

# Oxford Institute for Sustainable Development (OISD)

Internationally excellent research and consultancy from Oxford Brookes University's sustainable development institute

Make Bethnal Green, postgraduate student work by Joe Williams



OXFORD  
**BROOKES**  
UNIVERSITY

# Oxford Institute for Sustainable Development

## An overview

### Introduction

The Oxford Institute for Sustainable Development (OISD) was established in July 2004.

OISD research addresses the multiple dimensions of sustainable development (social, economic, environmental and governance) and the synergies and processes that link them. We have an annual turnover of approximately £1 million from research councils, government, industry and charities.

### Our mission and goals

OISD has a key mission to undertake funded research on sustainability in built and natural environments at all scales. Its aim is to advance knowledge and practice on sustainable environments by:

- developing concepts, designs, technical and process approaches
- informing policy debates nationally and internationally
- developing an empirical evidence base
- contributing to enhanced stakeholder participation.

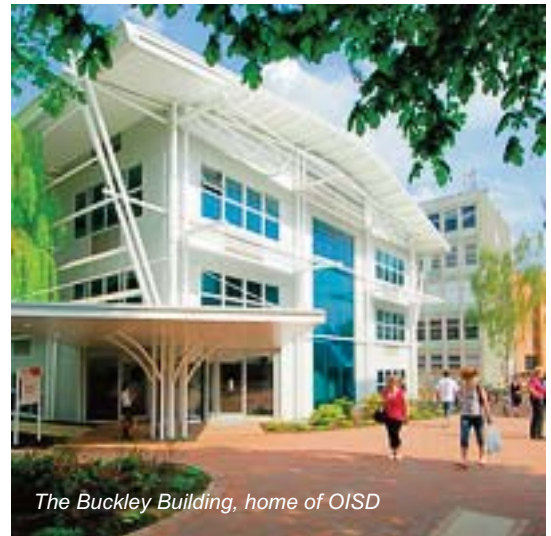


*OISD staff group photograph 2009*

## The sustainable future

Our research addresses key questions which 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 in regeneration?
- 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 future generations, including for an ageing population?



## Today's challenges

These questions must be seen in the context of some 60% of the world's population being urbanised by 2030 and London's population, for example, expanding to some 8.6mn in 2015 compared to 7.7mn today. The built environment is therefore a vital global and national asset, characterised by its substantial value (in the UK representing some £5000bn of fixed capital assets, or 77% of the national total) but also its environmental impact (50% of UK carbon emissions emanate from buildings).

Providing a sustainable built environment (in environmental, economic and social terms) is therefore fundamental to people's lives and jobs within sustainable communities. However, renewing and regenerating the built environment presents considerable sustainability challenges particularly in the context of climate change.

## Research groups

OISD comprises the following research groups:

- Impact Assessment
- Spatial Planning
- Urban Design
- Architectural Humanities including:
  - Discourses on Space and Society
  - Centre for Development and Emergency Practice
  - International Vernacular Architecture
- Low Carbon Building
- Technology
- Construction and Project Management
- Real Estate and Land Management

The research groups focus on different spatial scales and processes. Each group has a distinct identity and research strategy, but there are also synergies between them, and collaborative working is an important element of our activities.

# Sustainable development research with a cutting edge

The Oxford Institute for Sustainable Development is the largest academic research institute in the UK dedicated to research on sustainable development in the built environment. A recent HEFCE report into sustainable development in higher education in England suggests that OISD is one of the key players in sustainable development research. OISD is also a member of the UK Green Building Council.

OISD has continued to grow from strength to strength and is carrying out a range of funded research for research councils, industry and the public sector..



Despite the continuing turbulence created by the economic cycle, sustainability remains at the heart of decision-making for many governments, businesses and other stakeholders. Sustainability matters because not only does it impact on the bottom line, but its dimensions also have huge ramifications for future generations globally. Providing a sustainable built environment (in environmental, economic and social terms and underpinned by appropriate governance systems) is fundamental to people's lives and jobs within sustainable communities. However, renewing and regenerating the built environment presents considerable sustainability challenges. Today, the vast majority of commentators accept that climate change is a real and present danger. This view was reinforced by the UK government's Stern Review and a variety of research findings which highlight the very real perils that a 'business as usual' scenario presents for our global future.

Carrying out research which really does make a difference and has an impact is therefore vital. OISD's research (which is funded through industry, the research councils and charities) is focused on a range of scales from building and component level through to city scale. It has helped shape policy, provided benefits to the economy and also contributed to quality of life over a number of years. There are then some challenging research questions to address in the built environment and as you will see from our new brochure, our research programme is already answering some key questions relating to an increasingly complex sustainability agenda in the built environment. We hope you enjoy reading about our research and do please contact me or the individual group leaders for more information on research and knowledge transfer services.

Professor Tim Dixon  
Director of OISD  
Co-Director OISD:REL

# Technology, Design and Environment

The new faculty of Technology, Design and Environment and indeed the University as a whole, is committed to supporting externally recognised world-leading research and knowledge transfer activities.

One of the drivers of structural change has been the imperative to create even stronger, internationally competitive research environments, with sufficient capacity to support complex and multi-disciplinary activities. The faculty will continue to focus on quality and depth in core and new areas of expertise and alongside this will seek to further its strong portfolio of cross-cutting research. Through this it will generate balanced and holistic contributions to some of the most important environmental, technical and societal research agendas.



The new faculty brings together a number of existing areas of strength, where already there is a good level of collaboration. The former Schools of Technology and Built Environment each had substantial high profile research and knowledge transfer portfolios in their own right. In combination with the rapidly developing research base in Arts, the new faculty has enormous capacity and a unique skill base.

Throughout the faculty research is structured into clearly defined clusters. These will continue to grow and to evolve in line with changing needs. The clusters benefit from strong intellectual leadership. They support research students and early career ambitious developing researchers to work alongside high profile agenda setting academics.

OISD is playing an important role in networking clusters around core research agendas. In the new structure networks of all levels will continue to be critical to our mission. These will include networks within the faculty and with other faculties in the University, as well as networks outside the University with other academic institutes, governments, and the industrial and commercial sectors.

The key problems and research needs of the future are emergent and are always subject to flux, but the route forward for the faculty is clear. There will be a continued development of internationally leading research in our key areas of engagement (including strategically significant new areas). This will be coupled with co-ordinated inter-disciplinary working. The contribution of individuals is and will continue to be, recognised and valued as we move to the new structure. The faculty will work with absolute commitment to achieve the greatest positive impact to the communities it serves.

Professor Ray Ogden  
Associate Dean, Research and Knowledge Transfer  
Director of OISD:Technology

# Impact Assessment Unit (OISD: IAU)

## Background

The Impact Assessment Unit (IAU) is a centre of excellence in Environmental Impact Assessment (EIA), which brings together a large team with expertise in this field. We have an international profile in leading edge studies of environmental assessment and its application, such as recent work on climate change and resilience. UK Research Assessment Exercises have highlighted our work as being of “international standing”. Our clients, funders and partners include the UNECE, EU, UK government and agencies, local government and the commercial sector.

## Research expertise

- Strategic impact assessment and appraisal
- Impact assessment effectiveness and follow-up
- Socio-economic assessment and environmental inequality
- Integrated assessment of climate change mitigation and adaptation
- Sectoral studies in energy, water, biodiversity, urban development, tourism, waste and minerals
- EIA and SEA procedures (such as screening and scoping)
- Technical studies (causal network analysis, GIS and expert systems in EIA)
- Environmental policy, planning and decision-making
- International comparative studies in EIA and SEA

## Testimonials

Professors John Glasson and Riki Therivel have been appointed as Commissioners in the UK Major Infrastructure Planning Unit.

When collaborating in research studies with Atkins on studies of climate change in SE England and Northern Ireland, and on the Water Framework Directive, the IAU team: *“provided positive, thoughtful and innovative inputs, working timely and effectively in partnership with Atkins staff”* Dr. Brian Arkell, Head of Water Resources Management, Atkins

The *“enthusiasm and knowledge of the teaching team”* has been highlighted by Dr. Alan Bond, University of East Anglia, External Examiner for our MSc in Environmental Assessment and Management, who continues to *“be impressed with the MSc programmes and the way in which they are structured and taught”*.



