Institution: Birmingham City University

Unit of Assessment: 16 Architecture, Built Environment and Planning

a. Overview

The Centre for Environment & Society Research (CESR), attached to the Birmingham School of the Built Environment (BSBE), carries out applied planning research at the interface between the built and natural environment. The group has worked across disciplinary and theoretical boundaries to tackle a range of complex policy challenges. This work is set within cross-cutting themes of ecosystem service governance, and environmental and social change in multi-functional landscapes, drawing on lessons from history to plan for future adaptation to environmental change. The group has significantly enhanced its research excellence since RAE2008, making empirical, methodological and theoretical contributions that have shaped research, policy and practice agendas across the built and natural environment. This has been facilitated by a rise in research income, in particular from the Research Councils, and has led to an increase in research activity by CESR's leading researchers. Hence we have achieved the goals of our post-RAE2008 research strategy to increase publications, funding and research students, using this to contribute to research-led teaching enhancing student experience and to the development of knowledge exchange and staff development for professional bodies and industry.

b. Research strategy

Following a sound return in RAE2008 to Town and Country Planning, we have consolidated in order to achieve greater coherence and significance in examining the social, organisational, technical, psychological and historical development of planning, delivering and managing the built environment, and extended our focus to its interface with key issues and opportunities within the natural environment. Links between research and practice are interlocking concerns in much of our work, and in 2013 it is UoA16 that best accommodates the breadth and direction of our studies of spatial, environmental and historical planning. Our current research strategy is informed by Birmingham City University's institutional research strategy (2014-2020) "to be recognised nationally as a research-active University, with distinctive and well-supported niche areas of international excellence and regional relevance", whilst continuing to make significant contributions to the professions and industry. CESR is in one of five new "Research and Knowledge Exchange Clusters" in BCU's institutional research strategy, which aims to significantly increase external research funding, enhance the quality of research outputs and create institutional structures. Linked to this, CESR's research strategy aims to: (a) encourage and support staff to publish high quality peer-reviewed outputs alongside publications aimed at policy and practitioner audiences; (b) to extend the reach (across multiple sectors and end-users) and significance of research impact (influencing decisions in policy and practice around the management of environmental and social change, and the governance of ecosystem services in the built and natural environment); (c) develop further external funding through Research Councils, Government departments/agencies and industry; (d) create strategic alliances with the policy and practitioner communities to develop new collaborative research opportunities that can respond to the needs of the policy and practitioner communities and increase the impact of our work; (e) enlarge and further enliven the research student community in selected areas of research; and (f) develop research led teaching to maximise the learning experience of all students.

BSBE's professional focus means there are annual partnership meetings with accrediting professional bodies. These partnerships have played an active role in shaping our research strategy, and continue to play an important role in maintaining research excellence (through regular review of outputs) and ensuring the relevance of our research to professional practice. For example, **Scott** is a member of the RTPI's policy research committee, assisting CESR to shape RTPI's research agenda. The research strategy is also closely monitored through an Individual Performance Review process and mentoring (IPR: see *People*) such that specific targets are negotiated relating to particular areas of the research strategy. At Faculty level a Research Policy Committee examines strategy and achievement, reporting to its University-level counterpart; while frequent meetings of a Research Management Group discusses the detailed implementation of strategy and policy.

Strategic investment has been made centrally in supporting and managing research bids, in investing in wider access to research literature and related resources (e.g. via ScienceDirect), and in PhD studentships. In addition to this, a number of PhD studentships were financed via QR funding from RAE. Within the UoA we have built on the achievements of the last decade and, working in partnership with professional bodies, we have responded effectively to rapidly-changing circumstances in the professions and industries we serve. During this time, we have strategically built research capacity among staff, through the IPR process, mentoring and Continuing Professional Development.

During the assessment period, there has been a growing emphasis on interdisiciplinarity with staff increasingly leading research collaborations with participants from multiple disciplines (e.g. **Scott**'s RELU project and **Reed**'s DEFRA projects). Our increasingly interdisciplinary approach is crucial for original thinking about spatial theories, processes and practices that are capable of meeting complex, real-world challenges. Staff have advanced debates both inside and beyond the discipline by publishing in leading planning and environmental journals (e.g. *Progress in Planning*), as well as in journals from fields as diverse as economics, politics, geography, history, environmental management, environmental science and ecology; and editing international and interdisciplinary books (**Larkham** and **Scott**).

