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OXFORD  
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School of the Built Environment

## INTRODUCTION & OVERVIEW



Welcome to the first issue of the twice yearly OISD Newsletter! The Newsletter is designed to keep our 'research community' (within both OISD and the School as a whole) up-to-date with our latest activities and forthcoming events. It also informs our research partners of activities and outputs within the Institute that they might not have encountered so far. In this newsletter you will be able to read about our latest research in the 'Briefings' section and learn more about our specialist research and industry links in the 'Comment' and 'Counterpoint' sections.

The last year has seen a step-change in acknowledgment by government, industry and individuals of the crucial role that the built environment plays within the global sustainability agenda. Business-as-usual is no longer an option for those constructing, developing, occupying and managing buildings, and the built environment professions have a key role to play in helping to realise the sustainable future we all want to create.

As an example of this we have recently completed research for the Royal Institution of Chartered Surveyors (RICS), working with Georgia State University and the University of Melbourne. This examined the way in which RICS members (or chartered surveyors) are engaging with the sustainable development agenda and the extent to which they are using available tools

and information sources to undertake their work. The results suggest that although sustainability is highly relevant to surveyors' work, a lack of knowledge and expertise are making it more difficult for sustainability tools and other information to be used effectively. The RICS is, however, not alone in seeking to understand its members' needs more clearly. In the built environment professions new initiatives have also been developed to 'mainstream' sustainable development in professional practice. For example, in 2004 the Engineering Council UK changed its registration requirements to include sustainability, which means that all chartered engineers must now demonstrate commitment and practice to sustainable development, and the RICS have now also introduced a new set of mandatory competencies for membership. This includes sustainability and more recently, a 'Sustainability Policy'.

Research can help us understand professional requirements more clearly, but it can also extend and challenge professional knowledge and understanding with ground-breaking research. When John Glasson and Mike Jenks founded OISD in 2004, the clear intention then was to produce a cutting edge research institute that would bring together a range of disciplines to advance knowledge and practice in creating sustainable environments. Today, with more than 100 research and academic staff working within and across disciplines, some 89 PhD students, and an annual income-earning capacity of £1.6m, the Institute is clearly on an upward trajectory. We have seen a rising income and this has been underpinned by the successful work we are undertaking as part of our Higher Education Innovation Fund programme.

But we also recognise that to continue to be successful we must evolve, and ensure that our research answers the questions that really matter. These include:

- How can we develop robust metrics systems to measure carbon footprints for buildings and cities?
- How can compact cities provide a template for sustainable development?
- How can we create sustainable, not transient, communities on brownfield sites?
- How can we assess environmental impact to create a sustainable future?
- How can new technologies advance sustainable building design?
- How can we design inclusively for all future generations, which includes an ageing population?

These questions will also be addressed in a major conference we are organising for January 15 2008, (*Change to Survive: Creating a 21st Century Sustainable Built Environment*), designed to showcase the cutting-edge research being undertaken at the Oxford Institute for Sustainable Development (OISD) and School of the Built Environment (SoBE) in Oxford Brookes University, relating to CSR, sustainability and climate change adaptation and mitigation. For further details see the OISD website ([www.brookes.ac.uk/schools/be/oisd/](http://www.brookes.ac.uk/schools/be/oisd/)) or contact Karen Hughes on (tel: 01865 483560, e-mail: [khughes@brookes.ac.uk](mailto:khughes@brookes.ac.uk))

Prof. Tim Dixon, Director of the Oxford Institute for Sustainable Development (OISD)

Prof. Ray Ogden, Assistant Dean (Research), School of the Built Environment

## GUEST COLUMNS

## COUNTERPOINT

## Industry Expert and Academic Response

The leading international Steel manufacturer Corus has established a major research and development facility associated with OISD.



Dr. Graeme Peacock writes:

*Corus is one of the largest steel companies in the world with global interests in all sectors of the construction industry. It is essential that a company of the standing of Corus maintains intellectual and agenda setting leadership in its markets with high quality and leading edge products, and that it plays a major role in sustainable construction. This is a key rationale of the Centre.*

*Corus has had a close relationship with Oxford Brookes University for over 15 years with the University being centrally involved in the development of new technologies such as light steel framing, modular construction and building envelope systems. The relationship between Corus and the University is now an exemplar of how industry and academia can work closely on pure and applied research and knowledge transfer. The juxtaposition of*

*commercial imperatives and academic capability leads to well focused research agendas with the strong anticipation that the results of academic research today are evident on building sites tomorrow.*

Dr. Graeme Peacock, Manager of Market and Business Development, Corus Colors.



