

**Institution: Loughborough University**

**Unit of Assessment: D34 Art and Design: History, Practice and Theory**

**a. Context**

The unit currently encompasses a diverse range of art and design research across two Schools within the University: (i) Loughborough Design School and (ii) School of the Arts. The centres, groups and clusters within the Schools conduct research in: design practice, design education, design ergonomics, user-centred design, sustainable design, environmental ergonomics, human factors & complex systems, transport safety, politicized art practice, art history and theory, drawing & visualisation, textiles and animation. The main non-academic user groups, beneficiaries and stakeholders are: public and consumers, industry, government, public services, standards bodies, art and design educators/practitioners. The main types of impact are listed below

**Economic Prosperity** results from research in design practice (new design/production techniques), user-centred design and ergonomics (more marketable products). *For example:* research in the area of additive manufacture and design communication tools provide new ways for the design industry to boost innovation and reduce production costs; research in the area of human-centred design has contributed to more usable, safe and marketable consumer products, specialist clothing, vehicles, advanced visual systems and mobile interfaces.

**Policy Making** influences result from research in transport safety, sustainable design, environmental ergonomics and the arts. *For example:* vehicle safety research on accident causation, impacts of interventions and policy priorities have changed Thatcham test procedures for assisted braking and child car seat classification; safety and ergonomics research has been used to develop ISO standards and European regulations; research on home energy consumption has informed Department of Energy and Climate Change strategy; public art projects have contributed to policy debate concerning public art's function for social and economic regeneration.

**Education** impacts result from research in design education, sustainable design and design practice. *For example:* research in design education has influenced the teaching of education beyond the HEI across the 'lifelong learning' community in the UK and overseas including the transfer of the knowledge and techniques into schools in the developing world; sustainable design research has included projects to embed these considerations into the UK secondary curriculum.

**Civil Society** impacts result from research in public art. *For example:* the comprehensive public consultancy methods applied in the development of permanent public art by Atkin funded by UK Government's Sustainable Communities Plan in collaboration with Architects Whitelaw and Turkington and Kent County Council; the contribution, by young people, to the debate and challenges of regenerating the Black Country in the Futurology project (Jordan) funded by Creative Partnerships in partnership with the Black Country Consortium.

**Cultural Life** impacts result from research in British Animation. *For example:* in 2010 the School of the Arts Animation Academy, and partners - British Film Institute (BFI), the British Academy of Film and Television Arts (BAFTA), National Media Museum (NMM) - formed the Association of British Animation Collections (ABAC) which in turn created an infrastructure for research in British animation archive holdings; research in craft manufacture for textiles and fine art practice-based research contributes to continuing personal development by engaging the public in creative activities such as exhibition, performance and discussion.

**Public service** impacts result from ergonomics, user-centred design and vehicle safety research. *For example,* research on inclusive design has enabled improvements to public transport information by Transport for London and accessibility of taxis through work with DfT and Ricability; research in workplace and public health and safety (e.g. anthropometry used by the HSE for safety harnesses) has benefitted a range of sectors including construction, emergency services and road safety; research on reducing vehicle crash risks for specialist groups (e.g. small drivers, pregnant women) have been used by manufacturers, directly benefitting through safer products.

## Impact template (REF3a)

**b. Approach to impact**

Prior to 2011, the impact of the unit's research was driven by individual academics with the support of the University's Enterprise Office. Since 2011 each School within the Unit has had an Associate Dean (Enterprise) sitting alongside an Associate Dean (Research). These roles enable a strong link between the research and impact. At Loughborough University the terms Impact and enterprise are closely aligned. Although the term 'enterprise' is not necessarily synonymous with impact, "***academic engagement with business, public & voluntary organisations to create social, cultural & economic impact through knowledge exchange***". The Associate Dean (Enterprise) role is a focal point for the development of impact-related activities from research and for the influence and implementation of institutional strategy in this regard.

The recent working practices and support structures of the Schools within the unit have further encouraged the acceleration of impact by:

- Acknowledging impact-related activities within academic workload models.
- Stressing the importance of close and sustained partnerships with research users throughout the research process from initial problem framing through to implementation of outcomes.
- Developing awareness of potential impacts through workshops such as the 'Research in Context' session delivered by the National Coordinating Centre for Public Engagement.
- Providing strategic internal funds which can be allocated to stakeholder-engagement activities (publicity, travel, staff etc) and advising on bids for University and external funding.
- Peer-assessment of 'pathways to impact' plans at initial stages of research projects to ensure they are creative and achievable.
- Sharing best practice and communicating funding and publicity opportunities through the Associate Deans (Enterprise) and the Enterprise Committees/Hubs in each School.
- Engaging with institutional support for PR and marketing to celebrate and publicise outcomes.
- Access to excellent facilities for stakeholder events/visits in the new Design School building (opened 2011) which is shared with School of the Arts.