CESR research has attracted significant and prestigious external funding since 2008, including from the Research Councils' Rural Economy & Land Use programme, the NERC/ESRC/AHRC/DEFRA funded follow-on phase to the National Ecosystem Assessment, DEFRA, NERC, AHRC and RICS. This has led to the publication of 53 papers in peer-reviewed journals between 2008-2012, for the whole of CESR. Of these, 26 were by **Carter, Larkham**, **Reed** and **Scott**, whose best outputs have been submitted to REF.

CESR research explores the interface between different environments, disciplines and theories to understand and inform landscape planning and change in both urban and rural environments. We work in edge spaces between multi-functional rural and urban environments (e.g. planning in the rural-urban fringe), between the past and the future (e.g. learning from history to plan for the future), and between different sectors and stakeholder groups (e.g. facilitating engagement between businesses, policy stakeholders and landowners under the Peatland Code). This body of work has made academic contributions under the following two broad themes.

Ecosystem service governance:

- We have developed **new approaches to research, policy and practice for the sustainable management of multi-functional, dynamic environments**, such as the rural-urban fringe, forests, uplands and drylands. **Scott**'s research with **Carter, Larkham** and **Reed** emphasises the need to integrate rural and urban policy frameworks, and to consider rural aspects of the fringe more explicitly in decision-making (Scott, 4). **Reed**'s research shows how it is possible to quantify and map how such decisions are likely to affect multiple ecosystem services, identifying potential trade-offs and complementarities between services (Reed, 1). When this leads to environmental degradation, **Carter**'s work shows how this can sometimes reinforce bonds between residents and the place, and through engagement with the arts, can lead to the development of innovative remediation options (Carter, 1, 2). **Reed**'s research attempts to tackle the land degradation by assessing and integrating local knowledge into national and international policy responses (Reed, 3, 4). By combining an Ecosystem Approach with Spatial Planning **Scott, Carter** and **Reed** argue for a move away from disciplinary-based paradigms in favour of a more inclusive and accessible vocabulary (Scott, 4). In this way, the research provides a range of tools that can enable an Ecosystem Approach and the ecosystem services framework to be applied in policy and practice, for example via Payments for Ecosystem Services (Scott, 4; Reed, 1).

Social and environmental change in multi-functional landscapes:

- Our research **demonstrates the need for improved participation in planning and governance of dynamic and multifunctional landscapes**. **Scott**'s work demonstrates the importance of capturing the actual experiences of multiple stakeholders, rather than relying purely on expert-led or visual approaches to landscape assessment (Scott, 2). Similarly, **Reed** and **Carter** consider how broader processes of social learning and

knowledge management can facilitate collaboration between disparate stakeholder groups and localize environmental decision-making (Reed, 1, 2; Carter, 1). This aligns with **Larkham**'s work on the history of planning, which demonstrates the need for meaningful public engagement during the modernization of urban spaces and infrastructure, and the need to build capacity for participation among the public as a precursor to successful engagement (Larkham, 1, 2). **Scott** takes this a step further, drawing on case study research from community ownership and management, to shift planning practice away from confrontation and legal challenge, towards new models of local engagement and civic and environmental responsibility (Scott, 3). Finally, **Reed**'s research shows how well designed participatory processes can enhance the quality and durability of environmental decisions (Reed, 1, 2), and combine insights from local and scientific knowledge to inform policy and practice (Reed, 3, 4).

Cutting across each of these themes, our research **draws on lessons from history to plan for future adaptation to environmental change**. **Reed**'s research demonstrates the need for a long-term approach with multiple response options when considering adaptation to environmental change, as some short-term adaptations can increase long-term vulnerability to unforeseen future changes (Reed, 1, 4). **Larkham**'s research draws on post-World War 2 planning history to consider how rapid decision-making during and after disasters can enable successful adaptation whilst still considering multiple values (Larkham, 1). However, for planners to learn successfully from the past, **Scott** identifies the need to put resources into capturing and sustaining institutional memory particularly when governance structures are changed (Scott, 4).

