Building in given contexts, building pathology and monument preservation
- Business Unit 3 - Construction technologies
- Business Unit 4 - Media services
- Business Unit 5 - FhG-Online

FhG Online is valuable for obtaining information via Internet. Fraunhofer-ePrints allows you to search and view electronic full-text publications published by the research institutes of the Fraunhofer-Gesellschaft. Access to this service is free of charge.

## Centre Scientifique et Technique du Bâtiment (CSTB) <http://international.cstb.fr/>

CSTB provides four complementary services: research, advanced engineering, quality assessment and the dissemination of knowledge. CSTB work focuses on buildings, their urban environment, services and the new information and communication technologies.

CSTB collaborates with contracting authorities, architects, research offices, manufacturers and entrepreneurs, and helps the French public authorities to define technical regulations and ensure the quality of buildings. CSTB is a State-owned industrial and commercial corporate,

placed under the administrative supervision of the French Ministry of Housing.

CSTB employs over 750 people, including over 350 engineers and research scientists. Its turnover is 66 million Euros, broken down as follows: 38%, evaluation and certification; 26%, State-funded research and development; 25%, scientific and technical consultancy; 7%, knowledge dissemination; 4%, others.

Following the creation of the EU's Construction Products Directive (89/106/EEC) and its application via European technical approvals, European standards and CE labelling, CSTB has become the French approval body for the construction sector.

CSTB is composed of eight departments, which deal with four major themes as follows:

- Society issues - Sustainable development; Safety, Structures, and Fire Performance; Economics and Social Sciences
- Structures and comfort - Acoustics and Lighting; Climatology, Aerodynamics, Pollution and Sewage Treatment
- Construction products and techniques - Envelope and Coatings; Hydraulics and Sanitary Equipment
- Information Technology industry - Information Technologies and Knowledge Dissemination

The above link to CSTB website provides information in English for the international audience. Other useful links:

**INTERBAT** (<http://www.interbat.com>): the building-sector portal, which aims to make it easier for professionals to access information relating to their professional activities;

**CE labelling** (<http://www.dpcnet.org>): the information site on the application of CE labelling within the framework of the Construction Products Directive;

**AFOCERT** (<http://www.afocert.asso.fr>): the information site on the certification of construction products.

# MEIKLEWALL: SCOTLAND'S FLOOD BARRIER PROJECT

Fiona Meikle (*right*), Chief Executive of Meiklewall Limited, has invented an unobtrusive flood relief system which can be installed along riverbanks, and remains concealed in an underground trough, until exposed to floodwater. When floodwater enters the trough via a gully, the buoyancy of the wall causes it to rise, unfolding the membrane sides and creating a flood barrier.

The Rising Membrane Flood Wall begins to extend and float up to stop overflowing into low-lying ground, homes and commercial properties. As the floodwater increases the wall continues to float up to form a barrier of up to 2 metres high. A colour coded warning system is clearly displayed on the wall with a green square for safe water level, orange circle for warning of a possible flood and a red triangle indicating that it is reaching maximum protection. When the river returns to its normal level, the wall will automatically reset to its original position in the riverbank. When not in use, the top of the wall can form a footpath.

It is suitable for use either along riverbanks prone to flooding or in flood plains where residential housing requires protection.

Fiona, who lives in Paisley was a victim of flooding in her home in 1994 when she and her neighbours were submerged under 12 feet of water. She spent several years campaigning and lobbying Westminster MPs to bring in a law to make flood prevention the responsibility of local councils throughout the UK. Her campaign culminated in the passing of the Flood Prevention and Land Drainage (Scotland) Act 1997. The Act requires Councils to assess watercourses for flood risk and where necessary take or enforce preventative action.

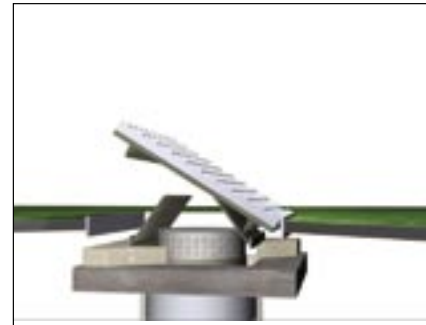
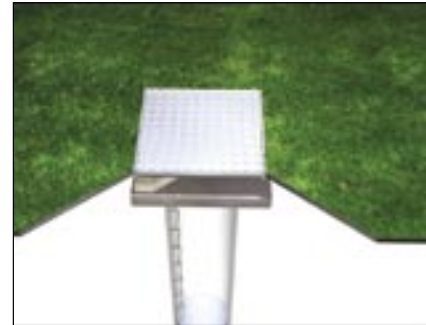
Fiona began to develop the concept of the floodwalls about seven years ago and in 2000 her proposal was awarded a SMART award which allowed her to take her design to "proof of concept" stage and to build a scale model for testing.