The unit has utilised the following institutional facilities, expertise and resources:

- Funding from the Institution's Higher Education Innovation Fund (HEIF), EPSRC Knowledge Transfer Account (KTA) and, more recently EPSRC Impact Acceleration Account (IAA). These can be competitively bid for through the Enterprise Projects Group (EPG).
- Enterprise Office expertise and support in the setting-up of Knowledge Transfer Partnerships (KTPs), co-funded by the Technology Strategy Board and research users. Recent partnerships have included Nissan and Lloyd Loom.
- Professional training and consultancy enabled by Loughborough University Enterprises Ltd (LUEL), which provides an agile response to research users as 'clients'.
- Enterprise Office contractual/legal experts and the Intellectual Property (IP) Commercialisation team which has specialist expertise in protection and exploitation of IP from research.
- Enterprise Office marketing team for dissemination of research outcomes. Such as a Westminster breakfast briefing with DECC on energy-saving retrofit project CALBRE (an academic collaboration with E.ON) to tie in with the launch of the government's Green Deal.
- Training from the Enterprise Office and external consultants, Staff Development and the Glendonbrook Centre for Enterprise Education (based in the School of Business & Economics).
- Specialist University facilities which attract external partners to collaborate with us, e.g. the thermal chambers and measurement mannequins, additive manufacture software/hardware.

Some evidence-based examples of unit/institutional support include:

- **Vehicle cabin design:** Research expertise in ergonomics led to consultancy projects for Nissan, supported by LUEL, and a follow on KTP (2009-11). This, in turn, led to two further Technology Strategy Board collaborative projects. In 2012 the academics were invited to join the Nissan / Renault Technical Advisory Board providing strategic advice on future ergonomics direction.
- **'Empathy' suits:** Research enabled the development of wearable 'empathy suits' that simulate the physical characteristics of ageing and health conditions. Through LUEL, users, have purchased copies of existing suits, commissioned bespoke versions and received specialist training in their usage. Feedback from organisations such as Stannah and NHS Trusts has

indicated that employees are more attuned to the needs of their customers after the training sessions. The EPG have funded a market analysis to identify new areas for development.

- **Public engagement with art:** RADAR Arts is funded by Loughborough University and the Arts Council of England and works with academics and artists enabling the production of new artworks. New commissions are developed in relation to Loughborough University based research and benefit both the artist and the academic who gains from the dissemination of their research to a wider audience. All artworks utilise participation methods and are presented to the public, in the form of an exhibition or symposium at the end of the project.
- **Supporting social and cultural impact:** Via the AHRC Cultural Engagement Fund the School of the Arts part-funded five early career researchers to undertake five short-term projects with the aim of supporting collaboration between academia, the public and third sector cultural organisations to enhance the wider impact of arts and humanities research.

**c. Strategy and plans**

The objectives of this UoA are:

- To maximise impact by developing strategic partnerships that are long-lasting and create a continuous cycle of research challenge > research outcome > impact.
- To enable academic staff at all career stages to engage in the impact agenda.
- To ensure impacts at all levels (local, regional, national and international) are equally valued and that the impacts are always significant, although reach may vary.

The key components of the strategy to achieve the above objectives are:

**1. Understanding context**

To ensure research outcomes have relevance to real world challenges an understanding of the external environment is key and dissemination must resonate with the ‘vocabulary’ of our research users. Specific activities include:

- A set of cross-cutting, externally relevant themes through which research from interdisciplinary approaches can be described (e.g. sustainability, health and well-being, culture and citizenship).
- Allocating resources for staff to attend events connected to identified themes e.g. specific industries (transport) or specific societal challenges (e.g. ageing population).
- Associate Deans (Research and Enterprise) synthesising and efficiently communicating changes in the external environment and the opportunities these offer for application of our research capabilities (through committees/hubs and staff media channels).
- Continuing to understand specific users, audiences and beneficiaries of art and design research

**2. Establishing relationships with research users**

The consideration and engagement of research users constitutes a fundamental aspect of art and design research. Specific activities include:

- A programme of secondments between LU staff and our research users funded by external sources (eg. Royal Academy of Engineering) and internal sources (HEIF, IAA)
- Arranging ‘showcase’ events around research themes, e.g. knowledge transfer conferences with a mixed academic and research user audience.
- To work with the University to embed Public Engagement in our activities, as committed to in the signing of the Concordat for Engaging the Public with Research in December 2012.