## External links

- International organisations involved in EIA such as UNECE, Espoo Convention, and EU Ad hoc Technical Working Group on Biodiversity and Climate Change
- EIA professional practice and academic research in Australia, New Zealand, Portugal, Brazil, Netherlands, Denmark, Malaysia, South Korea etc
- Other universities such as Aalborg (Denmark), Curtin (Australia), Lund (Sweden), Wageningen (NL), UFZ (Germany), Universidade de Tras-os-Montes e Alto Douro (UTAD) (Portugal), and Hertfordshire, Manchester and Oxford (UK)
- Environmental consultancies, often on collaborative research projects (such as Atkins, HR Wallingford, Levett-Therivel, ERM, Land Use Consultants, WSP and Adams Hendry)
- IAIA (International Association for Impact Assessment) and IEMA (Institute of Environmental Assessment and Management)

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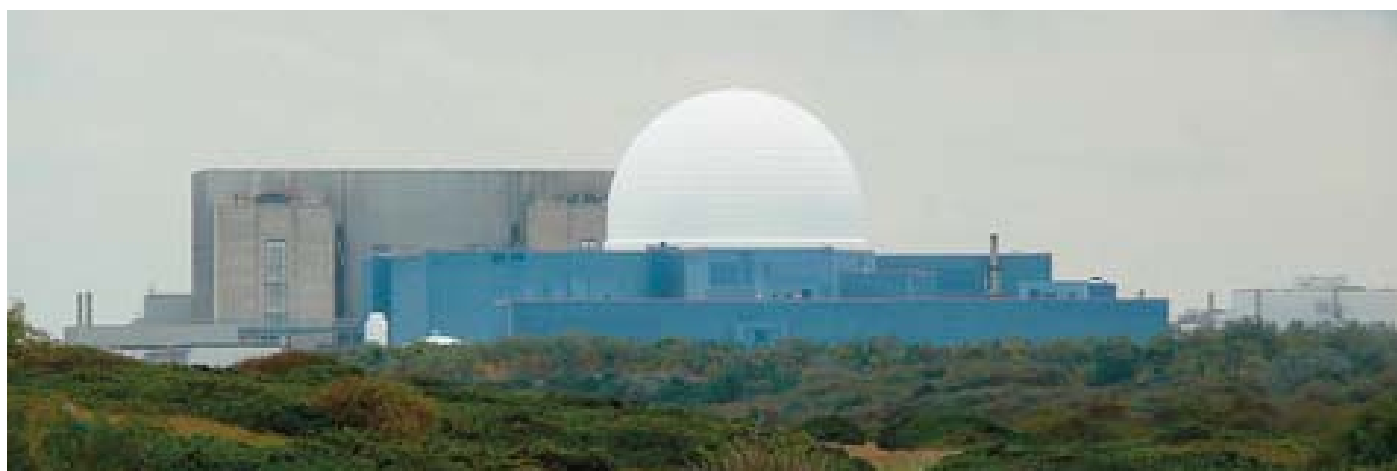
## Examples of project work

**Energy infrastructure:** IAU is engaged in on-going studies funded by major energy providers such as EDF Energy into the local socio-economic impacts of UK nuclear new build projects and decommissioning programme and for renewable energy projects such as wind farms in Scotland, provides specialist EIA input on economic impacts

**Brazil-UK network:** with colleagues across OISD and academic partners in Brazil, IAU staff are developing research projects around the themes of globalisation, climate change and urban governance, with particular emphasis on issues facing vulnerable and marginalised urban communities.

**Carbon accounting and EIA:** IAU is exploring how, in EIA practice, carbon emissions are accounted for at all stages of development

**C-Change:** IAU staff are involved in the peer evaluation of the Interreg IVC funded C-Change project, a trans-national territorial cooperation project. With partners in France, Germany, Luxembourg, the Netherlands and the UK, the project is designed to help city regions to cope with changing climates through community engagement and behaviour change, the creation of multi-functional spaces, and adapting spatial planning strategies.



## Selected recent research publications

- Glasson, J., R. Therivel and A. Chadwick (2011, forthcoming) *Introduction to Environmental Impact Assessment*, 4th edition, London: Routledge
- Weston, J. (2011 forthcoming) EIA theories – all Chinese whispers and no critical theory?, *Journal of Environmental Policy & Management*
- Wilson, E. and Piper, J. (2010) *Spatial Planning and Climate Change*, London: Routledge
- Therivel R. et al. (2010) Sustainability-focused impact assessment: English experiences, *Impact Assessment and Project Appraisal*, Vol. 27(2): 155-168
- Durning, B., Carpenter, J., Glasson, J and Butina-Watson, G. (2010) The spiral of knowledge development: professional knowledge development in planning, *Planning Practice and Research* 25(4): 497-516
- Therivel, R. (2010) *Strategic Environmental Assessment in Practice*, 2nd edition, London: Earthscan
- Bryson, J., Piper, J. and Rounsevell, M. (2010) Envisioning futures for climate change policy development: scenarios use in European environmental policy institutes, *Environmental Policy and Governance*, 20(5): 283-294

- Glasson, J. and Wood, G. (2009) Urban regeneration and impact assessment for social sustainability, *Impact Assessment and Project Appraisal*, 27(4): 283-290
- Morris, P. and R. Therivel, eds. (2009) *Methods of Environmental Impact Assessment*, 3rd edn, London: Routledge

## Training opportunities

### Professional training

- An array of popular short and CPD courses (for example on Resilience, SEA, Habitats Regulations Assessment, Screening, Scoping and ES Review, and Climate change in EIA)
- Certificate courses in EIA, and (online) on SEA

### Research and taught degrees

- Major centre for PhD studies, supported by research grants and other studentships: recent studies include Impact Assessment and Management of Tourism in Developing Countries; A Critical Theory Analysis of EIA; and Adaptation to Climate Change in World Heritage Sites. We welcome enquiries and applications
- MSc/PGDip in Environmental Assessment and Management; MSc/PGDip in Environmental Management and Technology; and MSc/PG Dip/Cert in Climate Change and the Built Environment

# Spatial Planning Group (OISD: SPG)

## Background

SPG brings together a wide range of intellectual and policy concerns within spatial planning and cognate fields, both nationally and internationally. Much of its work falls under the heading of sustainable development, with a particular focus on three major areas of study: Planning Thought and Governance; Economic Development, Innovation and Regeneration; and Accessibility, Transportation and Migration.

The group reflects a commitment to recognise and build on cross-cutting and multidisciplinary interests within the broad remit of spatial planning, as well as advancing more established research strengths in specific fields. SPG members have a strong track record in research funding, including: ESRC, EPSRC, DCLG (ODPM), NESTA, JRF, British Academy, EIB, RTPI, and SEEDA.

## Research expertise

### Planning Thought and Governance

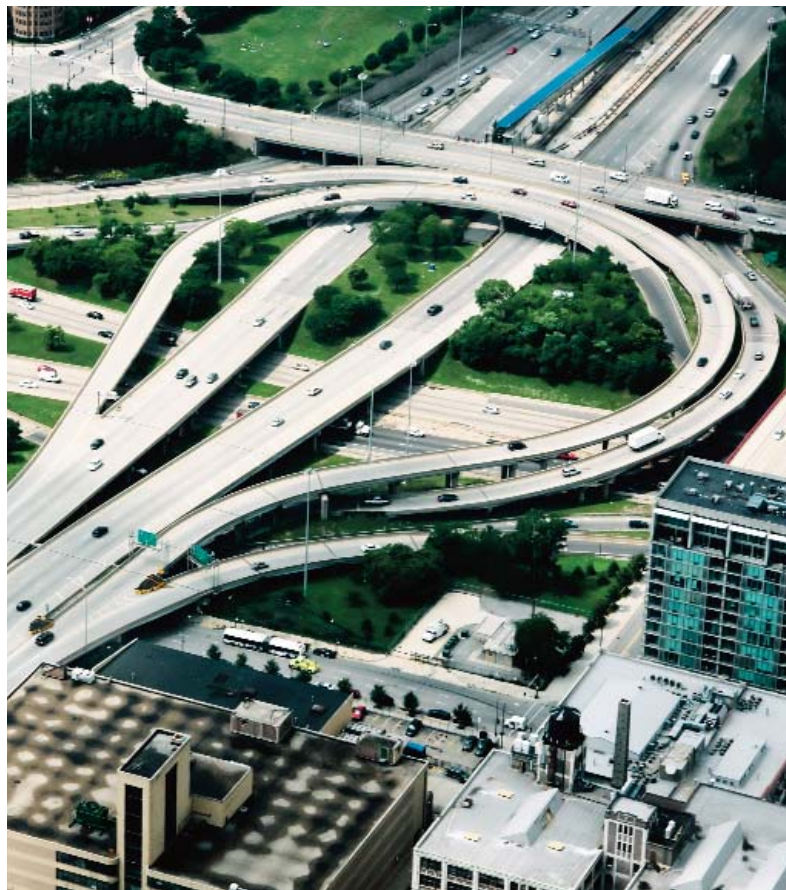
- Governance and Democracy; Participation and Engagement
- Conceptualising Spatial Planning and the Spatial Planning System
- Planning Ideas, Learning and Policy Transfer
- Planning History
- Spatial Planning Policy
- Regional Planning and City-Regions
- Professionalism in Planning
- Critical Futures – Complexity, Knowledge, Evidence, Risk

### Economic Development, Innovation and Regeneration

- Local and Regional Economic Dynamics
- Innovation and Development in the Low Carbon Economy
- Evolutionary economic geography theory
- Competitive economic performance of urban and regional economies
- Conceptualising Local, Regional and Neighbourhood Development
- Governing Development and Regeneration Policy: Restructuring State-Market Relations
- People-Equality-Diversity

### Accessibility, Transportation and Migration

- International Migration and Sustainable Development
- Transportation and Mobility Studies
- Infrastructure Planning and Delivery



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## Example of project work: Infrastructure and Spatial Planning

Tim Marshall's ESRC funded research fellowship on Infrastructure and Spatial Planning finished at the end of 2010. It allowed him to carry out extensive research work in five European states – France, Germany, the Netherlands, Spain, and the UK.