A SPUR grant was recently awarded to Meiklewall and together with funding from 10 investors, this has enabled a full-scale pilot project to go on site on the 6th November at Rothesay Dock, Clydeside. The Meiklewall Rising Membrane Flood Wall will be built there together with a Sewage Surge Prevention System also by Meiklewall. It is designed to fit into a standard manhole cover and prevents sewage escaping to the environment if the sewer surcharges. It prevents water entering the manhole during flood conditions.

You may have assumed after reading this article that Fiona is a civil engineer or has a construction background but no, she is however, a remarkable tenacious person who has put huge amounts of energy and creativity into her company to develop a range of products that will protect people and buildings in areas where there is a risk of flooding.

There is an opportunity for students and academics of either Engineering or Environmental Departments to see first hand this exciting construction at various stages at Rothesay Dock. It is planned that Craig Oliver from RJ McLeod (the civil engineers on the project) will be presenting the new flood walling system to students during the site visit which should last approximately an hour.



*Fiona Meikle (top left) and details of her flood protection system*

To book a visit please contact Dr. Kirsty Hunter of the Sustainability Centre Glasgow on 0141 331 8256/3716 or e-mail [khu@gcal.ac.uk](mailto:khu@gcal.ac.uk)

More details of the products can be found at [www.meiklewall.com](http://www.meiklewall.com)

# SPIRARE

## LOW COST ANTI-DAMP DEVICE FOR NEW AND EXISTING BUILDINGS



*The Anti-Damp-Nozzle-Nub™*

In a temperate country such as Scotland, dampness can be horrendous for most property owners causing damage to the structure and contents of buildings and affecting the health of occupants.

Malcolm Mulheron at Spirare (Latin for 'to breathe') self-proclaimed that the "Anti-Damp-Nozzle-Nub" is an environmentally friendly and cost effective way to combat this problem.

The device is 25mm in diameter, fitted in the centre of a brick to alleviate dampness in buildings. It is designed to attract the moisture that would normally stay in the walls causing dampness, eroding plaster and brickwork and disperses it into the atmosphere in the form of vapour.

The device can be used in both new and existing buildings to treat dampness, and reduces condensation, fungi and mould growth as well as there being health benefits associated with the product. A three-bedroom home costs approximately £100 for installation of the nozzle system.

The product received an international patent in February 1997 and therefore could potentially reach a worldwide market. The National Physical Laboratories and the British Board of Aggrement have also approved the nub system. Through the development of the product Malcolm has been involved with the following universities; Glasgow, Strathclyde, Dundee, Stirling and Paisley University who built walls for testing in the Scottish Construction Forum Demonstration Project where it was proven that the nubs were a successful system.



*The Anti-Damp-Nozzle-Nub™ inserts, which are 22mm (nominal diameter) by 85mm long, are placed in the holes drilled into the bricks.*

Both Glasgow City Council (GCC) and South Lanarkshire Council (SLC) have also been involved in the development of the product. GCC involvement was through the Suppliers Development Programme and SLC have identified housing with problems to trial the product further. The new Housing Health and Safety Rating System has a lead-in time of about one year for local authorities to rectify damp housing so it is therefore becoming an important issue.

Spirare are looking for strategic partners (established manufacturers) in the UK who can be sole distributors of this product to assist Spirare in getting the product on the market. If you are interested in finding out about the "Anti-Damp-Nozzle-Nub" please email Malcolm at [malcolm@spirare.co.uk](mailto:malcolm@spirare.co.uk)

# AN OVERVIEW OF EXPERTISE AND RECENT RESEARCH AT:

**School of Built and Natural Environment, Glasgow Caledonian University  
Department of Architecture, Strathclyde University  
Mackintosh School of Architecture, Glasgow School of Art**