**3. Maintaining a culture of ‘research with impact’**

Loughborough University’s Enterprise strategy aims to build a symbiotic relationship between research and impact with a range of audiences. Specific activities include:

- Continuing to support the Pro-Vice Chancellor (Enterprise) in embedding impact-related activities in staff roles through changes to recruitment and selection criteria, conditions of service, performance and development reviews and personal research plans.
- Rewarding success through nominations to appropriate competitions, e.g. internal University Enterprise Awards and awards from professional societies.
- Maximising opportunities for publicising research outcomes; supported by the newly recruited Marketing Officer responsible for the unit (since July 2012).

## Impact template (REF3a)

**4. Facilitating impact-related activities**

Academics vary in their skills/abilities for knowledge transfer and impact. To maximise the potential for impact by all staff. Specific activities include:

- Staff coaching sessions to raise awareness of the types of activities that can lead to impact, with specific reference to case studies from within the unit to ensure audience relevance.
- Associate Deans (Research and Enterprise), will provide an 'inspiration' checklist of activities.
- Associate Deans (Enterprise) to advise staff on internal and external funding applications.
- Maintain impact-related activities (enterprise) as part of the workload model to ensure continual legitimacy of the activity.

**d. Relationship to case studies**

The following case studies exemplify/have informed the approach detailed in (b) as follows:

***Reducing NHS costs and Improving patient care using Ergonomics to redesign ambulance vehicles and equipment.*** This case study made use of support for KTPs, the IP team for protection of the CURE systems and PR/marketing for press releases and nomination in the Enterprise Awards 2013. It encouraged inclusion of impact-related activities in the academic workload model as part of the unit's approach.

***The development of a design tool to support collaboration and understanding during product development.*** This case study was joint-funded by the Design School and Industrial Designers Society of America (IDSA) for production of the "iD Cards" and liaison meetings in the USA. This prompted a Finalist Award in the International Design Excellence Awards. Follow-on funding from EPG enabled global dissemination and measurement of impact plus a smartphone application to enable wider reach. It indicated the importance of, and further encouraged, initial pump-priming through research group/School budgets as indicated in our approach.

***Improving the understanding of arts function for social benefit through the development and delivery of public art projects in the public domain.*** This case study made use of School of the Arts funding (and encouraged this 'pump-priming' aspect of our approach) to host a free public interdisciplinary seminar "*Intrigue, uncertainty and humour*" *Why work in an Integrated Design Team?* The event brought together design team members to disseminate the approaches and methods utilised in the project to a wider audience. PR/marketing for press releases and nomination in the Enterprise Awards 2013.

***The development of the European Road Safety Observatory and the impact on safety policy-making.*** This case study relied on resources planned into the research as 'pathways to impact' and the success of the approach taken, encouraged the unit to embed this in their strategy: it identified the importance of engaging with influential networks in order to maximise research impact. This led to a range of European road safety bodies (see case study) supporting the need for the data within the observatory.

***Improving sports clothing design and athletic performance through the provision of environmental ergonomics and physiology based design guidelines.*** This case study made use of LUEL support initially for smaller projects with Oxylane and the MoD which gave the impetus for larger collaborative projects and a new relationship with adidas, including co-funded PhDs. These close relationships enabled a direct path to impact for the research and indicated the importance of sustained partnerships with research users in ensuring impact. In addition the PR and Marketing team supported press releases and nomination in the Enterprise Awards 2013.

***Improving the conspicuity of high-risk vehicles through ergonomics and design.*** This case study made use of LUEL to enable contract research with DfT, Police Scientific Development Branch and Highways Agency. The PR and Marketing Teams supported press releases, nomination in the Enterprise Awards 2012 and entry into the Institute of Ergonomics and Human Factors 'Ergonomics Design Awards 2013' (the team were the first academics to win the award). The University provided financial support to review the global impact/implementation of the livery design. It exemplified the power of direct relationships with 'problem owners' to maximise impact.