

Institution: University of Sheffield
Unit of Assessment: 16 - Architecture, Built Environment and Planning
<p>a. Context</p> <p>The Unit's departments of Architecture (ARC), Landscape (LSC) and Town & Regional Planning (TRP) have a long and successful tradition of undertaking excellent research that has high levels of impact. Our users operate in the fields of architecture, building science and design (ARC); landscape ecology, design and management (LSC); and planning and housing systems, policy and governance (TRP) at local, regional, national and international levels. They include government and governmental bodies; professional bodies and technical advisory agencies; private businesses and commercial consultancies; NGOs and third/voluntary sector groups; and communities and the public (see section b for examples).</p> <p>Our research has improved the technical specification, design and development processes of buildings and building products and of urban and rural landscapes; it has enhanced policy, practice and community participation in the planning, procurement, production and management of these environments; and it has enriched public knowledge, perceptions and uses of them.</p>
<p>b. Approach to impact</p> <p>The reach and significance of our research impact is underpinned by our intellectual focus on the interface between theory, policy and practice and our pursuit of research with a social purpose (see REF5). This produces a virtuous circle of research that informs and is informed by practice and provides academically novel results that are effective in practice.</p> <p>Our approach to impact demands substantive, wide-ranging, continual and evolving collaboration with users – including citizens – who are engaged in business, practice, policy and everyday action. Local level examples are <i>Parnell's</i> and <i>Thwaites'</i> work with schools and their users in South Yorkshire (since 2006) to improve school design and children's experience of school landscapes; and <i>Campbell's</i> review of cabinet scrutiny in Rotherham MBC (2010-11). National illustrations are <i>Chiles'</i> contribution to the Primary Schools Capital Programme (DfES) and government guidance on school design (2007-2010), <i>Dunnett's</i> Directorship of the National Green Roof Centre and <i>Connelly's</i> contribution to the Cabinet Office evaluation of the Local Integrated Services pilots. International examples are <i>Fotios'</i> work on lighting for technical committees of the Commission Internationale De L'Éclairage (since 2008); <i>Lange's</i> membership of the Scientific Committee of the European Environment Agency (EEA; since 2008) to provide advice on spatial planning and management of natural resources; and <i>Williams'</i> work with DFID and the governments of Bihar, West Bengal and Kerala (since 2001) on pro-poor governance.</p> <p>In relation to research projects, there are four main ways in which we manage the research-practice interface to maximise impact, each illustrated with examples.</p> <p>1. By developing the impact elements of basic academic research.</p> <p>We ensure that the intellectual findings of basic academic research are applied to practical effect by pursuing Knowledge Exchange activities. <i>Tait's</i> research on trust in the local development management process (British Academy, 2007-08) led to his invited contribution to the Killian Pretty Review (DCLG/BERR) and the resultant recommendation that elected politicians be trained to deal better with the pre-determination of decisions. <i>Clayden</i> drew on his research on natural burial (ESRC, 2007-10) to advise the Ministry of Justice, the Natural Death Centre and the Association of Natural Burial Grounds on new approaches to burial practices and philosophies. <i>Fotios</i> incorporated the results of his research on lamp spectrum and brightness (EPSRC, 2003-06; 2008-10) in two Institution of Lighting Professionals technical reports for end users (2008 and 2012) and in his advice to the BSI on the new British Standard for lighting, BS5489-1: 2013.</p> <p>2. By maximising the impact of contract research and consultancy.</p> <p>Enhanced impact is accomplished by establishing managed relations with funders that relate to connected (sets of) projects. This allows initial experience and findings to inform the design of subsequent projects, enhancing their effectiveness. <i>Ferrari's</i> six projects on Housing Market Renewal (DCLG and Regional Assemblies, 2003-10) have had a substantial impact on the strategic design of local HMR programmes and projects and on national HMR policy and grant distribution (citations in Audit Committee and NAO reports; Commons Briefing Note SN/SP/5953, 2012). <i>Woolley</i> has worked on a succession of Natural Play KTPs (2006-10) with a commercial</p>

company, a charity, a local authority and Groundwork UK to develop products and processes for playground design that provide richer experiences for children. *Wigglesworth*, following work on the DfE's 'Classrooms of the Future' initiative (2001-03), was commissioned by Wakefield District Council and the Department for Children Schools and Families (DCSF) to design Sandal Magna School, Wakefield (2009-10), one of five Exemplar Primary Schools for the 'Building Schools for the Future' programme. *Dunnnett* and *Hitchmough's* work with landscape architectural consultancies (eg. LDA Design, The Landscape Agency; 2008-2013) on major UK projects has evaluated and applied research on more practically effective and sustainable vegetation types (awarded the Dulux Colour Your World Prize, 2013).

3. By research partnering and collaboration with users.

Direct, active collaboration with users (not just consultation) combines aspects of the first two approaches. It improves the focus of academic research, increases access to industry and practice experience and resources, and provides a robust practical sounding board for researchers. Consequently, research findings have greater legitimacy and impact. *Dunnnett* has collaborated with ZinCo, the world's leading green roof company, through a Marie Curie Industry Academic Partnership (2009-12) to develop new types of green roof. *Samuel's* Home Improvements Knowledge Exchange project (AHRC, 2012-13) is bringing industry, architectural practice and academia together to improve the quality of volume house builders' developments. *Altan* is working with a range of contractors and industry consultants to improve the performance of green wall systems (EPSRC, 2012-13). A wide range of national government departments, local authorities and voluntary/community sector organisations is involved in *Flint's* research on the impacts, effectiveness and moral assessments of welfare reform in the UK (ESRC, 2012-2017) and on the development of strategies and support services to the most vulnerable families in Sheffield (ESRC, 2012-13).

