

<b>Institution: Wales Institute for Research in Art and Design</b> (Cardiff Met, USW and UWTSD)
<b>Unit of Assessment: 34</b>
<b>a. Context</b>

WIRAD's case studies typify its approach to impact. All partner HEIs were set up to respond to their communities' needs and they all adopt a strategic 'applied research' approach that directly enables Impact activities. WIRAD reflects this with a mission that includes working for the greater benefit of society and it consequently welcomes the Impact agenda. The Impact Case studies in REF3b are representative of the four categories of Impact that WIRAD engages in: *Policy, Cultural, Wellbeing* and *Economic*. These categories align clearly with key WIRAD aims but are directly rooted in the interests of researchers and reflect the breadth of activity in WIRAD's research centres and groups. The ways in which they are delivered are described in section d.

Specific Impact beneficiaries include: **NHS patients** and the **UK taxpayer**: e.g. the work of the Medical Applications Group (REF 3b) or Dee's six medical gowns designed to protect patient dignity and reduce infection that, following a hospital trial of 10,000 gowns became available to the NHS in 2012. **Muslim women**: e.g. Ayisi's *Zanzibar Soccer Queens* (see REF3b). **UK and EU Governments**: The Design Policy group exemplifies this (see REF3b). **Consumers**: Examples include User-Centred Design's (UCD) development of design strategies for better computer-embedded products and Experiential Research Atelier (ERA)'s research on human vision. **Vulnerable people**: e.g. Gill & Loudon and Keay-Bright (see sections c. and b. respectively). **UK Industry**: Examples include the work of the Design Policy (see REF3b) and Eco-Design Groups.

<b>b. Approach to impact</b>
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All WIRAD's partner institutions have a supportive stance to engagement outside academia and this is reflected in long standing strategies supported operationally by funding schemes and enabling support structures available to staff. Engagement has taken the form of industry exchanges, consultancy, public exhibitions, public lectures, advocacy, workshops, symposia, Knowledge Transfer Partnerships, Knowledge Transfer Centres, joint PhD supervision, sponsored research and Continual Professional Development courses. WIRAD has numerous groups with Impact agendas. They develop relationships with key users by various means, e.g. discussions at conferences, trade shows, lobbying fora or workshops, film screenings, TV and press coverage, leveraging KTP funding and engaging with charities or archives on areas of common interest. The nature of a sample of those relationship types and how they resulted in Impacts are described below:

- The National Centre for Product Design & Development Research (PDR): PDR's status within WIRAD is equivalent to a Faculty and its focus is virtually exclusively on Impact through Knowledge Transfer, lobbying and consultancy. Turnover in the period was nearly **£10m**, including over **£3.2m** commissioned from industry.
- The *Creative Industries Research and Innovation Centre* (CIRIC, turnover **£1.6m** since 2008) supports creative industries with a particular focus on the digital economy. Projects include [Creativity and Innovation in Micro-Enterprises](#), which supports business through creative intervention and [Moving Image Wales](#) which supports IP development from media companies.
- The *European Centre for Photographic Research* (eCPR) uses artistic and curatorial practice to facilitate new understandings, e.g. Robert's curation of the *Mass Observation* archive explored the multiple roles of photography in shaping social evidence and historical consciousness.
- Other WIRAD research groups and centres have examples of both commercial and cultural-social Impact. For example, the *Centre for Applied Research in Inclusive Arts and Design* (CARIAD) is a multidisciplinary group working with stakeholders to address complex issues faced by vulnerable communities. CARIAD's outputs include *Reactickles*, a social learning game for autistic children that, based on global sales ([Sherston](#), [TAG](#) and [Spectronics](#)) is estimated to have reached approximately 10,000 beneficiaries, while the [Reactickles Magic](#) and [Somantics](#) apps have been downloaded more than 12,000 times since January 2012.

Due- to the nature of applied research, potential impacts are frequently identifiable at the outset. WIRAD supports this type of research through frameworks such as IP funds and by targeting funding sources aimed at Knowledge Transfer activity. Around **£3.3 million** has been won this way, including: **seven** Prince of Wales Innovation Scholarships (POWIS: **£595,000**), **eleven** Knowledge Economy Skills Scholarships (KESS: **£600K**); Academic Expertise for Business (A4B) funding of over **£1.4 million** for **three** Knowledge Transfer Centres and various smaller projects; **91** Strategic Insight Programmes (SIPs), with an approximate value of **£227K**, **six** KTPs and **six** Short KTP's worth around **£480K**. WIRAD staff have also delivered research knowledge to industry through Continual Professional Development (CPD) courses. E.g. Loudon and Gill translated their prototype-centred rapid ethnography research into CPD for Mothercare's design team and PDR delivered various Design Management CPD courses to Welsh companies.

### c. Strategy and plans

WIRAD's strategy has always included engagement beyond academia. Launched in 2007 at the Welsh Assembly *Senedd*, it reflects the policies of the Welsh and UK governments and of its constituent members. It has worked closely with non-HEIs with Art & Design research interests such as the *Centre for Alternative Technology (CAT)*, *National Libraries Wales (NLW)* and *National Museums Wales (NMW, full members)*. All partners actively engage in Welsh Government strategies and policies, especially 'Innovation Wales' and 'Science for Wales' – A strategic agenda for Welsh science and innovation. Staff are also encouraged to participate in Welsh cultural events such as the National *Eisteddfod* (which boasts a footfall of around **150,000** per annum).

WIRAD's targeting of funding aimed at promoting industry engagement is integral to a strategy that values an interdisciplinary knowledge base to maximise impact opportunities, as opposed to a narrow subject-specific approach. In addition to the wide range of disciplines engaged with (see REF5) WIRAD also worked with **837** unique businesses, **84** hospitals and hundreds of cultural organisations in the period. This approach will continue.