*Our work with Corus and the UK Steel Sector continues to*

*grow with the University now one of the key strategic research partners of the sector. Applied research is underpinned by a strong pure research stream that embraces subjects often unusual within the Built Environment area. The team is truly inter-disciplinary with a rapidly developing international reputation. More importantly however it has a strong track record of delivering positive change by working alongside global industry.*

Prof. Ray Ogden

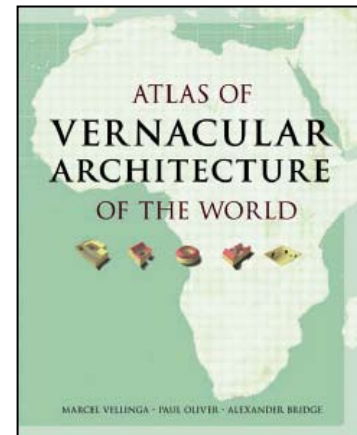
## COMMENT

## Lessons from the vernacular

*The International Vernacular Architecture Unit (IVAU) advances recognition and understanding of the importance of vernacular architecture worldwide. By focusing on the interdisciplinary and cross-cultural study of vernacular architecture traditions, it promotes educational and research projects that extend the geographic, thematic and methodological scope of the field.*

*One recent example is the AHRC-funded Atlas of Vernacular Architecture of the World, which enhances our understanding of the*

*vernacular of the world by mapping aspects - building forms, materials and technologies, cross-culturally and comparatively.*



*A key focus of IVAU is to study how vernacular traditions relate to sustainable development. In an increasingly dynamic and interrelated world in which concerns about the meaning of cultural heritage, depletion of natural resources and impacts of climate change continue to grow, the vernacular is increasingly identified as a source of architectural know-how, a pool of knowledge, skills and practices potentially more environmentally sound than their modern equivalents. It is vital that this should be acknowledged, studied and understood by academics and professionals, and integrated into contemporary building design and practices.*



Dr. Marcel Vellinga (mvellinga@brookes.ac.uk) from International Vernacular Architecture Unit in Architecture, Culture and Technology Group

## BRIEFINGS

### The Corus Centre for the Building Envelope

Founded in October 2005, the Corus Centre for the Building Envelope, an industry sponsored part of OISD, has grown rapidly with an expanding portfolio of work in low energy design and related areas. It has a fast developing national and international reputation for agenda leadership within the steel sector. With major skills in the areas of building physics, building construction, sustainable design and construction economics, it is a powerful new resource, supporting major product and process innovation, and capable of achieving far more rapid development cycles than previously possible. The speed and sophistication of this process are essential for the UK and Europe to compete effectively in the rapidly changing global market, and to deliver low carbon engineering solutions essential to meeting the climate change agenda.

The Centre is independent but collaborates closely with industry. It has a carefully considered cross-cutting ethos that integrates commercial reality with serious academic endeavour to deliver well founded commercialisable solutions. The Oxford Brookes University and Corus relationship is widely regarded as being one of the most successful between academia and industry in the UK, developed over many years of close and productive working. This latest development heralds an additional dimension.

The Centre, encompassed within the Technology group of the OISD, will develop and expand the already

successful research and consultancy portfolio of the group, which in addition to fundamental research, is committed to the application of new ideas. The group works regularly with leading practices, research institutes, and government and industry partners in the UK, Europe and internationally.

The Centre represents a bold highly successful and innovative model for co-operative working. It places Oxford Brookes at the heart of the steel sector's strategic research and development.



Two views of the projected building

A product of research work in the Corus Centre for the Building Envelope is the low energy corporate headquarters building for Corus Colors in Shotton, near Chester. The principles of the design were to accommodate 180 Corus Colors staff in an innovative building, a showpiece for the newest products and methods, and setting new standards in sustainability and low carbon emissions. Prof. Ray Ogden of the Corus Centre for the Building Envelope worked with the design team of Adrian James Architects, Integral Structural

Design, Troup Bywaters & Anders and Willmott Dixon.

Contact: Prof. Ray Ogden (rgogden@brookes.ac.uk) from Architecture, Culture and Technology Group

### Strengthening the carbon-counting research in OISD

Recently, a series of research grants and invited international keynotes have expanded and strengthened the carbon-counting research capability within OISD: Architecture. This is largely underpinned by the award-winning GIS-based model called DECoRuM®, developed by Dr. Rajat Gupta, which has become a toolkit for carbon emission reduction planning in cities (see: [www.decorum-model.org.uk](http://www.decorum-model.org.uk)).

