

Institution: University of Central Lancashire

Unit of Assessment: C16 Architecture, Built Environment and Planning

a. Context

Reflecting the environment described in the accompanying REF5 section, research within this UoA (centred on the **Grenfell-Baines School of Architecture, Construction and Environment**) is enabled through three primary subject strands: 1) Architectural Planning and Design ; 2) Construction Management and Economics; and 3) Environmental Management, Performance and Politics. These strands facilitate the UoA's central 'sustainability' tenet, to support cogent groups that both shape and inform the unit's precise impact strategies and accompanying delivery mechanisms. This doctrine is strategically enabled and managed through the School's Research Committee and is operationalised through the UoA's principal research centre: **The Centre for Sustainable Development (CSD)**. CSD's overarching sustainability theme and *esprit de corps* ensures concertation of the three primary research strands, and enables purposive and strategic impact aspirations to be realised.

Operationally, the UoA employs specific impact indicators (elucidated below) through CSD, which have a dual function. First, these are used at the design stage to identify trajectories (reach) and beneficiaries (significance) of our research. Second, they serve as indicative 'metrics' by which the success of the impact strategy is monitored and managed. Some evidence of the UoA's impact outreach includes mutually beneficial research initiatives forged with: regional and national companies/third sector bodies (for instance, numerous small to medium enterprises, Lancashire Construction Best Practice Club, Construction Knowledge Exchange, The Elan Valley Estate and Visitor Centre, Balfour Beatty Utility Solutions Ltd., Morrison Utility Services Ltd., BAE systems); professional institutions and sector specific conduits (such as ARCOM, COBRA and CIB); internationally (for instance, with the Malaysian Institute of Transport Research, Gnanamani Engineering College India, the University of Hong Kong, Kwame Nkrumah University of Science and Technology Ghana, the International Water Management Institute Sri Lanka); and more widely through societal avenues (see for instance, the OPAL case study exemplar in REF 3b). Consequently, the products of this structured research approach benefits many beyond the 'walls of academia' *per se*, as described in the following narrative and two accompanying case studies (REF 3b).

b. Approach to impact

Structural redesign of the School took place post-RAE, in 2008 (*cf.* REF 5). This provided a unique opportunity for planning; and accordingly, newly coalesced research strengths were strategically aligned to both core and aspirational impact areas. RAE quality profiles, outputs and esteem indicators helped inform this critical juncture in the UoA's evolution – where 'targeted reach' and 'maximum significance' of our research, were adopted as parameters for future trajectories. Given this, 'impact indicators' were implemented to reflect core strengths of the UoA's research provision within the three primary strands. These indicators also synergise with current and 'blue-sky' thinking; market drivers; changes in stakeholders' emphases; and societal needs. The UoA's main impact indicators are:

- extent, type, level and scope of media coverage;
- effects on changes in legislation, policy and regulatory controls;
- expansion or shift in public awareness, perception and attitudes;
- engagement with advisory groups, boards, expert panels (and similar *foci*);
- 'problem-solving' involvement with industrial, commercial, and third sector partners;
- influence on professional and practitioner practice; and
- evidence from bibliometric and non-academic citations of our outputs.

This strategy encourages UoA research that positively influences these indicators; and thereby, benefits both targeted beneficiaries and society at large. It also positively reinforces our influential working relationships with said research partners, industry, commerce and associated outreach sectors. The UoA therefore, not only demonstrates impact *per se* through the identified indicators, but more importantly, maximises its relevance both contextually and practically.

Operational mechanisms for shaping and informing our impact strategy, include:

- tangible UoA support to participate in external networks that openly facilitate or transcend academic/ industrial/ societal interfaces. This directly aligns staff expertise (tacit knowledge) to real-world problems and potential research beneficiaries;
- visibility at high profile events (conferences, industry days, professional practice workshops and public engagement *fora*) to maximise exposure, accelerate impact propagation, and expose UoA research and expertise to niche end-users;
- continual-strengthening of industrial alliances through Knowledge Transfer Partnerships. These arrangements are particularly efficacious, as they directly align UoA research and expertise to industrial need (see REF5); and
- application of a purposive approach to mentoring and training for new and existing researchers, on all forms of impact conduits available throughout the research process. This helps share good practice and strengthen existing avenues of impact evidence.

