

<p>Institution: University of Bolton</p>
<p>Unit of Assessment: 16 Architecture, Built Environment and Planning</p>
<p>a. Context</p> <p>Research under Inclusive and Sustainable Environments (IaSE) reaches out to the Built Environment communities and related user groups in relation to maintenance, management, materials, people, performance, processes, structures and sustainability. These are covered under the three IaSE sub-research groups of regeneration and facilities management, construction and health and safety management, and construction materials and structures. A previous area of research in transport planning has been discontinued due to staff turnover.</p> <p>Historically, the main focus of the university has been in serving the industrial community. This is reflected in the research focus on applied and action research, which although have primary impact on the beneficiary organisation, translates knowledge into the wider community through dissemination activities. The main beneficiaries of research impact have been employer organisations from both the public and private sectors and the communities they serve. These may local or business communities as demonstrated by the Community-based FM research project.</p> <p>Research undertaken in the Built Environment since 1988 has shifted focus mainly due to the small numbers of staff engaged in each area and staff turnover. Since 2008, the focus has been on three broad areas identified in the above-mentioned research sub-groups. The main beneficiaries of these projects have included Bolton at Home, Bolton Council, British Standards Institute (BSi), Greater Manchester Strategic Alliance (GMSA) and Laing O'Rourke. Recently completed research in cycling measurement will be of benefit to Sustrans and the Department for Transport. On-going research will benefit the Health and Safety Executive (HSE). The main types of impact that have been demonstrated by our research are mainly in strategy and policy development, performance and evaluation, and widening participation in education.</p> <p>Bolton at Home has had its strategy and policy development influenced and shaped by the community engagement and empowerment project. It has also contributed to the development of new participatory engagement models with the community. The evaluation PhD project fed into their review of regeneration evaluation, and contributed to the development of social indicators in a new social accountability approach to neighbourhood management (see http://data.axmag.com/data/201307/20130723/U52137_F230101/FLASH/index.html). This project also provided externally validated evidence base to the organisation with regards to their return on investment.</p> <p>Although still on-going, Bolton Council is already benefitting from the 'Stay at Home' project which has identified deficiencies in policy and strategy towards support for independent living for adults with learning disabilities. This parent-led project, working with the Council and stakeholders, is influencing policy, and developing a flexible model to procure independent living and support arrangements for adults with learning disabilities living in family owned homes, when their parents/carers become incapacitated or die. In the short term, it has improved relationships between the Council and parents of adults with learning disabilities; and engaged the Council with parents and partner organisations in developing innovative solutions for housing and care for adults with learning disabilities.</p> <p>The GMSA benefitted from the three projects addressing curriculum and content development for regeneration practitioners. This informed their widening participation and lifelong learning agenda and resulted in the validation of a flexible framework for credit accumulation. These projects were undertaken in collaboration with Bolton at Home and other stakeholders, and have resulted in benefits to local communities through continuing professional development (CPD) for neighbourhood staff and residents. 36% of students (2012 University of Bolton survey) who have benefited from these CPD products have gone on to undertake further studies or gain new jobs or promotion.</p>
<p>b. Approach to impact</p> <p>IaSE has worked closely with organisations through research projects, doctoral studies, and</p>

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postgraduate and undergraduate research projects. Relationships fall under a mix of long and short term collaborations. Short term relationships with organisations are primarily formed around student dissertation projects and doctoral theses. Some examples of these are with Bury Council, St Helens Council, Places for People, Leeds City College, Gleeds, Babbie, Wain Homes, Transco, Amec, Balfour Beatty, Hochtief, Bowmer, Kirkland, Bullock Construction, Rok, and Felton Construction. These projects led to joint academic publications, and application of research findings in the organisations, e.g. Leeds City College.

Long term relationships are developed through collaborative agreements, multiple projects, and development of multiple contacts within the organisation. Projects are either applied or action research with this group of key stakeholders, and sponsored and driven by their business requirements. The relationship with Bolton at Home for example, started in 2007 between Dr Nelson and the then manager of a community resource, Marie McNulty. This has developed over the years into a strategic relationship including several projects, an industrial doctoral project; and involved other units in the organisation and subject groups at the university. This led to the organisation of the jointly funded two-day Bolton regeneration conference in 2011 with over 120 attendees. Projects with Bolton at Home are undertaken with in-kind contribution from the University in terms of staff time and access to university resources for researchers. The organisation has also directly informed the aims and objectives of another doctoral research in evaluation of regeneration delivery, which in turn contributed to their work in social accounting. This PhD research is now completed.

A similar relationship is being developed with Bolton Council, supported by a strategic agreement with the university. This commitment to a long term relationship is aptly demonstrated through the Bolton One project, a jointly owned building serving the needs of the Bolton community. It has also led to a funded project including doctoral studies, Stay at Home.

The University has further supported the development of new areas of research. For example, Dr Nelson was awarded £98,500 through the Higher Education Investment Fund (HEIF) 4 to support the development of research in regeneration and sustainable communities. This has been followed on by the award of £72,000 from HEIF 5 funding to support the development of Facilities Management research. This funding has enabled continuity of research, and the emergence of a new field of research in Community-based Facilities Management, merging the two subject areas of Regeneration and Facilities Management.

Support is also provided by the University for dissemination of research. Staff and research students are sponsored to attend conferences to present their research. Several papers submitted as outputs for this research assessment exercise were presented at such conferences. Workload allocations also include research activities to support research active staff.

c. Strategy and plans

laSE plans to develop more of both short and long term research relationships. This will partly be achieved by increasing capacity through support for research active staff to undertake more commissioned research projects.

For short terms relationships, in addition to the Masters students dissertations, we are developing relationships with organisations to support the development of live projects for undergraduate dissertations. This is very important as it helps to develop a crop of new researchers for the industry. Undergraduate students are encouraged to write academic papers based on their dissertations and for the first time, in 2012, were encouraged to present at the University's Research and Innovation conference. laSE had one student, Rukaya Abowen Dake presenting her undergraduate research on Community-based Facilities Management supervised by Dr Nelson. This student is now currently a PhD via MPhil student at the university. The research has also resulted in a refereed conference paper submitted as part of this REF, which has been selected for publication in a research journal. This exemplifies the University's strategies of research informed teaching and researcher career development.

To further support this, we are currently developing collaborative arrangements with existing partner organisations, and organisations such as Asset Skills to reach out to employers to provide live research projects for undergraduate and postgraduate students. A number of our undergraduate and postgraduate students have applied for the Asset Skills Student Ambassador bursaries, and we are awaiting results of the award.

For long term relationships, we plan to continue with expansion of the numbers of staff engaged with industry collaborators, and increase the number of long term partnerships we have through memoranda of understanding.

Impact template (REF3a)**d. Relationship to case studies**

Both case studies encapsulate the research strategies of long and short term relationships adopted by laSE. The University's support for development of new areas of research has led to the developments in regeneration and facilities management – empowering communities through engagement described in case study 1. Funding from partner organisations were supplemented by funding from HEIF and university in-kind contribution. This has led to strategy and policy changes not only within the organisations (notably Bolton at Home and Bolton Council), but also impacted on the local Bolton community, related to the University's strategy of supporting the economic growth of Bolton. This also led to the development of the research sub-group in regeneration and facilities management, leading the way in the development of a new sub-discipline.

The second case study focuses on improvements to professional practice and standards. It exemplifies the university's approach to supporting professionals in practice and the wider notions of work-based learners and lifelong learning.

The two case studies create the models to be adopted in the development of the third sub-group in construction materials and structures.