The research demonstrated that infrastructure provision is an achilles heel for many countries, with framing circumstances making the achievement of multiple economic, low carbon and social objectives ever more difficult to achieve. However, some countries adopt more agile and sophisticated planning approaches, which integrate planning spatially and therefore across infrastructure sectors. Both overarching high level spatial planning (Netherlands, Scotland) and generously-resourced project stage deliberation (France) show their worth. This contrasts with the current approach in England, where the stress is on speeding up project decisions and strongly departmental policy making. Having said this, further evolution of the current regimes in the UK is to be expected, given the perceived importance of changing some large scale infrastructure systems, especially for energy and transport.



Further details available at: [www.brookes.ac.uk/schools/be/about/planning/projects/tmarshall](http://www.brookes.ac.uk/schools/be/about/planning/projects/tmarshall)

### Training opportunities

MSc/PGDip/PGCert in Urban Planning: Developing and Transitional Regions examines the theory and practice of urban planning in societies undergoing rapid economic, social, environmental and spatial change.

The Spatial Planning Group actively encourages applications for postgraduate research across the range of its specialisms in spatial planning policy, governance, urban and regional development and transportation. Recent studentships have been funded by the ESRC, Oxford Brookes University, and a number of overseas Government Departments. Interested candidates are encouraged to contact the SPG Director in the first instance.

### External links

- Tim Jones and Alison Chisholm are currently collaborating with the Universities of Lancaster and Leeds on "Understanding Walking and Cycling", an EPSRC-funded research project (2008-11) which aims to develop a better understanding of the complex ways in which households and individuals make everyday travel decisions about short trips in urban areas.
- Sue Brownill and Juliet Carpenter are working with the Greater London Authority on research into Olympic Legacies
- Dave Valler is co-editor with Dr. Andrew Wood (University of Kentucky) of a special edition of *Regional Studies* (44.2.) entitled 'Conceptualizing Local and Regional Economic Development in the United States'. (2010)

### Selected recent research publications

- Mbiba, B. (2010) 'Burial at Home: Dealing with Death in the Diaspora and in Harare', Chapter in McGregor, J. & Primorac, R. (eds.) *Displacement and Survival: Zimbabwe's New Diasporic Identities and Connections* Berghahn Publishers
- Nunes, R. with Adams, N. Cotella, G. (eds) (2010) *Territorial Development, Cohesion and Spatial Planning: Knowledge and Policy Development in an Enlarged EU* Routledge: London
- Simmie, J. & Martin, R. (2010) 'The Economic Resilience of Regions: Towards an Evolutionary Approach' *Cambridge Journal of Regions, Economy and Society* 3(1) 27-44
- Valler D and Wood A (2010) Conceptualising Local and Regional Economic Development in the United States *Regional Studies* 44.2.139-153
- Ward, S. V. (2010) 'What did the Germans ever do for us? A Century of British Learning About and Imagining Modern Planning' *Planning Perspectives* 25(2) 117-140
- Brownill, S. & Carpenter, J. (2009) 'Governance and Integrated Planning in the Thames Gateway, England' *Urban Studies* 46(2) 251-274
- Headicar, P. (2009) *Transport Policy and Planning in Great Britain* London: Routledge
- Marshall, T. & Glasson, J. (2007) *Regional Planning: Concepts, Theory and Practice* London: Routledge

# Urban Design Group (UDG)

## Background

The Urban Design Group is one of the largest UK providers of research expertise in urban design and conservation matters. Our research activity is of national and international standing. Our clients include, amongst others, UK government / agencies, local government, the commercial sector, community and voluntary sectors and a number of international agencies, governments and research councils.

## Research expertise

- Community development
- Urban morphology
- Place-making
- Urban coding
- Place identity
- Masterplanning
- Responsive environments
- Urban regeneration
- Rehabilitation of historic centres
- Conservation of buildings and historic areas
- Townscape appraisal
- Public open space design and management
- Town centre management
- Chaos and fractal theories
- Sustainable urban design
- Children and the built environment
- Sensory urban design
- Aesthetic dimensions of urban design

## Recent research activity

- Peer Review of the Qatar National Development Framework
- Retrofitting Cities 2050 (EPSRC with Tim Dixon)
- The use of Mobile Technologies in teaching Urban Design (CEBE)
- Rootscape – developing the urban design skills of young people (UrbanBuzz)
- Urban Design Study for Lesney Matchbox Factory Site (LB Hackney)
- Designing Sustainable Cities (Urban Practitioners and CABE)
- Social housing (J A Pye Oxford Ltd.)
- Evidence review: Thames Gateway (DCLG)
- Townscape appraisal (Heritage Lottery Fund)
- Transferable lessons from the new towns (DCLG)



Image from Angelltown

## UDG: contact information

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## Example project work: Rootscape/UrbanBuzz

Oxford Brookes University, together with Oxford Youth Works and latterly in association with Mayim, has been running an UrbanBuzz-funded project named Rootscape.

The project has aimed to equip young people with urban design and related skills, to empower them to make a much-needed contribution to the way the built environment is designed. It is widely recognised that child-friendly and youth-friendly urban design is central to building sustainable communities.

No matter how carefully researched, current advice on how to achieve this is articulated from adult perspectives. Rootscape was designed to enable children and young people to contribute to the design process themselves, offer the advice designers need to make better places and in the process develop a range of employment skills related to their individual interests and aptitudes.

At the end of the project, the young people put together an exhibition of all the aspects of the work they had done. The exhibition was created to showcase all the new skills they had learned integrated with other aspects of youth culture such as rap and dance, through performances that the young participants themselves created.

Further details available at:

[www.brookes.ac.uk/schools/be/research/jcud/urbanbuzz/rootscape](http://www.brookes.ac.uk/schools/be/research/jcud/urbanbuzz/rootscape)



Professor Butina Watson and young community residents from Blackbird Leys, Oxford

## Training opportunities

- Major centre for PhD studies, supported by ESRC and eligible for BC and other studentships. Urban design normally has 18-22 EU and international PhD students
- MA/Diploma and Certificate in Urban Design
- MRes in Urban Design
- MA by Research in Urban Design
- An array of popular short courses (for example on Fundamentals of Urban Design, Public Open Space Design, Urban Regeneration, Masterplanning, Urban Coding and Place Identity)

## External links

- With international organisations involving BC, DfID and various governments
- With UD professionals/academics in other countries (eg EU, Australia, New Zealand, Thailand, Mexico, Brazil, USA, Vietnam and a growing number of developing and transitional economies)
- With other UK universities (eg Sheffield Hallam, Kingston University)
- With urban design consultancies, often on collaborative research projects (eg DEGW, David Lock Associates, Gallagher Estates, Urban Practitioners)
- With various community groups
- With various local authorities (eg West Dorset District Council, Oxford City Council, Oxfordshire County Council)

## Selected recent research publications

- Butina Watson, G. (Forthcoming June 2011). The Art of Place-making. In *Urban Lost and Found*, Rutgers University Press.
- Shipley R and Reeve A (2010) Evaluating the THI: measuring the effectiveness of the Townscape Heritage Initiatives in the United Kingdom. *Urban Design International* 15 (4) 221-237
- Cooper J, Oskrochi R, (2008), Fractal analysis of street vistas – a potential tool for assessing levels of visual variety in everyday street scenes *Environment and Planning B* 35 (2).
- Reeve, A., Goodey, B. and Shipley, R. (2007) Townscape evaluation methods. *Urban Morphology*, 11(1). pp 25-41.
- Butina Watson G and Bentley I (2007) *Identity by Design*. Architectural Press.
- Butina Watson G and Zetter R (2006) *Designing Sustainable Cities in the Developing World*. Ashgate.
- Butina Watson G, Brownill S, Carpenter J, Durning B and Reeve A (2006) *Thames Gateway Evidence Review - Executive Summary*. London, Department for Communities and Local Government.

# Architectural Humanities: DOSSier

## Background

The DOSSier (Discourses on Space and Society) research unit has a multidisciplinary focus and aims to bring together academics and researchers in order to connect the built environment disciplines with those of the humanities and social sciences. The goal is to generate new understanding of the relationship between the spatial and the social through discussion, evaluations and research. The focus is therefore on the human and social dimensions of built environment and designed spaces. DOSSier seeks to develop new conceptual approaches, expertise and to advance knowledge and to link it to various practices across different fields through:

- Inter/multi-disciplinary events, workshops and seminar series
- collaborative projects and funded research
- proceedings and publications
- facilitation of cross-university cooperation and support for research students and young researchers enhancing research on topics related to space and society.