This research has had a number of major impacts, some of which are detailed in accompanying case studies, for example:

- Research on the Rural Urban Fringe (RUF) led to the development of the learning tool, "RUFopoly", which has been demonstrated to over 300 people from across the HE, public, voluntary and business sectors and in schools across the UK, and elsewhere internationally, to facilitate new ways of engagement, learning about environmental decision-making and planning (see Case Study 2)
- Work on the National Ecosystem Assessment Follow-on project has led to a decision-making toolkit to help policy and decision makers maximize the benefits of using an ecosystem approach in their work (see Case Study 2)
- Research on UK peatlands has led to DEFRA funding the development of a UK Peatland Code to finance peatland restoration, which it launched in 2013

Research on knowledge exchange has led to the development of Knowledge Exchange Guidelines for the Living with Environmental Change partnership (the UK's largest funder of environmental research). Training based on this research is now being rolled out nationally across the Higher Education sector and Government agencies/departments that commission research (www.sustainable-learning.org/training)

c. People, including:

i. Staffing strategy and staff development

The staff contributing to this UoA are based within BSBE, whose activities are based more broadly around the improved management of the built environment. This submission focuses on areas of research excellence and impact within the school's wider research portfolio, which includes areas such as Building Information Modelling, real estate practice and conflict resolution. The School has been able to make a number of staff appointments, which have enhanced research culture and capabilities. **Scott** was recruited at Senior Lecturer level in 2009 but rose to Reader and then Professor, to provide research leadership in environment and spatial planning within CESR; **Reed** was appointed to an innovative position in 2012 as Professor in Interdisciplinary Environmental Research, specifically to build capacity for interdisciplinary research in CESR and link to other emerging environmental research across the Faculty; **Carter** was appointed in 2011 as a Lecturer. A number of junior staff (e.g. Adams, Sidoli, Amidu) have brought research capability to be further developed in the next REF period. CESR staff have also benefited from training on embedding impact into research, which **Reed** *et al*. developed in collaboration with the Research Councils' Living with Environmental Change partnership, and which is now delivered nationally to

Universities, learned societies and Government agencies/departments who commission research.

The growing importance of research and building a research culture is reflected in our recruitment processes. **Scott**, **Carter** and **Reed** reflect the expectation that all new academic staff should combine teaching and research expertise, and this is embedded in all staff contracts. Research performance is part of the annual staff IPR appraisal procedure (which, for REF-active staff, is carried out by the School's Associate Head (Research)) and specific time is allocated within a well-developed and transparent Workload Allocation Model (WAM) for research, scholarship and development activities (e.g. **Scott** and **Larkham** have 60% allocations). Within the School, there are four clusters which provide strategic leadership in teaching and research activities. The WAM is sufficiently flexible that periods of research leave for specific tasks can, and have been, negotiated (e.g. sabbaticals) and WAM allocations for externally-funded research projects are put in place with other duties reallocated as appropriate.

Resources are provided for new staff to develop their research through individual staff development allocations of time and resources, identified and monitored through IPR. There is also a strategy of growing our PhD students into lecturing appointments (e.g. Collins and Curzon). Currently four staff are being supported to undertake doctoral research, with specific time and resources allocated. Mentoring arrangements help to develop the publication capacity of new appointees, practice based staff and PhD students. These staff and students also attend the faculty research seminar series and related events, and receive targeted support (financial and otherwise) to contribute to conferences and publish their work. The inclusive approach outlined above has won the UoA's host Faculty of Technology, Engineering, and Environment (TEE), the Investor in People award in 2012.