Expertise	Research projects/publications/exhibitions since 2000
<b>Architectural and Urban Theory, History and Design</b>	
Architecture as Practice	The Inhabited perimeter and the Inclusive Room Sticks, stones and the bones of a concept Moore Clark Studio and Waddell House Managing the Creative Process Something out of the Ordinary, in Graham Square: New Housing in Glasgow Market place: McKeown Alexander at Graham Square
History of Architecture and Urban Design	The Tradition of the Dense City. The Public Space. Berlin as a Capital City 1900-2000 Phenomenology of Urban Space in New Urban Areas
20th Century Urban Design	Culture of Urbanity: Planning Dense Cities in the 20th Century The Reformed Urban Block in the Early 20th Century Metropolis Representing the State. Capital City Planning in the Early Twentieth Century
Learning and teaching architecture	
Architectural design	
Design Management	Design Management and Practice
Gillespie Kidd & Coia Architects	Curating the exhibition on Gillespie Kidd & Coia Architects, to be held in 2007 at the Lighthouse
Alexander Thomson: urban architecture (housing, commercial, churches)	
Renaissance cities	
Urban Morphology (Venice, Rome, Glasgow & gridirons)	
Urban development: from the 'garden city' to modern city	
20 <sup>th</sup> century housing	
Post-war architecture	
Post-war Modernism in Britain	
Architectural Design Theory and Creativity, Use of the CAD in the design studio	
Nineteenth-Century French Architecture; Architecture and Commerce in Paris, 1855-1914	The Department Store in Paris, 1855-1914
French Art Nouveau Architecture and Design	
Liturgy in Architecture (Roman Catholicism and Vatican II)	'Churches for a Changing Liturgy: Gillespie, Kidd & Coia and the Second Vatican Council'

Expertise	Research projects/publications/exhibitions since 2000
Site-based practices (installation, intervention, performance)	The efficacy of site-specific interventions/events as a means of debating and critiquing conceptions and perceptions of the built environment
Theatre design and performance	
Digital media and projected imagery in relation to the built environment	
Theories of space and place	
Part time modes of study	
Interdisciplinary interaction in design	The INTERACT project
Architectural theory and practice, Sutherland and Hussey, McKeown and Alexander	
Integration of sustainability into studio practice	

## Sustainable built environment Sustainable planning and urbanism

Regeneration of housing	
Urban regeneration (Paris, Berlin, Rotterdam, Amsterdam)	
Urban Design for Sustainability	Urbanising Suburbia
Sustainable urban housing	
Sustainable Urban Environment	Sustainable Urban Environment: Metrics, Models and toolkits for Whole Life Sustainable Urban Development, The Glasgow Sustainability Centre
Use of GIS in environmental decision-making	
Sustainable construction, straw bale housing and energy efficiency	
Urban renewal and community planning	
Housing and public administration	
Sustainable urban regeneration	Castlemilk Windfarm Sustainable co-housing
Local economic development	
Vehicle pollution in city streets	

## Social Issues

Community participation in planning decisions	
Sustainable co-housing for older people	
Fuel Poverty and Excess Winter Deaths	
User participation in design	An evaluation of Computer Aided Design as a method for enabling user participation in housing design - a summary of findings
Ageing environments, Designing for Dementia	The Challenge of Age Just another Disability
Traditional settlements and squatter housing	United Nations Development Programme Mission for the Application of Technology to Urban Renewal

Expertise	Research projects/publications/exhibitions since 2000
<b>Sustainable buildings, technologies and materials</b>	
Sustainability in Architecture	Sustainable Building Design and Renewable Energy Strategies for East Govan and Ibrox Phase One (Proposed Housing Development Development of a Sustainable Building Design Management System
Building technology	
Using timber in structures	
The design of low allergen/toxin/energy/carbon dwellings	Housing and Asthma
Building integrated wind turbines	Wind turbines on multi-storey buildings: a pilot project
Low Energy Design	Priesthill – new low energy housing project for Glasgow City Council Linthouse Development Options Appraisal Photovoltaic-powered dynamically insulated breathing wall Glazed roof preheat spaces Solar Towers in Glasgow (STinG)
Monitoring and evaluation of energy efficient and environmental design	BTS Phase 1: Low level monitoring programme of community heating system in rehabilitated tenement building for Govan Housing Association, SAP Survey For Communities Scotland
Dry-rot detection	Development of a polymer based dry-rot detector and novel treatment regimes
Environmental impact of durable materials including contribution of re-used materials to more sustainable constructions	
Glass recycling technology	
Church renovation, restoration and maintenance procedures	
Moisture problems in historic and heritage buildings	Engineering Historic Futures
Computational Fluid Dynamics and Refrigeration	