Impact is also leveraged through CSD by:

- maintaining formal, professional channels for the diffusion of ideas, aspirations and research outputs. Reciprocally, these conduits also facilitate end-user influence – which positively steers research direction, encourages direct collaboration, develops more meaningful relationships, and fosters greater impact relevance;
- consistently developing (existing) and forging (new) research links with the (home and) international academic research movement, professional institutions and vested parties. The resulting ‘bringing together’ of specific expertise and potential end-users, feeds and furthers the UoA’s impact agenda; and
- maximising staff and postgraduate research outcomes through rich professional networks (see REF5). This embeds UoA research providence through tangible practice-based channels and serves to display evidence of our success to research beneficiaries.

c. Strategy and plans

Research products emanating from the UoA’s three sustainability research strands continue to make a real difference to society, especially in the following areas:

- economic, commercial and organisational;
- the public and private sectors; and
- practitioner and professional services.

This engagement facilitates increased exposure of research outcomes; helps nurture and nourish new ideas; and shape the products of our research to yield maximum end-user benefit.

1) Strategising impact through economic, commercial and organisational engagement

Organisational and commercial engagement plays a key role in shaping the unit’s strategy. This includes engagement with key partners, who include: Construction Knowledge Exchange, Urban Knowledge and Build Sefton/Step Clever, North West Construction Knowledge Hub, BAE Systems, Waste Education in the Food and Drink Industry, Lancashire Construction Best Practice Club, Waste and Resources Action Programme, Envirolink Northwest, and Samsung). (See also section (a) above).

2) Strategising impact through public and private sector engagement

Public debate and community engagement provide the UoA with unique opportunities and platforms to raise awareness of our research and related services. This is particularly important, for showcasing how the UoA’s knowledge generation resonates with divested discourse avenues, some examples of which are as follows:

- The OPAL project (**Toogood** - see REF 3b) and BioBlitz events (**Toogood**), have been

Impact template (REF3a)

hugely successful in courting public involvement with science - supporting the aspirations of DEFRA's Biodiversity 2020 Strategy¹.

- CSD's active involvement in championing the first international Climate Change Conference in 2010, with similar sessions reinforcing this work through the Climate Change Question Time² and, the Copenhagen Conference on Climate Change (COP15).
- The PPP Conference hosted at UCLan in 2013, which engaged practitioners from both the public and private sectors to explore emerging discourse; showcase influential research; and develop a roadmap for the future.

3) Strategising impact through practitioner and professional service engagement

The inclusion of practitioner and professional service (PPS) engagement within the UoA's strategy enables structured impact delivery to yield maximum stakeholder benefit. Formal engagement with PPS and its processes, allows our research to shape, inform and develop future practice. It also helps influence agendas at local, national and international levels. Formal PPS engagement mechanisms include:

- direct engagement with leading international conference series – including (but not limited to) the Construction, Building and Real Estate Research Conference, the Association of Researchers in Construction Management Conference, the PPP in Transport Symposium, the Conference on Dealing with PPPs for Transport in Times of Economic Uncertainty, and the PPP Body of Knowledge Conference; and
- championing international networks – including funding agencies, the former Department for Environment Transport and the Regions, its successor the Department for Environment, Food and Rural Affairs, professional bodies, research consortia, the Conseil International du Bâtiment (CIB), and the Centre for Construction Innovation North West Lancashire Best Practice Club.

¹DEFRA (2011) *DEFRA's Biodiversity 2020 Strategy*

<http://www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf>

²University of Manchester (2012) *Climate Change Question Time*

<http://events.manchester.ac.uk/event/event:p35-qwhorwrw-2jxs3v/>

d. Relationship to case studies

The two accompanying case studies (REF3b) demonstrate tangible outcomes of the UoA's impact strategy. They embrace our architectural, construction and environmental aspects respectively and clearly highlight the 'sustainability umbrella' – our governing principle. These case studies also illuminate how the approach to impact described above is evidenced in practice, and how our research outputs transcend: i) several core impact areas (as defined by HEFCE); and ii) numerous levels (i.e. organisations, industry, society, economy, policy, and public awareness).

- The first case study: "Sustainable Public Private Partnerships", displays benefits to the economy, society and public policy through collaboration with local, national and international academic/industrial partnerships. **Akintoye** and **Liyana** lead this focus through seminal key texts, outreach events and practitioner engagement at the highest levels. Our exemplar PPP research is underpinned by strong industrial and public sector research activities - evidenced through CSD, CIB TG72, and other established networks such as COST Action TU1001 (Public Private Partnerships in Transport: Trends and Theory).
- The second case study: "The Open-Air Laboratories Project (OPAL)" led by **Toogood** is particularly unique – it displays direct societal involvement and concomitant benefits; evidenced through behavioural change, improved public awareness and engagement at all levels of society. Accordingly, OPAL adds to the 'social economy' through enhanced education and improved environmental awareness, while additionally, impacting public policy by influencing Parliamentary debate. The research has positively influenced practitioners and professional services through established networks with Imperial College, and more broadly, through extensive local and national discourse.