It is committed to organize inter/multi-disciplinary events, workshops, seminar series, to develop collaborative projects and to produce publications in order to bring together different discourses on space and society.

DOSSier was formed following the organisation in December 2006 of the 3rd annual AHRA (Arts and Humanities Research Association) international conference in Oxford. Since then, DOSSier has organised events on topics including *violence and space/architecture and conflict*; *colour, space and meaning*, and *the design of urban housing*.

## Research expertise

- Interdisciplinary and multidisciplinary study of the human and social dimensions of the built environment
- Human and social perceptions and understandings of designed spaces
- Spaces, architecture, design in its social, political and cultural dimensions
- History of architecture and space
- Anthropology of architecture and space
- Pedagogy of architecture and design



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## Example project work

### Cook's Camden: London's great experiment in urban housing

Exhibition and symposium on the most concentrated investigation into the architecture of urban housing of the past half-century. Organised with NLA (New London Architecture) and The Building Centre, London, October-December 2010 and curated/chaired by Prof Mark Swenarton.

### Place-making, identity and design

Multi-disciplinary joint presentation to Eighth International Conference on New Directions in the Humanities, University of California, Los Angeles, 29 June- 2 July 2010, bringing together disciplines of anthropology, architectural regeneration, Development & Emergency Practice, architectural history, planning history and vernacular studies. Authored by Dr B Piquard, Dr A Orbasli, Prof M Swenarton, Prof D Sanderson, Prof S Ward, Dr M Vellinga. Published output in progress.



### Violence and Space/Architecture and Conflict

Series of symposia and events organised by DOSSier including Violence and Space symposium organised by Dr B Piquard and Dr I Troiani (October 2008) and two-day Sumud and the Wall conference at Bethlehem University (April-May 2009) organised with the Universities of Utrecht, Al-Quds Open Ramallah and Paris Est Créteil Val de Marne organised by Dr B Piquard. Outcomes include themed issue of The Journal of Architecture on architecture and conflict edited by Dr B Piquard and Prof M Swenarton (forthcoming, 2011)

### Colour, meaning and space

Half-day symposium (April 2009) bringing together academics and students from Fine Arts, Linguistics, History, and Architecture as well as the Colour Group of Great Britain, organized by Prof B Mikellides and Dr I Troiani.

## Training opportunities

- Space and Conflict: PGcert in Humanitarian Action and Conflict
- Masters in Architecture, M.Arch
- Diploma in Architecture, Dip.Arch

## External links

- The Building Centre and NLA (New London Architecture) for Cook's Camden exhibition and symposium
- International universities including Universities of Utrecht, Bethlehem, Al-Quds Open Ramallah and Paris Est Créteil Val de Marne for the development of wall studies
- Universities of Belfast, Canterbury, Cambridge, Westminster, Brighton, University College London for themed issue of The Journal of Architecture on architecture and conflict (forthcoming, 2011)

## Selected recent research publications

- H Webster (2010) *Bourdieu for Architects*. Routledge.
- I Troiani (2010) 'Stirling's Worth: The Florey building, Oxford' in A Sharr, *Quality out of Control: Standards for Measuring Architecture*. Routledge.
- M Swenarton (2008) *Building the New Jerusalem: architecture, housing and politics 1900-1930*. IHS-BRE Press.
- I Troiani (2008) 'Viva Stirling's Florey building', in D van den Heuvel et al, *The Challenge of Change: Dealing with the Legacy of the Modern Movement*, IOS Press.
- H Webster (2007) 'The Analytics of Power –Representing the design jury'. *Journal of Architectural Education*.
- M Swenarton, I Troiani, H Webster (2007) *The Politics of Making*. Routledge.
- I Troiani (2007) 'Architectural history, friendship and filmed conversations' in J Rendell et al, *Critical Architecture*. Routledge.

# Architectural Humanities: CENDEP

## Background

The Centre for Development and Emergency Practice (CENDEP) at Oxford Brookes University is well respected for its practice base and strong culture of student and practitioner collaboration in the field of international development and emergency response.

Since its founding in 1991, CENDEP has established an international reputation for excellence. In 2001, the Masters degree in Development and Emergency Practice was awarded the Queen's anniversary prize for higher and further education. Since its inception over 500 students have attended the degree programme from all around the world, with many going on to hold wide-ranging positions in community based groups, NGOs, UN and donor bodies, governments and the military.

In 2010, two new teaching programmes were added to the roster of CENDEP courses; Postgraduate Certificate in Humanitarian Action and Conflict and Shelter after Disaster.

The CENDEP team includes a core teaching staff and guest lecturers from a range of development practice and researchers.

## Research expertise

- Development and emergency practice
- Shelter after disaster
- Humanitarian theory and practice
- Human rights and governance
- Disasters, risk, vulnerability and climate change
- Conflict, violence and humanitarianism
- Partnerships for development

## Testimonial

*"I worked on development and emergency with international humanitarian organisations in my country, Ethiopia, for over 30 years...I stepped back from the 'chipping' away' and came to study to understand the bigger picture. I chose Oxford Brookes because of the design of the DEP course was the answer to my quest. The modules include both theory and practical exercises. It address development issues as well as disaster response both in rural and urban settings, and provides applicable knowledge on human rights, conflict, shelter, gender, partnering etc."*

Almaz Fiseh, Graduate of the MA in Development and Emergency Practice



Living along a railway track, Dhaka (photograph by D Sanderson)

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## Example project work: Shelter after Disaster

CENDEP is currently carrying out research which is focused on shelter after disaster. While 'shelter after disaster' has been a recognised field of work for at least thirty years, the systems and approaches for successful shelter delivery are far from clear. With a bewildering range of actors and contested debate over the best approaches, achieving equitable, sustainable and effective shelter after disaster is complex and all too often goes wrong. To these ends CENDEP's research approach to shelter after disaster is to learn from practice about what works best. For CENDEP this means adhering to developmental good practice, wherein affected communities must be engaged in decision making at every stage.

CENDEP research into shelter after disaster to date includes an extensive literature review of what works well in shelter after disaster leading to a series of published papers. Additionally, CENDEP has coordinated a number of conference events, including 'Improving learning and practice in the NGO shelter sector', which took place in 2010 with partners Care International UK, and was funded by Elrha (Enhancing Learning and Research for Humanitarian Assistance).

Further information can be found at:

[www.brookes.ac.uk/schools/be/oisd/architecture/cendep/shelters](http://www.brookes.ac.uk/schools/be/oisd/architecture/cendep/shelters)



Shelter conference images

## Training opportunities

- Development and Emergency Practice MA
- Postgraduate Certificate in Humanitarian Action and Conflict
- Postgraduate Certificate in Shelter After Disaster

## External links

- Université Paris Est-Créteil Val de Marne, partner in the Postgraduate Certificate in Humanitarian Action and Conflict
- Elrha (Enhancing Learning and Research for Humanitarian Assistance), a funding partner in shelter after disaster research
- CARE International UK is one of the world's three biggest aid agencies with a mission to create lasting change in poor communities and put money where it is needed most. CARE International UK has partnered with CENDEP on a number of shelter after disaster action research activities

## Selected recent research publications

- Sanderson D (forthcoming 2011) *Livelihoods and Disaster Risk Reduction*. Chapter in forthcoming *Routledge Handbook of Natural Disasters*, edited by Wisner and Kelman
- Carver, R (2010) A new answer to an old question: national human rights institutions and the domestication of international law, *Human Rights Law Review*, 10 i,
- Hamdi, N (2010) *The Placemaker's Guide to Building Community*, Earthscan
- Sanderson, D and Hedley, D (2002) *Strengthening urban livelihoods in Zambia – PUSH II and PROSPECT*, P247-256 in *Urban Livelihoods, a people centred approach to reducing poverty*, Ed. Carole Rakodi and Tony Lloyd-Jones, Earthscan Publications, London
- Sanderson, D and Sharma, A (2008) Winners and losers from the 2001 Gujarat earthquake, *Environment and Urbanization*, Vol 20 (1) April, pp 177-186
- Hamdi, N (2004) *Small Change*, Earthscan
- Fisher, S (2004) *Spirited Living: Waging Conflict, Building Peace*, Quaker Books
- Hamdi, N (1995) *Housing Without Houses*, IT Publications

# Architectural Humanities: International Vernacular Architecture Unit (IVAU)

## Background

The International Vernacular Architecture Unit aims to advance recognition and understanding of the meaning and importance of those architectural traditions commonly identified as 'vernacular'. Hosting the unique Paul Oliver Vernacular Architecture Library (POVAL) and providing a base for interdisciplinary, cross-cultural and comparative research, it promotes projects that extend the geographic, thematic and methodological scope of the field, emphasising the way in which vernacular traditions around the world are of fundamental importance to the sustainable development of the world's built environment.