The Centre has a group of visiting and honorary staff (Professors and Fellows) whose contribution to research profile and culture reflects their particular skills, experience and motivation. Prof Wakeford is an experienced former government chief executive and OECD Rural Chair. He is an active member of CESR's UKNEAFO research team and is currently delivering a series of international lectures (Russia, USA) as part of a wider global land initiative, where he is chairing a session in the 2nd Global Land Project Open Science Meeting, Berlin, 2014 with **Scott** as a presenter. Overseas Visiting Fellows work with our staff on research and publications, and have arranged periodic residential visits to Birmingham, some funded by the Centre. They include: Dr Joe Nasr (Ryerson, Toronto) whose innovative work on urban agriculture, "Carrot City", was exhibited in several venues in Birmingham in 2012 as part of an international travelling exhibit programme; Dr Barbora Lipovska (Nitra), funded by a Leverhulme Visiting Fellowship to work on attitudes to garden visiting as a temporary land use change (both working with **Larkham**); and other international scholars from China, Malaysia and Turkey.

ii. Research students

During the current REF period, 19 PhD students have registered, of which four have completed and eleven are still studying. Our aim is to integrate research students as closely as possible within the specialisms and practice of the Centre. Recent completions have exemplified the range of our vision, from exploring property developers to fractal geometry and urban form. Many projects are cross disciplinary in character and demonstrate the complexity of the field but also have a practice focus, and our recent recruitment of research students in Building Information Modelling demonstrates this. Research students have contributed to externally-funded research projects relevant to their own work, and as appropriate, research students have been given part-time research contracts on these projects, with mentoring and career guidance to enhance their employability. For example Hardman (PhD awarded 2013) provided support on two research projects led by **Scott**, which in combination with his teaching experience helped him to secure a lecturer position at Salford University.

The research students form an integral part of the School/Centre community, and have shared offices either with academic staff or other research students from other disciplines. There is a rigorous selection process, University-wide initial training programme (Postgraduate Certificate in Research Practice), 6-month review process, and preparation for viva and career development. This is overseen by a Faculty Director of Research Degrees (who is also the School's Associate Head (Research)). Supervisors are likewise managed and monitored, and there is University-wide training for supervisors and viva chairs (much of which is delivered by **Larkham**). Research

student processes are managed within the Faculty by a Faculty Research Degrees Committee chaired by the Director of Research Degrees, which meets monthly; its decisions are ratified for quality assurance purposes, and strategic policy made, by a University Research Degrees Committee chaired by a Pro Vice Chancellor.

Students are encouraged to contribute to teaching programmes (for which there is separate University-wide training), to relevant externally-funded research projects, and to contribute to internal (Faculty and University) and external research conferences and publications. A Centre Working Paper series is a useful initial publication outlet (http://www.bcu.ac.uk/research/-centres-of-excellence/centre-for-environment-and-society/cesr-working-paper).

Finally, the University has a formalised ethics policy, indeed Centre staff contributed to a recent new cross-University ethics conference which has become an annual event. All research projects, including research degrees, are reviewed by a Faculty Ethics Committee and this also forms part of University-level quality assurance procedures for external funding bids. Likewise, all research and appointments in the Centre adhere to the University's Equal Opportunities Policy Statement, and the Centre actively assists the University in its implementation of this policy e.g. assisting in the collection of data to help identify and remove barriers to equal opportunity.

d. Income, infrastructure and facilities

The research infrastructure fully supports our approach to research. The wider infrastructure of the University allows collaboration both within the Faculty, where there are developing dialogues with Engineering and with Digital Media, and outside the Faculty with collaborations with the Business School particularly in knowledge management, the School of Architecture, particularly in urban design, sustainability and environmental design, and the School of English, in philosophy, knowledge and expertise. Significantly **Scott** drew on the links within the RELU project to enable world-wide dissemination of the results at a WebEx conference and for the design of the video policy briefs.

Research culture is supported and enhanced through regular events (research seminars and 'cafes', staff development workshops, Faculty and University research conferences, project-specific conferences and workshops). Some are specific to this UoA and School, but most are accessible widely across the University and to reach out to public, professional and industry groups.

We have been funded from a range of sources since 2008, including Research Councils (ESRC, AHRC, NERC, RELU and the LWEC partnership), RICS, Defra and Natural England, with many of these demonstrating the focus of our work on delivering world class research that can be used in policy and practice. Notable achievements include:

- £200K from the Research Councils' Rural Economy & Land Use (RELU) programme for work on the Rural Urban Fringe (**Scott, Carter, Reed**)
- £465K for three work packages of the NERC/ESRC/AHRC/DEFRA funded follow-on phase to the National Ecosystem Assessment (NEAFO) (**Scott, Reed, Carter**, Wakeford)
- £200K from DEFRA and NERC for five projects on Payments for Ecosystem Services and stakeholder analysis (**Reed, Scott**)