New strategies in the next period will include joint Emerging Researcher support that 'designs in' Impact at the start of a researcher's career. Seed funds at University, National and European level (see b.) will be fully exploited. WIRAD will also utilise other support programmes such as the AHRC and A4B/Welsh funded Creative Exchange Wales Network (CEWN), which supports the creative economy by linking academic researchers with Welsh businesses through grants available to the scheme's participants.

Plans are already in place to broaden the impact of research since 2008. E.g.: Gill and Loudon's collaboration with Prof. Hall, Head of *Cardiff University's Anaesthesiology Department* and *Mothers of Africa* charity which combines medical expertise and ethnographic prototype-based product development research to create medical products for Zambia. Products designed for local manufacture and deployment are close to completion. Following deployment the group will seek to exploit key innovations for better, more cost effective NHS products in the UK. A £250K A4B bid for the establishment of a new Knowledge Transfer Centre (KTC) is under review. The Centre will act as a test bed for research-rooted Intellectual Property (IP), conducting proof of concept design testing before a decision is made to seek investment for further development. A second example is *User Centred Design (UCD)*, a joint CSAD-PDR group focusing on the intersection between human computer interaction, interface design and product design. The group's drivers have always included a strong industry engagement element with previous research being adopted at a strategic level by *Sony-Ericsson*. The Group's recent foci include life-critical medical devices, and their techniques are being employed directly by PDR's designers in commissions from industry. Products benefitting from their research will therefore be in hospitals by the 2020 REF and WIRAD's strategy will continue support for this type of Impactful research activity.

The majority of WIRAD's research has impact but there is a dichotomy, and, generally it is (and may always be) difficult to *evidence* Impact in Art and Craft areas. This is addressed by three policies for established research: 1. the systematic gathering of impact evidence will be the future

## Impact template (REF3a)

norm. 2. Active nurturing of Art & Craft research that would be naturally strengthened by cross-disciplinary collaboration. 3. Exploiting clear opportunities to deliver Art & Craft impact when they arise. An example of the cross-disciplinary approach includes the *Experiential Research Atelier* (ERA) which uses Fine Art painting to develop new knowledge on monocular 3D and a range of other insights new to vision science. Working with cognitive scientists, vision scientists and psychologists, ERA received WIRAD, University and European Impact development funding to explore IP exploitations for their [Fovography](#) technique from apps to advertising and medical imaging. Engagement outside academia has included: meetings with industry managers, a [trade show stand](#), a public exhibition and a conference at the National Museum. Impact was integral to the approach, but in no way reduced the value of the practice. Indeed it is difficult to conceive of how the new knowledge developed could have been founded in another way. An example of how opportunities to deliver Impact might be exploited is demonstrated in the work of WIRAD Ceramics researchers: Wales Arts International and Cardiff Met co-funded members from the National Centre for Ceramics Research to exhibit “Beyond the Borders: Ceramics from Wales” at the ArtXchange Gallery, Seattle. Twenty-five years of ceramics research was publicly showcased at a major exhibition that coincided with the world’s largest international conference for ceramics education and practice.

While ERA and National Centre for Ceramics Research are examples of WIRAD’s approach to nurturing new impactful research, PDR’s expansion strategy is a clear example of the opportunities available for increasing both the scope and reach of mature impactful research practice. Negotiations with Saudi Arabian and Chinese universities and governmental departments are underway to explore how the PDR model might be expanded via franchise arrangements into these countries. Closer to home WIRAD is supporting a strategic collaboration with further external partners. Led by Roberts and with WIRAD funding already committed, a partnership between *Artes Mundi* and the *Haye Festival* will be developed during the forthcoming period that will give public outlets to the work of WIRAD researchers.

### d. Relationship to case studies

In Section a. we defined four categories of Impact: **Policy**, **Cultural**, **Wellbeing** and **Economic**. These are all reflected in our case studies.

The **Policy** aspect is described in the *Design Policy Group* case study. This group has had a research interest in the links between design practice and innovation since 1994. Together with *EcoDesign Wales*, they work to influence the development of design policies and their link to innovation policy. Their approaches have included industry exchanges through meetings, public lectures, symposia and exhibitions (e.g. Design Management Awards) and leveraging KTP funding. Much of their advocacy is through lobbying national and European government and the publication of documents for policy makers, e.g. *The Design for Innovation in Wales Manifesto*.

**Zanzibar Soccer Queens** covers WIRAD’s **Cultural** category of Impact. In Section b. we describe how cultural and social impacts are regarded as being of equal value to WIRAD, and this is exemplified here. Muslim women have experienced changes in their self-perception and in how their role in society is perceived by others. An estimated 10,000+ have seen *Zanzibar Soccer Queens* at screenings and exhibitions, with four countries also showing it on TV. The result has been better lives for the ‘Soccer Queens’ through a better understanding of them and reflected benefits for Muslim women in Zanzibar and beyond. The approach to impact has included public engagement through screenings followed by debates, TV and press coverage.

The **Wellbeing** and **Economic** aspects of WIRAD’s Impact categories are demonstrated in the ‘**Improving patient outcomes...**’ case study. Patient wellbeing is improved by better prosthetics delivered more than 8 times quicker than by conventional methods, reduced surgical intervention and improved clinical outcomes. Economic benefit is achieved through time savings, particularly surgical time. Approaches to impact have included the formation of a Knowledge Transfer Centre, KTP schemes, joint research with industry (e.g. [Blatchfords](#) and [Renishaw](#)) and the NHS, industry engagement at trade shows and clinician engagement through lectures and medical conferences.