4. Through action research with users and the co-production of new knowledge.

The sharing and co-production of research with users supports the development of new understandings of problems and of more effective responses to them. Fundamental user engagement lends research findings greater authority and increases their policy and practice impacts. In *Wagenaar's* action research (2007-13), policy makers, policy targets and local communities participated in the formulation of research questions and the analysis and interpretation of the empirical material. The research prompted an immediate change in The Hague's participation strategy and consultations with the Dutch Parliament (2013) about creating an effective and morally just prostitution policy. *Petrescu's* work on the collective reclamation of land and the co-design and management of community-run facilities in Paris has enhanced social capacity and community project management skills (and received three practice awards: European Public Space Prize, 2010; Curry Stone Design Prize, 2011; Zumtobel Prize for Sustainability and Humanity, 2012). *Thwaites*, through his experiential research methodology (Leverhulme, 2008-10), has enhanced understanding of how best to involve under-represented, hard-to-reach groups in the design of new landscapes.

It is also important to achieve change by **shaping general perceptions of research issues and problems**. This creates a more receptive environment for potential solutions. We pursue **direct public engagement** through varied means. For example, *Rae* uses his research blog to link with non-academic users. His national map of deprivation for England made an important national dataset publicly available in an accessible format for the first time, featured on The Guardian web pages and was used by DCLG for policy analysis (2012). *Dunnnett* has designed gardens at the Chelsea Flower Show (2008-13; Gold Medal, 2013) to translate his research on sustainable vegetation directly for the public, and founded a University Enterprise company to supply seed mixes to meet the demand that this created. *Cerulli* has helped the local community to imagine a sustainable future for Portland Works, a site for small-scale heritage industries (2010-13).

Mechanisms to support and facilitate impact

Our intellectual position treats impact as an inherent feature of the research process. We reformulate taken-for-granted conceptualisations of problems to open up possibilities for innovative, creative solutions. Over the REF period we have addressed impact more explicitly, distinctly and formally; and have exploited growing institutional and external financial support to

great effect. Our current support framework emphasises a proactive approach to impact - but also enhances our reactive capabilities - to ensure that opportunities are fully exploited (in terms of impact and the generation of new knowledge). The framework has three elements.

(i) **Individual guidance.** The embedding of a concern for impact in staff and departmental research practices by: explicitly addressing impact in workload planning, staff review and probation, recruitment, promotion and training processes; providing advice on impact from experienced colleagues at department, Faculty and University levels and - through their research user contacts and RESS's key partners (see (iii) below) - from external experts; reflecting upon the achievement of impact in our research seminars; and training PGRs in research impact.

(ii) **Organisation and leadership.** The identification and management of impact through: systematic review of research proposals and projects to identify impact potential; consulting users about the direction of research to be undertaken; identifying areas with potential impact and building capacity in those areas; the coordination of impact activities by our Directors of Impact (*Walker* [ARC], *Hitchmough* [LSC]; *Dabinett* [TRP] - also Director of RESS, see below); and impact planning and management by Research Committees.

(iii) **Provision of resources.** Financial, advisory and administrative support for achieving impact, including pump-priming and follow-on funding is provided at department, Faculty and University levels. This support is substantial. Our department-level impact support funds total £73k pa (2012-13) and we have obtained £440k through internally competitive bids to the Research Exchange for the Social Sciences (RESS, our Knowledge Exchange Gateway), since 2008. RESS captures Knowledge Exchange resources and links them to the delivery of the Faculty's Research and Innovation Strategy through, inter alia, the development of strategic partnerships with the private, public and third sectors, locally and nationally

c. Strategy and plans

We have established mechanisms to extend the reach and significance of our individual and collective impact (see above). Our **strategy** is to integrate and further develop our approach. To achieve this we will:

- i. Reinforce the beneficial research/impact circle by greater application of collaborative and action research approaches (see b 3 and 4 above) and by embedding continuous learning into the practices of individuals and committees. The latter will be supported by the introduction of formal *Impact Audit Trails* to track and analyse the impact process.
- ii. Engage more widely in direct public debate to facilitate acceptance of new perspectives and the take-up and application of research findings. This will be supported by an *Impact Media Initiative* involving staff media training, stronger links with the University's Public Engagement with Research Team and greater direct engagement with external media.
- iii. Further develop shared impact support structures across our three departments, providing more efficient and effective advice on partnering, finance and dissemination from our dedicated administrative staff, and maximising opportunities for intellectual stimulus and synergy through the establishment of an overarching *Impact Development Network*.

d. Relationship to case studies

Two case studies exemplify the way that the results of basic, academic research may be used to address user-relevant issues (section b, approach 1). To support the maximisation of impact, *Kang* was awarded two Knowledge Transfer grants via RESS (totalling £47k; b (iii) above) for aspects of **Designing better urban sound environments**; and *Dunnett* and *Hitchmough* received Departmental support (b (iii) above) for work on **Designed sustainable plant communities for use in urban greenspace**. The two other case studies of **Developing landscape character assessment** and of **Improving Policy on Planning Obligations and the Community Infrastructure Levy** exemplify the way that theoretically rigorous, high impact, practice-driven research may result from strong project/client relationships that allow the cross-fertilisation and development of ideas and experience (section b, approach 2). *Swanwick's* research on landscape character was funded by the Countryside Agency and Scottish National Heritage between 1998 and 2002. *Watkins et al's* studies of planning obligations were funded by DCLG (and its predecessors), the Housing Corporation, the Welsh Assembly Government, the NHF, the Joseph Rowntree Foundation, the RTPI and the RICS between 1996 and 2011.