**Environmental technology and management  
Environmental management systems**

Environmental management system	Development of a coherent Environmental Management System Development of an Environmental Management System FOR Victoria Quay
ISO 14001	
Environmental management and planning	
Implications of environmental legislation on business practices and on environmental standards, such as CEN or ISO 14000	
Environmental Impact Assessment	
Environmental Impact of the Health Care sector and its waste management	
Waste water treatment	
Solid waste management, composting and anaerobic digestion	Stability study and chemical analysis of biowaste Investigation of anaerobic digestion of MBT treated waste

Expertise	Research projects/publications/exhibitions since 2000
<b>Waste management</b>	
Waste management	Treatment of Organic Wastes Strategic Planning for Waste Facilities in Scotland IPPC Application for Glasgow City Council: Polmadie Hazardous Waste Incinerator)
Resource Use / Waste Minimisation	Remade Scotland - Developing Markets for Recycled Materials
Waste water treatment	
Management of biological wastes	
Landfill technology and waste management	
Engineering aspects of waste management	An Economic Appraisal of Collection Systems for Waste Electrical and Electronic Equipment (WEEE)
Landfill Engineering	The Monitoring and Statistical Evaluation of Shallow Landfill Test Cells
<b>Sustainable energy</b>	
Testing and analysis of the thermosyphoning solar collector systems to determine heat transfer and airflow characteristics	
Heat transfer in solar collectors	Feasibility study for a collar boat
Wind farms	Castlemilk Windfarm
Moisture problems in historic and heritage buildings	Engineering Historic Futures
Performance of Photovoltaics in Buildings	
Building integrated wind turbines	Wind turbines on multi-storey buildings: a pilot project.

**Air and water quality**

Indoor air quality: Asthma and Buildings,	Indoor air quality and asthma The toxic indoor environment - are our buildings killing us? Domestic ventilation rates, indoor humidity and dust mite allergens - are our homes causing the asthma pandemic? Indoor air quality, ventilation and health
Indoor Air Quality	
Environmental impact assessments for air and water quality	Advanced Tomographic Sensors for Industrial Multiphase Imaging
Water pollution	
Air quality management	
Air quality modelling	Wind Speed Study within Glasgow Queen Street
Air pollution prevention and control systems for urban air quality	
Sensor technology for the built and natural environment	Sensor Array Technologies for electronic nose design
Indoor climate and health	
Indoor climate and health, microbiology of mould and mites in housing, VOCs etc.	
Impacts of Climate Change on health risks in buildings	

Expertise	Research projects/publications/exhibitions since 2000
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#### Air and water quality cont.

Sick building syndrome and sick environment syndrome diagnostics	
Health, safety and environmental issues and the workplace	

#### Project management

Project briefing	A best practice framework for systematic identification and precise representation of client requirements in the briefing process
Project Management processes, tools & techniques	Planning, monitoring and control of Projects Project Methodologies, Scope and Integration Management; Leadership, Communication and Teamwork in Projects; Configuration Management; Human Resources Management

#### Knowledge management and Organisational Innovations

Knowledge management	Knowledge management and Intellectual Capital assets in diverse project management, environments Knowledge Management for Sustainable construction competitiveness Knowledge Mapping and Bringing about Change for the Sustainable Urban Environment Mapping Knowledge on Controlling and Avoiding Healthcare Acquired Infections (HAIs)
Innovations in Organisations	Sustaining Organisational Innovations for Improved Competitiveness Simulator for Innovations (SIN)
Education and training for improved performance in small and medium enterprise construction	An approach for knowledge management for SMEs
Developing skills for continuous improvement in public services	Investigating a web based modular approach to developing skills for continuous improvement in public services

#### Building performance

Performance measurement	The performance measurement of building
Building refurbishment	A study to develop a good practice framework for client retail refurbishment programme
Fire risk engineering	
Crystallisation processes in capillary porous materials and its destructive effects	
Durability and long term performance of building partitions	
Durability and prediction of degradation during the service life	
Coupled processes of heat and mass transfer in materials and building structures together with the associated processes (such as phase transition 'water to ice', water vapour condensation and surface phenomena	
Moisture problems and ventilation of roofing	
Thermal bridging in highly insulated structures	
High performance ceramic and cementitious materials with improved resistance to alternating environmental conditions	
Non-contact methods of monitoring condensation process	Application of Laser Speckles for detection of surface condensation

Expertise	Research projects/publications/exhibitions since 2000
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#### Building performance cont.

