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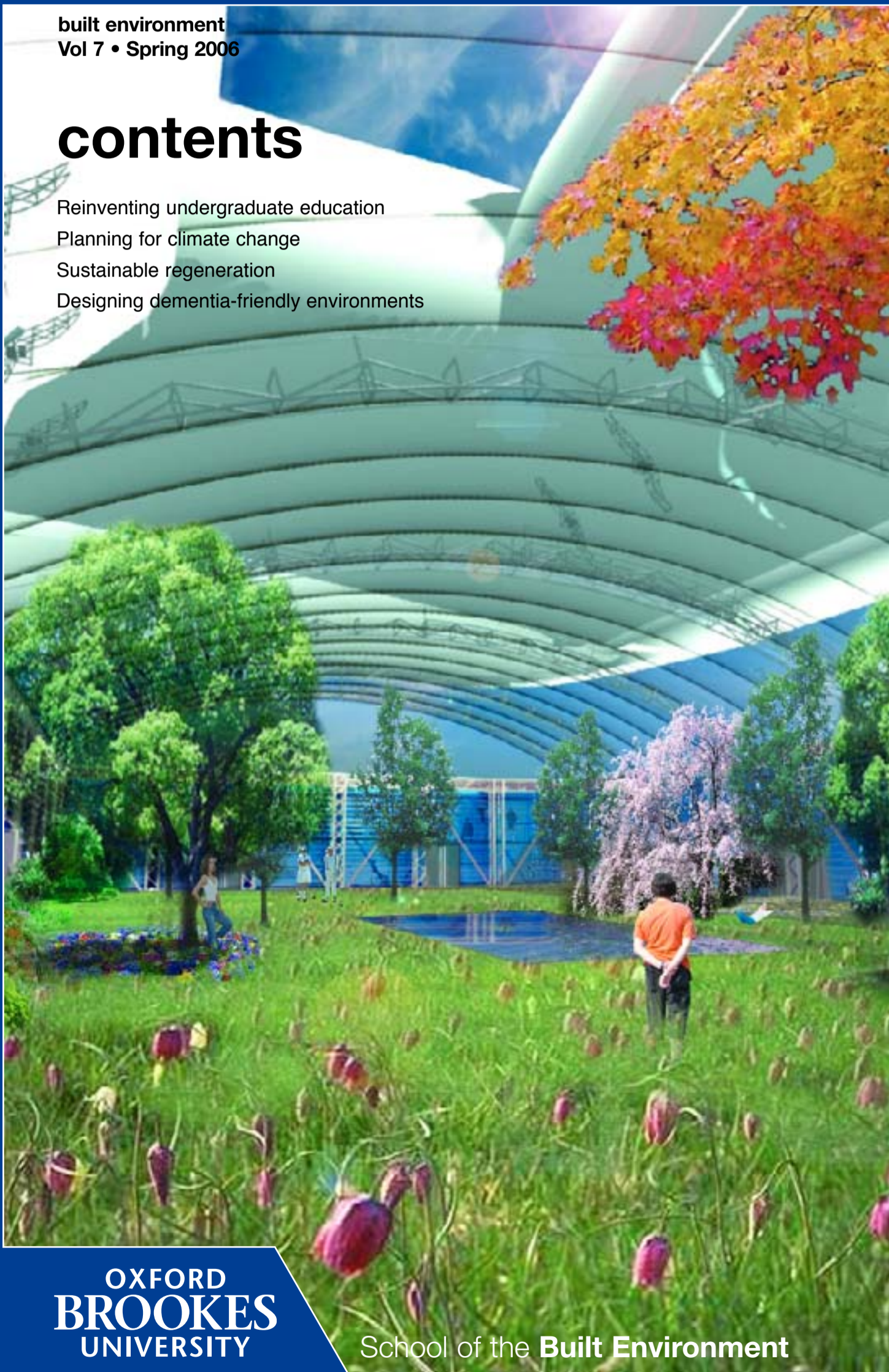
built environment
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OXFORD
BROOKES
UNIVERSITY

School of the **Built Environment**



Research Blossoms since OISD Launch



Following their official launch by Jonathon Porritt in July 2004, the six OISD research groups (Impact Assessment and Spatial Planning, Urban Policy and International Development, Urban Design,

Sustainable Urban Environments, Architecture, Culture and Technology, and International Land Markets) have formed the nucleus for a host of research activities.

With an annual turnover just under £2 million, the Institute now has approximately 100 doctoral students. At any one time the OISD has approximately 60 research contracts, with funding from a range of research councils, charities, and government departments.

Many of our new initiatives are covered below, and in the individual department sections, but a particular theme for 2006 is achieving research synergy across our groups, focusing on high profile policy issues in sustainable development. A series of events in 2006 will seek to 'incubate' new research initiatives in areas of strong staff expertise. The first 'incubator workshop' was on brownfield development in February 2006. Other topics in the pipeline include 'healthy and family friendly communities', 'smart growth', and 'skills/training in BE practice'.