## Research expertise

- Interdisciplinary, cross-cultural and comparative study of vernacular architecture traditions all around the world
- Transmission of indigenous, traditional and vernacular skills, expertise and knowledge
- Conservation, regeneration and sustainability of the vernacular building heritage worldwide
- Historic towns, tourism and heritage management
- Thermal comfort in vernacular architecture
- Cultural geography and mapping of vernacular architecture traditions
- Design in a vernacular context

## Testimonial

*"Over the last two years Dr Marcel Vellinga, Professor Howard Davis (University of Oregon), Dr James Davidson (University of Queensland) and myself have embarked on the writing of a book laying out a revisionist theoretical framework for a more ethically equitable approach to the study of the architectural traditions of the world. Most recently this culminated in an invitation and grant for Dr Vellinga to visit the Aboriginal Environments Research Centre (AERC) at the School of Architecture at the University of Queensland as a Visiting Academic, for two months, to carry out collaborative research, present guest lectures and develop research proposals. We are expecting Dr Vellinga to visit again in July 2011 to the annual meeting of the Society of Architectural Historians on Australia and New Zealand (SAHANZ), where he will meet the Polynesian scholars working in the field of inter-cultural modern Pacific architecture. We are anticipating that such international exchanges between the International Vernacular Architecture Unit and the AERC will continue and result in scholarly publications as we develop our new theory on the production and consumption of architecture."*

Professor Paul Memmott, Director, Aboriginal Environments Research Centre, University of Queensland, Australia



Photograph by Marcel Vellinga



Photograph by Paul Oliver

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## Example project work: Vernacular Passive Cooling Systems and Thermal Comfort in Traditional Dwellings in Hot Dry Climates – A Case Study of Yazd, Iran

This project examined whether vernacular passive cooling systems are practicable in terms of the provision of comfortable indoor temperatures in the hot dry climates of present-day Iran. It identifies the main passive cooling systems in traditional houses in central Iran and examines whether they can provide indoor thermal comfort. It also identifies the major factors influencing the success or failure of vernacular passive cooling systems. The research combined physical and social scientific methods and used a number of different techniques, including a short-term thermal comfort survey, temperature variation measurements, a socio-cultural questionnaire survey, semi-structured interviews and personal observations.

Investigating user perceptions, the research has identified a multiplicity of negative factors attributed to vernacular passive cooling systems. These show that the cooling systems are no longer suitable for contemporary lifestyles and may be regarded as obsolete. The project results suggest that this obsolescence is not purely due to the fact that the systems are unable to provide thermal comfort throughout the hot season. A range of economic, aesthetic and cultural factors plays a part. A variety of positive aspects have also been attributed to vernacular passive cooling systems, which show that such systems have been applied to serve various requirements, not just the provision of thermal comfort.

The research findings show that if vernacular technologies such as passive cooling systems are to survive and to be incorporated into new building designs, all their attributes should be holistically taken into consideration and adjusted accordingly. Moreover, if the drawbacks of vernacular passive cooling systems are overcome, their incorporation in new buildings can to a large extent help reduce the reliance on electro-mechanical cooling systems, hence decreasing the consumption of electricity and the emission of CO<sub>2</sub>.

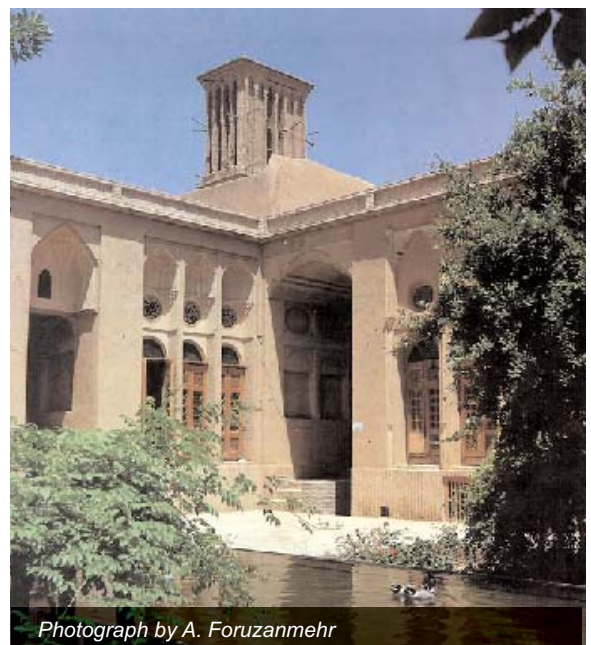
### External links

With international organisations involved in the field of vernacular architecture studies, such as the International Association for the Study of Traditional Environments (IASTE), the International Network for Traditional Building, Architecture and Urbanism (INTBAU), the Vernacular Architecture Forum (VAF), RehabiMed and ICOMOS - UK

With professionals and academics in universities all around the world, including The Aboriginal Environments Research Centre at the University of Queensland (Australia), Leiden University (Netherlands), Polytechnic University of Valencia, School of Oriental and Asian Studies (SOAS) Spain, ESG/Escola Superior Gallaecia (Portugal).

### Training opportunities

- MA/Diploma in International Architectural Regeneration and Development (IARD)
- The IVAU is a centre for PhD studies. It normally has around 6-8 EU and international PhD students



### Selected recent research publications

- Vellinga, M (2010) 'Marked Off: On Taboos in Architecture', *PERSPECTA: The Yale Architectural Journal*, 43.
- Orbasli, A (2009) 'Conservation of Coral Buildings on Saudi Arabia's Red Sea Coast' *Journal of Architectural Conservation*, 15(1) pp. 49-64.
- Foruzanmehr, A. (2009) Reconsidering vernacular earth buildings: New approaches for integrating traditional passive-cooling systems into modern buildings in warm-dry climates. In: *MEDITERA 2009: Proceedings of a conference on Mediterranean Earth Architecture*. Italy
- Orbasli, A (2007) *Architectural Conservation*. Oxford: Blackwell.
- Vellinga M, Oliver P and Bridge A, (2007) *Atlas of Vernacular Architecture of the World*. London and New York, Taylor and Francis.
- Orbasli A (2007) *Architectural Conservation*. Oxford, Blackwell.

# Low Carbon Building Group

## Background

The Low Carbon Building Group has an international profile in the field of carbon counting, building performance feedback, post-occupancy evaluation, and adapting buildings and neighbourhoods to climate change. The Group also has world-leading expertise in the study of thermal comfort, in particular the adaptive approach based on field surveys.

## Research expertise

- Carbon footprinting and carbon mapping of buildings, neighbourhoods and cities using the DECoRuM modelling approach
- Building performance feedback and post-occupancy evaluation of domestic and non-domestic buildings, new-build and retrofits
- Thermal comfort surveys and the statistical analysis of data from surveys
- Occupant behaviour and energy use in buildings
- Urban risk assessment for a changing climate using probabilistic climate projections
- Climate change adaptation planning and practices for existing building stock and urban environments
- Guidance on low-carbon building design and retrofits, particularly using passive, bioclimatic methods combined with low and zero carbon technologies
- Building energy simulation using IES, TAS models
- Guidance on sustainable design
- Sustainable use of construction materials

## Testimonials

Ian Goodfellow, Partner at Penoyre & Prasad Architects LLP, London said:

*"It is critical that designers, clients and building users understand how their buildings perform. Since 2004 Professor Rajat Gupta and his students have completed over 20 post occupancy evaluations of our buildings and we are also currently collaborating with OISD on TSB funded research projects. We have developed a very good working relationship with Rajat and his team over the years and enjoy the rigour of thinking they bring to assessing building performance. We look forward to continuing our work together to learn from and improve upon the buildings we design."*

Richard Oliver, Sustainability & Environmental Manager at Home Group said:

*"Home Group Ltd have had a close working relationship with Professor Rajat Gupta and the Low Carbon Building Group at Oxford Brookes University for over a year, where we have sought to build strong links between high-level academic research and the realities of delivering change within the (social-rental) housing sector."*

*Together, we have collaborated on the flag-ship 'Retrofit*



*for the Future' project launched by the Technology Strategy Board. This requires the detailed design, build and monitoring of two existing Home Group properties in the UK, with the intention of significantly reducing carbon emissions and the impact that each property has on our environment. As the UK slowly awakens to the reality of delivering 80% cuts in CO2 by the 2050 deadline, the Low Carbon Building Group are providing the research expertise to enable Home Group to successfully adapt and meet its future obligations."*

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## Example project work: EVALOC

Low-carbon building and climate change expert, Professor Rajat Gupta, has been awarded a major research grant of £1.14 million by the UK's Economic and Social Research Council (ESRC) under the RCUK's Energy programme, to lead an interdisciplinary team of researchers from Oxford Brookes University (OBU) and University of Oxford (OU) on a three-year research project worth £1.37 million.

The EVALOC project seeks to evaluate the impacts, effectiveness and success of Department of Energy and Climate Change (DECC) funded low carbon communities on localised energy behaviours.