Smaller amounts of funding have been received from RICS for work on the knowledge base of property valuation, and from local authorities for work on implementing community-based planning approaches, and on sourcing of construction materials. Boyd won £34K jointly with the School of English from AHRC for work on a Philosopher in Residence in construction companies which explored the development of expertise collaboratively with three companies. In addition to this, much individual research is funded internally, some via a University trust fund, which provides additional support for the Centre. Future funding is being sought from Research Councils and will also be developed through alliances with businesses and local authorities. The University focus on such alliances and the long-standing reputation of BSBE in the region and the professions is a significant advantage here.

Research administration is supported at Faculty and University level. At the former, administrators support all research students and associated processes, and promote research infrastructure and culture. A Research Manager has a wider remit in supporting research culture and bids, while a Project Manager helps manage externally-funded projects, once under way. Faculty Finance staff develop the funding elements of bids. An Associate Dean (Research)

oversees these processes. At University level, staff in Research Innovation and Enterprise provide advice and support bids, including running dummy panels for external bid quality control, and a sign-off process that, for large bids, includes the Vice Chancellor.

e. Collaboration and contribution to the discipline or research base

As has been indicated, much of the work in the Centre is designed to be interdisciplinary or transdisciplinary (where stakeholders are integrated with interdisciplinary research teams). First pioneered by the RELU Rural Urban Fringe project (**Scott, Carter, Reed, Larkham**), the likely users of CESR research have increasingly been integrated into research teams from the outset (including environmental managers, community groups, business, farmers, national and local government organisers). In this way, knowledge is co-produced, and there is wider ownership over the outcomes of research, which are more likely to be embedded in policy and/or practice. This has led to a wide range of often innovative dissemination products, that have helped CESR research make a broader contribution to the discipline and to wider society (e.g. video policy briefs, a board game and the use of music and art).

CESR staff have co-authored journal articles with colleagues from over 100 research institutions internationally, and have edited books with academics in Newcastle, Westminster, Aberdeen, Chicago and Turkey. Research projects have included collaborations with a number of Universities around the world, the NFU, Natural England, LEPs, National Parks, local authorities and a water company. Work on construction and management has involved companies ranging from Sir Robert McAlpine (PhD on project management of the London Olympic stadium) to Willmott Dixon (work on Building Information Modelling).

The list below details collaborations and contributions to the discipline for each member of staff submitted to the REF:

- **Reed**: ESRC Michael Young Prize 2008; lead author on Working Group making recommendations to the 10th Conference of the Parties to the UN Convention to Combat Desertification; led the Sustainable Uplands project, which was awarded RELU's "best example of impact" in 2011; member of the Programme Advisory Group for NERC BESS; on Roster of Experts for DEFRA's Ecosystem Markets Taskforce; developed Knowledge Exchange Guidelines for RCUK's Living with Environmental Change partnership.
- **Scott**: keynote speaker at LWEC Decision making in the Twilight of Uncertainty November 2013; member of RTPI Policy, Practice and Research Committee; 2012 RTPI Planning Leaders Award (West Midlands Region); 2012-2014 Member of UK Expert Panel NEAFO project; 2012-present Communication Adviser for NERC Biodiversity and Ecosystem Service Sustainability (BESS) programme; 2012-2013 OECD Consultant adviser on rural development.
- **Larkham**: Associate Editor of *Urban Morphology;* former Associate Editor and current Editorial Board member, *Journal of Urban Design and Planning Perspectives;* Editorial Adviser, *Revista da Morfologia Urbana*; Editor for Taylor & Francis book series on planning and environment (to 2010); Elected Council member of International Seminar on Urban Form, and International Planning History Society; reviewer for AHRC, ESRC, EPSRC, and Dutch Research Council.

Carter: Associate Editor for *Environmental Values* since 2011 (Thomson-Reuters impact factor (2011) of 1.372); played a key role in writing the proposal and leading key elements of Work Packages 9 & 10 in the NEAFO; co-developed RUFopoly (see impact case study for details of its international impact); contributing author to landmark report *Combating Climate Change - a role for UK forests* (the first national assessment of its kind in the world).