Homegroup has commissioned Dr. Gupta to develop the first 'toolkit' to assess the carbon impact and financial viability of achieving levels 4, 5, and 6 of Code for Sustainable Homes for a representative sample of new-build homes. He is also working with TEN Life style Management Group on £150,000, 3 year project to further develop the DECoRuM® model to measure, model, map, benchmark, reduce and manage carbon emissions from 17000 homes in London. Smita Chandiwala, a Researcher in carbon-counting is working on these exciting new projects. Research has also begun on a 3.5 year EPSRC Case project which aims to assess, the potential of ground source heat pumps in reducing carbon emissions from UK housing in a changing climate. The project, worth about £85k, is undertaken in collaboration with Ice Energy, well-known installers of heat pumps. The PhD studentship

attached to the project has been awarded to Robert Irving.

Dr. Rajat Gupta ([rgupta@brookes.ac.uk](mailto:rgupta@brookes.ac.uk)) from Architecture, Culture and Technology Group

### The Urban Buzz Programme

The Oxford Institute of Sustainable Development, under the leadership of Professor Mike Jenks, has been appointed as Independent Evaluator on a major new £5 million Higher Education Innovation Fund (HEIF 3) – funded initiative ‘UrbanBuzz: Building Sustainable Communities’. Dr. Carol Dair has been appointed as the research fellow to carry out the evaluation.

UrbanBuzz is a complex 2 year joint venture between UCL and the University of East London, involving over 120 partner organisations from finance, management, design and implementation and includes residents and regulators. It is a practical, evidence-based programme designed to share knowledge, stimulate new thinking and make the ideal of building sustainable communities a reality. Its overall aim is to increase knowledge on how to build sustainable communities. Weak knowledge transfer associated with building sustainable communities has been identified as significant in inhibiting delivery. The lack of the right knowledge in the right places to inform development is thwarting delivery. Through empirical investigations across live development projects in London and the South East, the programme will identify problems and provide and test solutions. As the Independent Evaluator our task is to evaluate the success of the

UrbanBuzz programme in achieving its sustainability objectives, in the effectiveness of knowledge transfer, and of the UrbanBuzz processes through its sponsorship of projects, innovation and business fellows, courses, and networks. OISD will provide the programme with evaluation plans and monitor their progress and report on a regular basis to the Programme Board. This work is a vital part of the whole programme.

Contact: Dr. Carol Dair ([cmdair@brookes.ac.uk](mailto:cmdair@brookes.ac.uk)) from Sustainable Urban Environments Group

### Planning for biodiversity and climate change: the MACIS project

A kick-off meeting for OISD’s latest project on planning for biodiversity and climate change was held in Lund, Sweden, in November. Entitled MACIS (Minimisation of and adaptation to impacts of climate change on biodiversity), the project builds on the BRANCH project (see be vol. 7, page 4: <http://www.brookes.ac.uk/schools/be/newsletter/media/be007.pdf>) and several other projects involving Elizabeth Wilson and Jake Piper over the past five years. Funded for two years by the EU, the MACIS programme brings together eleven research institutions across Europe, plus one from South Africa.

For further details see: [www.macis-project.net](http://www.macis-project.net)

The objectives of the MACIS programme include:

- to develop a series of biodiversity and habitat models that address biodiversity impacts and can

- calculate consequences of projected changes in climates, and assess probable future impacts on biodiversity;
- to identify climate change adaptation and mitigation measures with significant potential to adversely impact on biodiversity (growing biomass for fuel may be an example), and identify habitat types and species groups most at risk;
- to identify policy options, particularly at EU and regional level, to prevent and minimise negative impacts from climate change, climate change adaptations and mitigation measures.



OISD’s contribution to the BRANCH project led to the publication by Natural England of Spatial planning for biodiversity in our changing climate in 2006 (see [www.naturalengland.gov.uk/publications](http://www.naturalengland.gov.uk/publications): R677). This report explores policy and measures for adaptation to climate change in NW Europe, including wildlife corridors, coastal planning and green infrastructure in development areas.