EVALOC will study six selected low-carbon communities funded under the DECC's Low Carbon Communities Challenge (LCCC), a government-supported initiative to transform the way communities use and produce energy, and build new ways of supporting more sustainable living. These low-carbon community projects will be evaluated in terms of their: Impacts (on changing individual and community energy behaviours); Effectiveness (on achieving real-savings in energy use and carbon emissions) and Success (in bringing about sustained and systemic change).

Further details available at:

[www.brookes.ac.uk/schools/be/oisd/news/evaloc](http://www.brookes.ac.uk/schools/be/oisd/news/evaloc)

### External links

The Unit has widespread academic (research and teaching), governmental and industrial links both nationally and internationally through research projects and networks. These include:

- Research collaborations with University of Oxford's Environmental Change Institute (EVALOC project), University of West of England and Heriot-Watt University (SNACC project).
- Links with Government departments such as DECC (EVALOC project), Energy Saving Trust (EVALOC and Oxford Solar Initiative), Technology Strategy Board on a range of programmes, DEFRA and CLG (SNACC project), as well as social housing providers such as Home Group Housing, Oxford City Council and Swindon Borough Council.

### Training opportunities

The Group runs a one-year, full-time or two-year part-time master's course in Sustainable Building: Performance and Design.

One-day CPD workshops are offered in the fields of low carbon building design and performance; passive solar design; monitoring and post-occupancy evaluation of buildings; and carbon counting.

At present the unit has six PhD students, and we invite further students to apply.



### Selected recent research publications

- Gupta, R. and Chandiwala, S. (2010). Understanding occupants: feedback techniques for large-scale low carbon domestic refurbishments. *Building Research and Information* 38(5): 530-548.
- Gupta, R. (2009). Moving towards low-carbon buildings and cities: experiences from Oxford, UK. *International Journal of Low-Carbon Technologies* (4), pp.159 -168.
- Gupta, R and Gregg, M (forthcoming in 2011) Adapting UK suburban neighbourhoods and dwellings for a changing climate, *Advances in Building Energy Research Journal*.
- Gupta, R. and Chandiwala, S. (2009). *A critical and comparative evaluation of CO2 emissions from national building stocks of developed and rapidly-developing countries - case studies of UK, USA, and India*. The World Bank, Washington, USA.
- Stevenson F and Rijal H B (2010) Developing occupancy feedback from a prototype to improve housing production. *Building Research and Information* 38 (5) 549-563
- Stevenson, F. (2009) Post-occupancy evaluation and sustainability: a review. *Urban Design and Planning*, Vol 162: Issue 3, pp 123-130.
- Nicol J F and Humphreys M A (2007) Maximum temperatures in European office buildings to avoid heat discomfort. *Solar Energy*, 81, 295-304.

# Technology Group

## Background

OISD: Technology is an interdisciplinary research group working in the fields of construction technology, structures, building physics and sustainability. The group is involved in both pure and 'close to industry' research with a wide portfolio of UK, European and international activities. It has a broad technical skill base that includes architecture, building physics, structural and mechanical engineering and construction economics.

In 2008 the group was awarded the Howard Medal from the Institute of Civil Engineers (ICE) for their paper 'VIP: and their applications in building: a review'.

## Research expertise

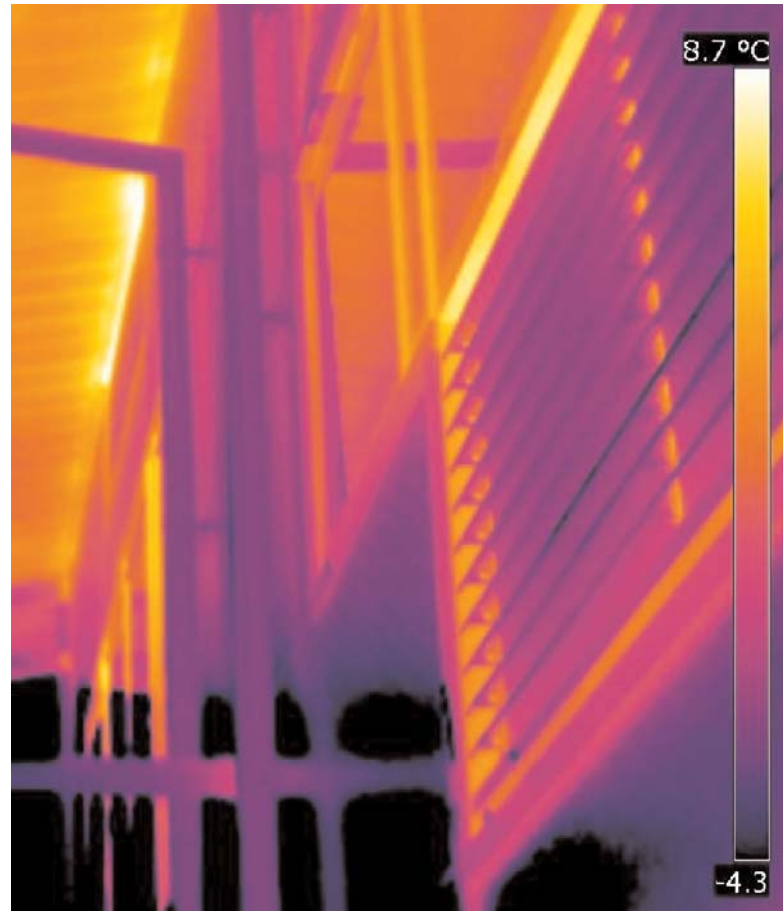
- Modern methods of construction and prefabrication
- Sustainable building design
- Construction and life cycle costing
- Steel, concrete, timber, masonry and glass construction
- Construction design guidance and regulation
- Building physics including: thermal, acoustic, structural and air-tightness testing and analysis
- Building envelope systems
- Product and systems development
- CAD and computer modelling

## External links

- Research and consultancy partnerships with practice and industry, especially in the area of modern methods of construction
- Strategic research partnerships with UK steel sector
- Host institute of the Corus Colorcoat Centre for the Building Envelope

## Training opportunities

PhD and research opportunities exist generally in the field of architectural technology and particularly in the areas of expertise listed above.



## Testimonial

*"The Group has a powerful portfolio of skills in the areas of construction technology and building physics and a long and consistent record of close to industry and pure research.*

*It has recently acquired new laboratory facilities, which complements the already excellent computer based facilities. These two combined will, I am sure, bring more benefits to the ongoing development within the construction industry in general and to the building envelope and offsite sectors in particular."*

Ian Clarke, Applications Development Manager, Tata Steel Colors

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## Example project work: FloodProBE

FloodProBE is a European research project with the objective of providing cost-effective solutions for flood risk reduction in urban areas. FloodProBE aims to develop technologies, methods and tools for flood risk assessment and for the practical adaptation of new and existing buildings, infrastructure and flood defences leading to a better understanding of vulnerability, flood resilience and defence performance. This research supports implementation of the Floods Directive through the development of more effective flood risk management strategies. The work is being undertaken in close partnership with industry, and is utilising pilot sites across Europe, to help provide practical industry guidance and cost effective construction solutions.

Existing general flood risk and vulnerability assessment methodologies are not sufficient in assessing the interaction of different infrastructure and damage estimations for the most vulnerable components and buildings. Therefore these will be extended and adapted to assess urban flood vulnerability and to identify critical (sub-) systems, based on the impact of failure of these sub-systems on the total urban system. A distinction will be made between critical and non-critical urban infrastructure and buildings, in order to improve the assessment of most vulnerable assets in particular.

The next stage of the project will develop cost-effective construction technologies and concepts for improving existing and new flood defences and for increasing the flood resilience of urban systems, buildings and assets. This will be done by developing and testing innovative technologies for new structures and for retrofitting and developing guidelines for the design and application of these technologies in the urban built environment.