Multicriterion optimisation in a design process of cementitious composites and non-contact methods of monitoring condensation process	Optimisation of composite materials
Laser cleaning of building surfaces	Laser Cleaning and Modification of Surface Layer
Refurbishment, modernisation and maintenance management	
Building survey reports and expert witness regarding workmanship and quality of buildings	
Property evaluation	

#### IT in architectural design and the construction industry

Architectural Computing	Virtual Reality wheeled mobility
Related to the objectives of International Alliance for Interoperability: provision of information on building elements (materials, costs etc.)	
Modelling energy efficiency based on data on building occupation, movements of occupants etc.	
CAD	
Computer systems for environmental and safety modelling	
IT in construction and design	
Artificial intelligence applications in engineering design	Development of an Integrated Ground Modelling System, Development of CAD System for Tree House Design
Information technology and its impact on team-working, communication and productivity	
Environmental Software Development	
Electronic document management systems	Developing the Sysdox document management system into a commercial product Development of a snagging system on EDMS and handwriting application based ANOTO
Urban visualisation	West Dumbarton Multimedia Development
Use of CAD for large scale user participation	Visual Cities Gallowgate Development Project

#### Structural Engineering

Structural Engineering; Eurocodes in building design	
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#### Water Engineering

Maritime Engineering, Ports and Harbours	Patented: Dock-gate operation system Patented: Flood Prevention System: Tension Membrane Water Retaining Structure
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#### Geotechnical Engineering

Geosynthetics	
Foundation engineering	
Remediation of contaminated land	

Expertise	Research projects/publications/exhibitions since 2000
<b>Geotechnical Engineering cont.</b>	
Ground engineering including soil (and marginal soil) stabilisation/solidification and ground remediation	
Ground Monitoring and Ground measurement of Micro-movements, using conventional and GPS techniques	
Site investigation, in-site and laboratory testing	
Geotechnical design of various types of foundations	
Geospatial Engineering	

<b>Construction Management</b>	
History of quantity surveying profession	
Construction Law	
Strategic management in construction	Re-engineering construction using payment systems (Recoups)
Strategic management in construction	
Management innovation (process, product, technology, service and market) in construction	
Lean and agile management in construction	
Benchmarking and key performance indicators	
Skills, knowledge and competencies for construction management	
Micro-enterprises	
Team-building	
Team-working	
Total Quality Management	Improve the Quality of Service provided by Use of QFD, QMS and AMS
Human Resource Management	
Culture in construction	Delivering Cultural Change in the Construction Industry
Adjudication legislation	
Work Life Balance in the Construction Industry	Work Life Balance in the Construction Industry
Workforce Composition	
Contract Management	

<b>Construction procurement and economics</b>	
Procurement: Corporate social responsibility	
Construction procurement practices (including partnering, prime contracting, PFI, design and build)	Procurement code for the NHS Scotland Property and Environment Forum Executive Economic Profiles of PFI Projects in Scotland
Construction procurement practices	
Construction procurement - risk management	Standardised framework for risk assessment and management of Private Finance Initiative projects
Building procurement systems	Re-engineering Construction using Payment Systems (ReCoUPS)

Expertise	Research projects/publications/exhibitions since 2000
<b>Construction procurement and economics cont.</b>	
Building contracting systems	Re-engineering Construction using Payment Systems (ReCoUPS)
Construction inventory management - supply chain management	
Construction cost estimating models	
Construction prices - formation, modelling and prediction	
New procurement methods in the public sector and partnerships of the private public and private sector in the regeneration of urban communities	Standardised framework for risk assessment and management of Private Finance Initiative projects
Urban renewal and community planning; Housing and public administration	
Risk, quality, health & safety management in diverse project environments	
Construction inventory management - supply chain management	
Construction value management: value systems and value structures	
Life cycle costing	
Best value	The measurement of best value Application of Value Management techniques to a partnered housing project
Construction economics - construction marketing (nature, management, modelling and prediction)	European Construction Market Review: Scoping study Scottish Building Futures
Construction cost estimating models	
Construction prices - formation, modelling and prediction	
Transaction cost economics in relation to construction temporary multi-organisations	
Economic structure of the construction sector including economic forecasting, construction productivity and financial management, risk management	