Contact: Dr. Jake Piper ([jake.piper@brookes.ac.uk](mailto:jake.piper@brookes.ac.uk)) from Environmental Assessment and Spatial Planning Group

**Path dependence, territorial innovation systems and the absorptive capacities of English city regions**

Prof. James Simmie, Drs. Juliet Carpenter, Ellie Jupp and Andrew Chadwick, OISD, and Prof. Ron Martin, Cambridge University, have just won a new research project funded by the National Endowment for Science, Technology and the Arts (NESTA). Total funding is £125,000 over 2007-2008. The starting point for this research is that evolution of spatial economies is path-dependent over time. As a result of the different pathways taken by different spatial economies, the economic performance of UK regions and their major cities has been diverging rather than converging over a long time period. The research team proposes to test the hypothesis that a key reason for this finding is that the path dependence of city regional economies rests on different absorptive capacities, defined as their *“ability to identify, assimilate and exploit knowledge from external sources”*, in the context of distinctive local territorial innovation systems. This research is closely linked with the emerging UK city regions and innovation policy agenda, and will lead to suggestions for actionable policy principles for branches of government concerned with urban and regional innovation policy.



Contact: Prof. James Simmie (jsimmie@brookes.ac.uk) from Urban Policy and International Development Group

**Real Estate & Construction (OISD-ILM) Research Team Wins Research Funding for Sustainable Offices Project**



A research team comprising Prof. Tim Dixon, Dr. Claire Roberts, Dr. Sally Sims and Gina Ennis-Reynolds (with Prof. Nick French and David Shiers) has won £49, 500 (+ VAT) from the Investment Property Forum (IPF) to examine the demand for sustainable office property in



the UK. The one year project, starting this December, will provide a detailed analysis of occupier demand for sustainable offices in the UK, focusing on actual demand as represented by acquisition decisions, as opposed to perceived demand represented by listed requirements. The project will use telephone interviews and case study/interview-based research, and seeks to define occupier’s understandings of sustainability. Its central aims are to identify occupier demand for sustainable offices in the UK, and to explore the post-occupation experiences of sustainable commercial building occupiers. This research for IPF (which is represented on the RAE town and country planning panel) builds on recent work by Tim Dixon, Claire Roberts and Miles Keeping (King Sturge) for the Forum on the

impact of the EU Energy Performance of Buildings Directive on commercial investment property.

Contact: Prof. Tim Dixon (tdixon@brookes.ac.uk) from International Land Markets Group

**A Manual for Sustainable Cities**

Professor Georgia Butina Watson has been invited to work with CABE, Urban Practitioners and a panel of experts on producing a Manual for Sustainable Cities. The project incorporates and builds upon recent research in the field of climate change, sustainable design, pollution, energy efficient built form and other related matters. It will include Hothouse festivals, brainstorming with experts, and production of a manual, available in hard copy and electronically. Other expertise is drawn from London Climate Change Agency, Land Use Consultants, Studioengleback, Forum for the Future, Fulcrum Consulting, International Regeneration, Bioregional, David Lock Associates and Feilden Clegg Bradley Architects LLP.



Contact: Prof. Georgia Butina Watson (gbutina@brookes.ac.uk) from Urban Design Group

## Example of Recent Outputs

### Successful bids (2006-2007)

Client/Funder	Project title	OISD researcher	Total Value
IISI (International Iron and Steel Institute)	Living Steel, demonstration project (Poland, India and China)	Ray Ogden	£173,000.00
NESTA (National Endowment for Science, Technology and the Arts)	Path dependence, territorial innovation and the absorptive capacities of city regional economies	James Simmie, Andrew Chadwick, Juliet Carpenter, Ellie Jupp	£112,283.00
EPSRC (Engineering and Physical Science Research Council)	CASE award - Assess the potential for ground source heat pumps to reduce CO2 emissions from UK housing in a changing climate	Rajat Gupta, Robert Irving	£85,272.00
IPF (Investment Property Forum)	Is there a demand for sustainable commercial office buildings in the UK?: An analysis of the occupier market	Tim Dixon, Claire Roberts, Sally Sims, Gina Ennis-Reynolds	£49,500.00
DCLG (Department of Communities and Local Government)	Modelling the future take-up of low cost home ownership products	Youngha Cho	£32,000.00

### Recent publications – Books

Book title	Year	Author	Publisher
Identity by Design	2007	Georgia Butina Watson and Ian Bentley	Architectural Press
The Politics of Making	2007	Mark Swenarton, Igea Troiani and Helena Webster	Routledge/ Taylor & Francis
Atlas of Vernacular Architecture of the World	2007	Marcel Vellinga and Paul Oliver	Routledge/ Taylor & Francis
'World Cities' and Urban Form: fragmented, polycentric, sustainable?	2007	(Ed.) Mike Jenks, Daniel Kozak and Pattaranan Takkanon	Routledge/ Taylor & Francis
Sustainable Brownfield Regeneration	2007	(Ed.) Tim Dixon, Mike Raco, Philip Catney, and David Lerner	Blackwell Publishing
The Carbon Counting Handbook for Buildings and Cities	2007	Rajat Gupta and Susan Roaf	RIBA Enterprises