### Selected recent research publications

- Ogden, R; Wang, X; Walliman, N; Kendrick, C. (Forthcoming) Multi-foil Insulation Review, Construction Materials. *Journal of the Institution of Civil Engineers*
- Lawson, RM and Ogden, R (2010) Pre-fabricated systems in light steel and modular construction, New Perspectives in Industrialisation in Construction, *CIB: International Council for Research and Innovation in Building and Construction*. CIB publication 329 pp. 371-380.
- Ogden, R. and Lawson, M. (2008) Hybrid light steel panel and modular systems. *Thin Wall Structures*, 46, pp.720-730
- Wang, X., Kendrick, C., Ogden, R. and Maxted, J. (2008) Dynamic thermal simulation of a retail shed with solar reflective coatings. *Applied Thermal engineering*, 28 (8-9), pp.1066-1073
- Havenith, G., Richards, M., Wang, X. et al (2008) Apparent latent heat transfer of evaporation from clothing: attenuation and heat pipe effects. *Journal of Applied Physiology*, 104, 1, pp.142-149
- Brode, P., Havenith, G., Wang, X. et al (2008) Non-evaporative effects of a wet mid layer on heat transfer through protective clothing. *European Journal of Applied Physiology*, 104, 2, pp.341-349
- Walliman, N., Baiche, B. and Ogden, R. (2008) Thin-joint glued brickwork: building in the British context Published. *Construction and Building Materials*, 22, 6, pp.1081-1092 (Online April 2007, Print June 2008)
- Kendrick, C. (2007) Briefing: Steel construction and thermal bridging. *Energy*, 160, EN3, pp.95-97
- Wang, X., Walliman, N., Ogden, R. and Kendrick C. (2007) VIP and their applications in buildings: a review. *Construction Materials Proceedings of the Institution of Civil Engineers*, 160, 4, pp.145-153. **Best Paper of the Year 2007 – ICE Howard Medal.**
- Kendrick, C. (2007) Steel Construction and thermal bridging. *Energy – Proceedings of the Institution of Civil Engineers*, 000, EN0, pp.1-3
- Baiche, B., Walliman, N. & Ogden, R. (2007) Thin-joint glued brickwork: A novel technique for the UK construction industry. *Masonry International*, 19, pp 97-112.
- Kendrick, C. and Walliman, N. (2007) Removing unwanted heat in lightweight buildings using phase change materials in building components: *simulation modelling for PCM plasterboard*. *Architectural Science Review*, 50 (3), pp.265-273
- Baiche, B., Kendrick, C. and Ogden, R. (2007) Airtightness in the recent Part L of the building Regulations: the case of buildings with metal envelopes. *Structural Survey*, 25 (5), pp.355-373
- Wang, X., Yuan, X. (2007) Reuse of condensed water to improve performance of an air cycle refrigeration system for transport applications. *Applied Energy*, 84, 9, 2007, pp.874-881

# Construction and Project Management Group

## Background

The Construction and Project Management Group brings together individuals with a wide range of expertise in the construction engineering and management fields. The work of the group is highly interdisciplinary and draws on disciplines as diverse as engineering, management, computer and social sciences and psychology to address significant challenges facing the construction industry. A particular focus is on the development and use of emerging digital technologies and innovations in sustainable building technologies in enterprise and project networks.

Research is conducted in partnership with organisations from a wide variety of sectors. The group undertakes both fundamental and applied research that provides industry and policy makers with innovative decision support tools and solutions for planning, procuring and delivering construction projects and services that maximise economic, social and environmental benefits to society.

## Research expertise

The areas of current interest include:

- Climate change and sustainable construction
- Emerging technologies and innovations for sustainable buildings
- Social networks, innovation absorption and diffusion
- Sustainable building retrofitting and maintenance
- Scaffolding and pallet rack structures
- Collaborative planning and supply network management
- Procurement, project and process management
- Risk analysis and management
- Lean construction and applied operations research
- Whole-life cost and value modelling
- Integrated design and production
- Information and knowledge management
- Knowledge-based systems and applied artificial intelligence
- Advanced digital technologies
- Building Information Modelling (BIM) and 4D/nD modelling
- Virtual prototyping

## Training opportunities

PhD studies in Construction and Project Management  
MSc. in Project Management in the Built Environment  
BSc. in Construction Project Management  
BSc. in Quantity Surveying and Commercial Management  
CPD and international training programmes



## External links

Internationally, we have established research links with several leading universities across the globe including Australia, China, Europe, and USA (for example, Hongkong PolyU, Middle East Technical University, Penn State University, Queensland University of Technology). We are also actively involved with international organisations such as the International Council for Research and Innovation in Building and Construction (CIB). Nationally, we have ongoing research links with other UK universities (for example, Brunel, Loughborough, Salford), professional institutes and organisations (APM, CIOB and RICS) and construction and property firms and consultancies (e.g. MACE, Best Foot Forward Ltd, Design Builder Software Ltd., Zedfactory Ltd.)

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## Example project work: An integrated decision support tool for the design of low impact buildings

An integrated decision support tool for the design of low impact building developments is being developed in collaboration with Best Foot Forward Ltd., ZEDfactory Ltd., Design Builder Software Ltd. and ItsOWorks Ltd., with funding from the Technology Strategy Board and the Engineering and Physical Sciences Research Council. Existing tools support the design process in a piecemeal fashion, do not interoperate and do not allow holistic assessments to be made. Additionally, they do not adequately address the front-end of the design process where critical decisions that have a significant influence on sustainability performance and costs are made. The tool is being developed to enable practising designers to systematically assess alternative low impact building design options for single buildings and entire developments against sustainability performance measures such as embodied and operational carbon emissions, wastes and costs simultaneously.



The work involves: establishing methods for measuring embodied carbon emissions and waste from construction materials, components and activities; establishing cost and waste drivers and methods of estimating project time and costs of designs that incorporate innovations in low impact and sustainable building technologies and methods at the early stages of the design process; developing integrated models for estimating embodied and operational carbon emissions, wastes, time and costs simultaneously; leveraging emerging Building Information Modelling (BIM) technology to develop easy to use interoperable decision support software components that implement the methods and models developed; and testing the tool on selected case studies.

### Testimonial

*"This software will allow a range of different users (architects, urban designers and other construction professionals) to easily develop 3D models of developments and immediately see the implications of their decisions on multiple performance measures such as embodied and operational carbon, wastes, and costs simultaneously on an on-screen performance indicator dashboard. The development of the tool as a plug-in to the free issue Google Sketchup 3D modelling software is an attractive proposition for many design practices which cannot afford expensive specialist software and want to improve the environmental performance of their designs. We are pleased to be contributing to this development and look forward to testing and using the system on all our projects."* Bill Dunster – ZEDfactory Ltd.

### Recent research publications

- Ren, Z., Anumba, C.J., and Tah, J (2011-Forthcoming) RFID Facilitated Construction Materials Management (RFID-CMM) – A Case Study of Water Supply Projects, *Advanced Engineering Informatics*.
- Tah, J.H.M., Zhou, W. and Cheung, F.K.T. (2010). Towards a holistic modelling framework for embodied carbon and waste in the building lifecycle. In *Computing in Civil and Building Engineering, Proceedings of the International Conference*, W. TIZANI (Editor), 30 June-2 July, Nottingham, UK, Nottingham University Press, Paper 82, p. 163, ISBN 978-1-907284-60-1
- E. Kurul, J.H.M. Tah, and F. Cheung. (2010). Does the UK built environment sector have the capacity to deliver sustainable development? *The 6th International Conference on Innovation in Architecture, Engineering and Construction (AEC)*, June 9-11, Pennsylvania, Penn State University. (**Conference Best paper Award for Innovations in Sustainability**).
- Keivani, R, Tah, J, Kurul, E, Abanda, H (2010) Green jobs creation through sustainable refurbishment in the developing countries, *International Labour Organisation, Working Paper No. 275*, Geneva.
- Ng A L Y, Beale R G and Godley M H R. (2009) Methods of restraining progressive collapse in rack structures, available online in *Engineering Structures*, doi:10.1016/j.engstruct.2009.02.029.
- Wood, B.R. (2009) *Building Maintenance*, Wiley-Blackwell, New York and Oxford.
- Sahin Guchan, N., and Kurul, E. (2009) A history of the development of conservation measures in Turkey:from the mid 19th century until 2004, *METU Journal of the Faculty of Architecture*, 26 (2), p. 1-18.
- F. Cheung, M. Wong and M. Skitmore (2008) A study of clients' and estimators' tolerance towards estimating errors, *Construction Management and Economics*, 26(4), p. 349-362.
- Tah, J.H.M. (2008). Future Agent-Driven Virtual Prototyping Environments in Construction (Chapter 15) in *Virtual Futures for Design, Construction & Procurement*, Edited by: Peter Brandon and Tuba Kocatürk, Blackwell Science.
- Dikmen, I, Birgonul M.T., Anac, C., Tah J.H.M., Aouad, G. (2008) "Learning from Risks: A Tool for Post-Project Risk Assessment", *Automation in Construction*, vol. 18, no. 1, pp42-50.

# Real Estate and Land Policy Group

## Background

The Real Estate and Land Policy Group brings together expertise on a wide range of topics relating to the operation of land and property markets, real estate development and land and housing policy. A major part of our work is on the impact of land and housing markets/policy on broader development processes particularly for enhancing urban sustainability.

This includes research themes which cover low carbon development, sustainable real estate, corporate social responsibility and urban equity. At the same time our research addresses broader market-based fundamentals such as valuation and emerging areas of research in real estate including behavioural finance. We have a strong track record in international comparative research including developing and transition economies while at the same time maintaining established areas of expertise on local and national topics.

## Research expertise

- Sustainable real estate (residential and commercial sectors)
- Brownfield regeneration
- Urban futures and scenario-based studies
- Globalisation, land markets and urban development in developing and transition economies
- Impact of ICT on the property market and urban development
- Conservation of historic environments
- Changing property markets and local economic development
- Housing and land policy
- Valuation
- Corporate real estate

## External links

Research and training links with several leading universities across the globe including Eastern Europe, Japan, China and Brazil (for example, Melbourne University, Georgia State University, Osaka University, Moscow Higher School of Economics, Tsinghua University in China, and Federal University of ABC Region Brazil). Actively involved with international organisations including membership of the private sector working group of UN-Habitat, management board of the European Real Estate Society (ERES), and the UK representative to FIG Commission 7.