<b>Health and Safety</b>	
Heights safety and fall prevention when working at heights	Prevention of falls from heights in construction Safety decking as a passive means of fall prevention/arrest An Evaluation of the Practical Usefulness of Current Fall Prevention and Protection Methods when Working at Heights
Behavioural Safety	Scotland's Fatal and Major Accident Experience
Safety Planning	An Investigation of Work Process Planning for Safety and Health in Construction
Safety Management Systems	
Risk Assessment	
CDM Regulations including Designer involvement	Integration of the CDM Regulations with other supervisory and managerial practices
Asbestos Management	
Managing Innovation in Facilities Management	

Expertise	Research projects/publications/exhibitions since 2000
<b>Facilities, Property and Refurbishment Management</b>	
Strategic Capital Planning and Facilities Management	
Property investment and management; Computer mass appraisal; Property appraisal theory	Feasibility Study of the application of computer mass appraisal in UK Developers' and owners' behaviour and perception in residential property market
Building services; Cleanliness in the health industry	
Managing Refurbishment Projects – Skills, and competencies; Health & safety in Refurbishment; Planning, control and decision making processes (GCU)	Planning and Control in the Shipping and Construction Industries Health and Safety in Refurbishment Projects with Structural Instability Decision Support System for Health and Safety in Refurbishment Projects Skills, Knowledge and Competencies for Managing Refurbishment Projects





## BESPOKE CONSULTANCY AND RESEARCH SERVICES

There are many areas where specialist advice or research from our academic staff can be offered, and CBE acts as a channel to allow businesses to access this, for example:

- **for specific projects** - are you working on a project which requires you to outsource advice from a specialist?
- are you **bidding for a project** and need specialist advice for input to the bid or **prequalification questionnaire**?
- would you like to discuss having **specific research** carried out which would give you a **competitive advantage** or **increase your reputation** as a specialist in a particular market?

We would be delighted to discuss your company's requirements and can also assist by:

- Developing bespoke consultancy sessions on the topics you require and delivering them to your staff in-house.
- Delivering seminars from the CBE series to your staff in-house.
- We welcome your suggestions for topics for our regular weekly seminar series.

If you are interested in finding out more about any of the above, please contact Anne Blacklock, Business Development Manager, on 0141 273 1411 or email: [anne.blacklock@gcal.ac.uk](mailto:anne.blacklock@gcal.ac.uk)

For a complete listing of all the expertise available and recent research at each of the institutions please refer to the CBE website [www.cbe.org.uk](http://www.cbe.org.uk)



# SUE MoT CONFERENCE 2007

INTERNATIONAL CONFERENCE ON WHOLE LIFE URBAN SUSTAINABILITY AND ITS ASSESSMENT

27-29 JUNE 2007  
GLASGOW CALEDONIAN UNIVERSITY

Sustainability is arguably the challenge of our time. There is growing recognition that our current development path is now threatening the natural systems upon which our civilisation ultimately depends. Sustainable urban development requires a new way of doing things - a way which reduces environmental impact while at the same time promoting widespread economic and social progress. The buildings and supporting infrastructure of our towns and cities contribute positively to people's quality of life but often use materials, produce waste and release CO2 significantly in excess of that which our land, water and climate can continue to accommodate. Many urban centres are still blighted by crime and poverty: poorly designed developments have negative effects on the health, welfare and economic prospects of communities

Throughout the world urban decision-makers need robust and comprehensive metrics, models and tools to help them assess the extent to which their choices are leading to urban developments that address these issues and contribute positively to sustainable development.

This conference aims to bring together academics, researchers, built environment professionals, tool developers, policy makers, and other stakeholders who are involved in urban sustainability to discuss the advances and challenges in the provision of such metrics, models and tools. Accordingly, the overarching theme of the conference is - Sustainable Urban Development: Meeting the Challenges of Whole Life Assessments.