### Other reports

Title	Year	Author	Publisher
A Green Profession?: An Audit of Sustainability Tools, Techniques and Information for RICS Members – Full report	2007	Tim Dixon, Andrea Colantonio and David Shiers	RICS
Why China? Why now? The role of property markets in supporting economic and social development in China	2007	Albert Cao and Ramin Keivani	RICS
How to commission sustainable construction in FE colleges/ How to conserve energy in FE colleges/ How to conserve water in FE colleges	2007	Rajat Gupta and Smita Chandiwala	Seacourt Publishers

### Forthcoming Events

Date	Course/Conference Title
2007	
Ongoing throughout the year	Certificate in Strategic Environmental Assessment by Distance Learning
Monday 15 October	Introduction to Planning Law
Tuesday 11 December	Introduction to the Planning Process
Thursday 13 December	Screening, Scoping and ES Review under the 1999 Environmental Impact Assessment Regulations
2008	
Tuesday 15 January	OISD: School of the Built Environment Conference: Change to Survive: Creating a 21st Century Sustainable Built Environment
Friday 25 January	Department of Architecture: Designs on the Planet: studio culture and the Challenge of climate change
Wednesday 6 to Friday 8 February	Towards sustainable energy technologies and low carbon buildings for climate change mitigation, New Delhi, India. UK-India-Sri Lanka Young Scientists Conference funded by British Council
Starting in the Spring 2008 11 Thursday evening teaching sessions	Certificate in Environmental Assessment Procedures & Process

The above are examples of confirmed courses but we will be running additional courses.

Contact: Karen Hughes, Short Course Co-ordinator - khughes@brookes.ac.uk or Tel: 01865 483560 Fax: 01865 483406

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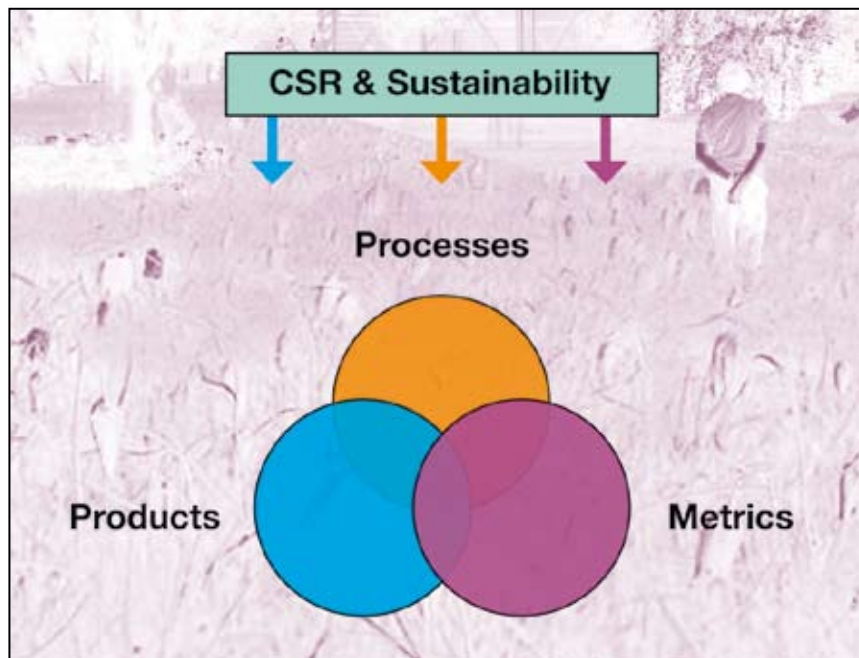
## PPM<sup>BE</sup>

The importance of Corporate Social Responsibility (CSR) and Sustainability as key drivers for both the private and public sectors in the Built Environment is recognised regionally and nationally in the UK.

OISD has brought together three key areas of expertise within its new HEIF3 funded programme:

- Products: developing and using sustainable building design and construction.
- Processes: assessing and analysing the impact of sustainable building and construction on real estate investment, development and construction processes, in terms of decision-making, asset management, knowledge management and value management.
- Metrics: measuring the impact of sustainable design and construction at building, city and regional economy scales.

For further details see: <http://www.brookes.ac.uk/schools/be/oisd/ppm>



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