Another important theme is the encouragement of business development opportunities emanating from our research portfolio. With support from the HEFCE Higher Education Innovation Fund (HEIF 2) we are having considerable success in developing strong commercial links with partners in industry. The work of Professor Ray Ogden with Corus is a prime example.

Corus have agreed to fund the Corus Centre for the Building Envelope along with a Corus professorship. The work of Dr Rajat Gupta also has tremendous commercial potential, and opportunities for Planning and Real Estate and Construction are also being explored. In addition, the School has gained a Knowledge Transfer Partnership with Unite, while several others are under consideration.

Many of these initiatives are now based in the new Buckley Research Building on the Headington campus. About 25 OISD staff, covering a range of our research groups, moved into the top floor in summer 2005. New synergies are emerging especially as there are also benefits to being located above the University's Research and Business Development Office!

Professor John Glasson

Associate Dean (Research and Consultancy)

Planning Aid

Sue Brownill and Juliet Carpenter are undertaking an evaluation of the national Planning Aid service for the RTP1. Planning Aid is a government-funded service that provides free and independent advice on planning issues to individuals and communities who cannot afford to hire a planning consultant.

The research has been running since March 2004, and has highlighted a number of barriers to community involvement in planning, including the lack of an appropriate level of resources, the lack of engagement by some key stakeholders, and a sense from some communities that planning isn't relevant to them. However, a number of success stories have also emerged, including the value of environmental education and working with schools to engage people in thinking about planning issues and their local environment.

The evaluation is due to report the Year 3 findings in July 2006.



DECoRuM uses GIS software, MapInfo, to extract input data for the underlying energy models and display results in the form of colour-coded thematic maps with an individual dwelling displayed as the basic unit of resolution (Figure 1 - top)

Generation of thematic maps showing the solar potential for individual dwellings (Figure 2 - left)

Computer model tracks energy loss in buildings

Research fellow Dr Rajat Gupta has developed a unique computer mapping system which can pinpoint the amount of carbon dioxide given off by individual buildings. It has already been used to produce a map of an area of north Oxford highlighting emissions from homes and offices.

DECoRuM is a GIS-based domestic energy, carbon-counting and carbon-reduction model with the capability of measuring energy consumption in, as well as CO₂ emission, from the UK housing stock. It can also be used to estimate the cost of a range of measures to reduce emissions.

DECoRuM estimates current energy-related CO₂ emissions from existing UK dwellings, aggregating them to a street, district, and city level. This enables it to evaluate the potential and financial costs for domestic CO₂ emission reductions by deploying a whole range of best practice energy efficiency measures, low carbon systems and renewable energy technologies on an urban scale. The Oxford case study has shown that it can be used to help planners monitor and improve the energy efficiency of both public and private housing, as required by the Home Energy Conservation Act.

DECoRuM is now on its way to becoming an industry standard in the UK for carbon emission reduction planning. Discussions are currently taking place with the London Borough of Merton as well as Oxford City Council. Funding has been secured from the South East Proof of Concept (SEPOC) Fund for the further development and market assessment of the programme. This will lead to the production of a robust GIS-based toolkit for use by UK local authorities, energy advisers, building surveyors and real estate professionals to assist them in counting, costing and reducing domestic carbon emissions.

Drive to build sustainable public buildings

Brookes' researchers are playing a key role in a Europe-wide project to encourage the building of a new generation of energy efficient public buildings.

Given that public-access buildings tend to consume large amounts of energy, the project could lead to significant energy saving and reduction in pollution.

The aim of the SARA project is to encourage the development of sustainable, cost effective, public-access eco-buildings that can be replicated on a large scale in different locations. They will be equipped with advanced sustainable energy technology integrated with innovative architecture, and each building in the project will also have a combined monitoring and building management system (BMS).

SARA involves the construction of eight new public buildings in eight different countries. Teams of researchers from each country will work in parallel on specific issues such as the integration of BMS, remote monitoring, and internet based dissemination of information. It is hoped that the SARA project will make a significant contribution to the development of future European energy policy and the promotion of innovative sustainable technologies.

Brookes is one of two UK partners, the other being the University of Southampton. The consortium includes



partners from Austria, Slovenia, Poland, France, Italy, Uzbekistan and Germany, and is led by Universitat de Barcelona Spain.

A new administrative building at the University of Southampton will form the basis of research in the UK. It makes use of an atrium to maximise energy conservation, while a photovoltaic system on the roof (paid for with a DTI grant) has been designed to optimise energy generation and conservation.

The Oxford team is led by Sue Roaf and Manuel Fuentes, and includes Maita Kessler and Fergus Nicol. They will carry out a study of the Southampton building to evaluate its efficiency, as well as measuring student and staff satisfaction with the level of comfort in the new building.

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