We encourage submission of papers relating to this theme, especially on and around the following areas:

- Integrated approaches to assessing urban sustainability
- Design tools for sustainable buildings
- Economics of urban sustainability
- Environmental appraisal
- Environmental justice
- Full cost accounting
- Impact assessment
- Knowledge management for sustainability assessment
- Life cycle assessment
- Multi-criteria decision making tools
- Social appraisal
- Social capital and community sustainability assessment
- Stakeholder participation
- Stakeholder values
- Sustainability appraisal of buildings
- Complex systems approaches to urban sustainability
- Urban design for sustainability
- Sustainability and the different approaches to urban planning
- Urban sustainability barriers, enablers and drivers
- Urban sustainability metrics and indicators
- Deliberative democratic participation for urban sustainability
- Assessing urban sustainability in a "Risk Society"
- Common units for measuring urban sustainability
- Case studies for urban sustainability



*Sustainable materials at the conference venue*

For further information, including details regarding submissions and registration, please visit:

[www.sue-mot.org.uk/conference](http://www.sue-mot.org.uk/conference)

# CBE FORTHCOMING EVENTS

Below is a list of forthcoming events that will be held by CBE. Bookings can be taken by email, fax or telephone. Please refer to our contact details at the bottom of the page. Alternatively please visit our website [www.cbe.org.uk](http://www.cbe.org.uk) and complete the Online Booking Form. Further information on these events will be published on the CBE website prior to the event. A special offer is available for your organisation to make a block booking for our regular lunchtime seminar series. **10 bookings will cost just £250, a saving of £100** as the standard cost for each seminar is £35. The 10 bookings can be redeemed in any combination against any seminar. Registration and networking buffet lunch are at 12.00 followed by the presentation at 12.30. The seminars close at 14.00 (unless otherwise stated)



<b>Fri 24th November</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Chris Dyson, Chris Dyson Architects	<b>CBE events in 2007</b>	<b>Tues 13th February</b> <b>Whole Life Costing of Sustainable Design</b> Prof. John Kelly, Glasgow Caledonian University
<b>Tues 28th November</b> (12.00-16.30 hrs) <b>Historic Scotland's half-day workshop</b>	<b>Thurs 11th January</b> <b>Investigations Into Weathertightness Of Windows In Multi-storey Dwellings</b> Dr Tim Sharpe, Mackintosh School of Architecture	<b>Tues 20th February</b> (17.30-18.30 hrs) <b>FREE LECTURE - Borders and Boundaries: Public Space at the Edge</b> Richard Sennett, London/New York
<b>Thurs 30th November</b> <b>Regeneration and Place Making</b> John Lord, Yellow Book	<b>Fri 12th January</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Simon Hudspith, Panter Hudspith Architects	<b>Fri 23rd February</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Prof Alex Lapunzina, University of Illinois
<b>Fri 1st December</b> (15.00-16.00 hrs) <b>FREE LECTURE - The Neo-Tudorists and their Enemies</b> Gavin Stamp, Cambridge University	<b>Fri 19th January</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Regina Stephan	<b>Fri 2nd March</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Louisa Hutton, Sauerbach Hutton
<b>Tues 5th December</b> <b>SBCC 2005/2006 Contracts</b> Phil Morrison and Kirsteen Milne Sample Fraser	<b>Tues 23rd January</b> (13.00-17.30 hrs) <b>IVM half day conference</b> Prof. John Kelly (GCU) and Michael Graham (IVM Institute)	<b>Friday 9th March</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Cindy Walters & Michal Cohen, Walters & Cohen
<b>Fri 8th December</b> <b>FREE LECTURE</b> Mark Cousins, Architectural Association	<b>Fri 26th January</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Prof. J Blackie, Strathclyde University	<b>Tues 17th April</b> <b>Glimmers In Limbo: Site-specific Intervention As A Strategy For Shaping Conceptions Of The Built Environment</b> Minty Donald, Mackintosh School of Architecture.
<b>Thurs 14th December</b> <b>What is geospatial engineering?</b> Martin Cullen, Glasgow Caledonian University	<b>Thurs 1st February</b> <b>Designs On My Place; Involving Users In Design</b> Anne Cunningham, The Lighthouse	
<b>Tues 19th December</b> <b>15 years of Richard Murphy Architects</b> Richard Murphy	<b>Fri 2nd February</b> (15.00-16.00 hrs) <b>FREE LECTURE</b> Walter Menteth, Walter Menteth Architects	

LUNCHTIME SEMINAR 12-2PM

FREE LECTURE



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