Ongoing research links with other UK universities (for example, University of Oxford, Cambridge University, Salford University, and UCL), professional institutes and organisations (BRE, IPF, CORENET and RICS) and property firms and consultancies, (Berkeley Homes, Prudential, GVA Grimley, King Sturge)



## Testimonial

Commenting on the completion of the European Investment Bank EIBURS funded project on social sustainability and urban regeneration, Simon Brooks, European Investment Bank Vice-President responsible for the United Kingdom, said:

*"This study is an important contribution to improved understanding of social sustainability amongst policy makers and reflects the EIB's involvement in supporting enhanced technical and economic understanding of urban renewal and development. The report will contribute to better urban regeneration project design and socially sustainable investment across Europe".*

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## Example project work

### 2050 Vision: UK-Brazil Urban Research Network

This project highlights the international scope of our work. Funded by the University of Oxford's Martin School (Future of Cities), it has established a research network to develop research capacity and facilitate transfer of knowledge on the interface between globalisation, climate change, urban development and urban governance in Brazil and UK and how this impacts on local economies, local livelihoods and access to resources. The project is led by Dr Ramin Keivani in collaboration with Dr Sue Brownill and Prof. Tim Dixon from Oxford Brookes as well as Prof. Jeroen Klink and Prof. Rosana Denaldi from the Federal University of the ABC region in Sao Paulo Brazil. In addition the project also encompasses a larger group of researchers from other institutions including University of Sao Paulo, Federal University of Rio de Janeiro and PCU Campinas in Brazil. In UK we also have researchers from University College London, University of Oxford, University of Newcastle, University of Birmingham and London South Bank University who are currently members of the network.



The project will be addressing research themes around a central question of how urban governance is responding to the challenges of globalisation and climate change and whether more flexible forms of governance capable of meeting such challenges are emerging/possible.

Further details available at: [www.brookes.ac.uk/schools/be/oisd/urbanpolicy/network](http://www.brookes.ac.uk/schools/be/oisd/urbanpolicy/network)

### Anglo-Japan Symposium on Brownfield Regeneration 2010

A major symposium on the shared experience of bringing brownfield sites back into use in England and Japan was recently held at Osaka University. The symposium was held on 10-13 December 2010 and was attended by some 30 invited delegates from academia and practice in both countries. A key focus of the symposium was the recently completed RICS Education Trust/Kajima Foundation research on 'Cities in Recession: Urban Regeneration in Manchester and Osaka and the Case of Hardcore Brownfield Sites'.

### Re-engineering the City 2020-2050 EPSRC Retrofit 2050

RETROFIT 2050 is a major new EPSRC funded interdisciplinary project aiming deliver a 'step change' in current knowledge and capacity to underpin the transition to urban sustainability. Working with our project partners and other key stakeholders we will illuminate challenging but realistic social and technological options and pathways for the systemic retrofitting of two core UK city regions: Greater Manchester and Cardiff/South Wales.

The OISD work package (led by Principal Investigator, Professor Tim Dixon - Director of OISD and Professor of Real Estate - with co-investigators Professor Ray Ogden and Professor Georgia Butina-Watson) will focus on developing an Urban Technology Foresight Laboratory, which will, through interaction between scientific experts, practitioners and policy users, identify and characterise prospective disruptive technologies and systems innovations, and provide long-term guiding visions and technology-based roadmaps for urban retrofitting. The research will focus on energy, water and waste in particular.

Further details available at: [www.retrofit2050.org.uk](http://www.retrofit2050.org.uk)

## Selected recent research publications

- Colantonio, A., and Dixon, T (2010) *Urban Regeneration and Social Sustainability*, Blackwells
- Dixon T., Ennis-Reynolds, G., Roberts, C., Sims, S. (2009) 'Is there a demand for sustainable offices? an analysis of UK business occupier moves (2006-2008)', *Journal of Property Research*. 26(1), pp. 61 - 85
- Werna, E., Keivani, R., and Murphy, D. (2009) *Corporate Social Responsibility and Urban Development: lessons from the South, London and New York*, Palgrave.
- Anderson, J and Shiers, D and Steel, K. (2009) *The Green Guide to Specification*, Fourth Edition, Wiley-Blackwell.

## Training opportunities

- PhD studies in Real Estate and Land Studies and Urban Futures Doctoral Training Programme
- MSc degrees in Real Estate Management, and International Real Estate
- BSc degree in Real Estate Management
- CPD and international training programmes

# Recent initiatives

## The Technology Laboratory

A new technology laboratory to support step-change improvements in the sustainability and energy performance of construction systems, as well as structural testing and accreditation, has been established at Oxford Brookes University. The facility will meet many of the current and future needs of the off-site and cladding sectors.

Oxford Brookes University, through its 'Technology' research group has an outstanding reputation for the quality of its work with industry. In partnership with business, the University has pioneered many developments in modular and light frame construction, innovation in cladding and building envelope solutions and developments in many other related areas. It also has a long standing research programme aimed at improving the energy performance and sustainability of buildings, building performance monitoring and post occupancy evaluation.

The laboratory will increase the University's capacity to support the off-site sector with which it has historically strong links. In particular the facility will be seeking opportunities for product development, accreditation and performance testing in relation to existing and forthcoming standards. This complements existing strengths in the application of predictive computational analysis, now used extensively to analyse and improve buildings and for certification and compliance purposes.

The facility at Oxford Brookes helps bridge the gap between leading edge research and real building performance. Testing capabilities include structural performance, robustness, air-tightness, and thermal performance.

### Supporting a low carbon future

The laboratory provides a substantial additional resource to support the development of low-carbon sustainable construction solutions. The carbon reduction agenda provides challenges for all sectors, but also presents significant opportunities for the off-site sector to demonstrate benefits in both embodied and operational energy, waste minimisation and environmental impact, as well as improved quality and value.

### Supporting testing and accreditation

Building regulations are developing rapidly particularly in areas such as thermal performance (Building Regulations Part L will be revised again later this year) and CE marking is compulsory for most construction components.

As a result of these and other developments, there is an increasing need for testing and accreditation of construction products in order to demonstrate compliance with codes and regulations.

Many components and building systems struggle to comply with the regulations and require certification. Proven detailed performance avoids default penalties in thermal calculations and therefore delivers significant commercial advantage. The laboratory is equipped to provide the necessary testing that many manufacturers require to demonstrate compliance and for accreditation, including CE marking, SCI Assessed, 'Q' Mark, NHBC etc.



*Technology laboratory: external view*



*Technology laboratory: internal view*

13.1.2010

## Urban Futures Doctoral Training Programme

The Urban Futures Doctoral Training Programme forms part of Oxford Brookes University's ambition to develop a site of excellence for doctoral training provision.

The programme includes a substantial training element in research methods and futures methodologies, a seminar series bringing together students and key researchers in sustainable futures, and provides students with the opportunity to develop their area of interest in a focused and inter-disciplinary environment.

The Urban Futures programme has a truly interdisciplinary focus and is designed to address the key challenges of global urban growth, and the implications not only for the built and natural environments, but also the creation of sustainable urban futures. The programme places particular emphasis on understanding environmental and technical challenges; behavioural and policy context; futures thinking; and societal impact. There is therefore a strong urban policy and practice component.

The programme builds on the research expertise within the Oxford Institute for Sustainable Development and brings together an interdisciplinary team of experts from which supervisory teams will be formed.

These include:

- Prof Tim Dixon, the Urban Futures Programme Leader, who is also Director of OISD (sustainable urban form and futures studies);
- Dr Sue Brownill, the Programme Manager, who also runs the School's existing doctoral training courses (sustainable urban form and futures studies);
- Prof Georgia Butina Watson (urban design);
- Prof Allan Hutchinson (sustainable transport);
- Dr Rajat Gupta (carbon measurement/reduction);
- Dr Tim Jones (sustainable transport);
- Prof Ray Ogden (architectural technology);
- Dr Fionn Stevenson (carbon measurement and reduction);
- Prof Joe Tah (construction and IT);
- Dr Stewart Thompson (bio-diversity);
- Prof Stephen Ward (urban utopias) and
- Elizabeth Wilson (climate change).

Further details on potential supervisors can be found on the University's web pages: [www.brookes.ac.uk/res/experts](http://www.brookes.ac.uk/res/experts)

Examples of scholarships include:

- The Adaptation of Historic Inner City Areas to Flood Risks in the UK and the Netherlands
- The Effectiveness of Participatory Development Processes in Improving the Environmental Sustainability of Informal Urban Dwellings

For more information and details of currently available scholarships see:

[www.brookes.ac.uk/schools/be/researchdegrees/studentships](http://www.brookes.ac.uk/schools/be/researchdegrees/studentships)



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Scholar Victoria Thomson



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