

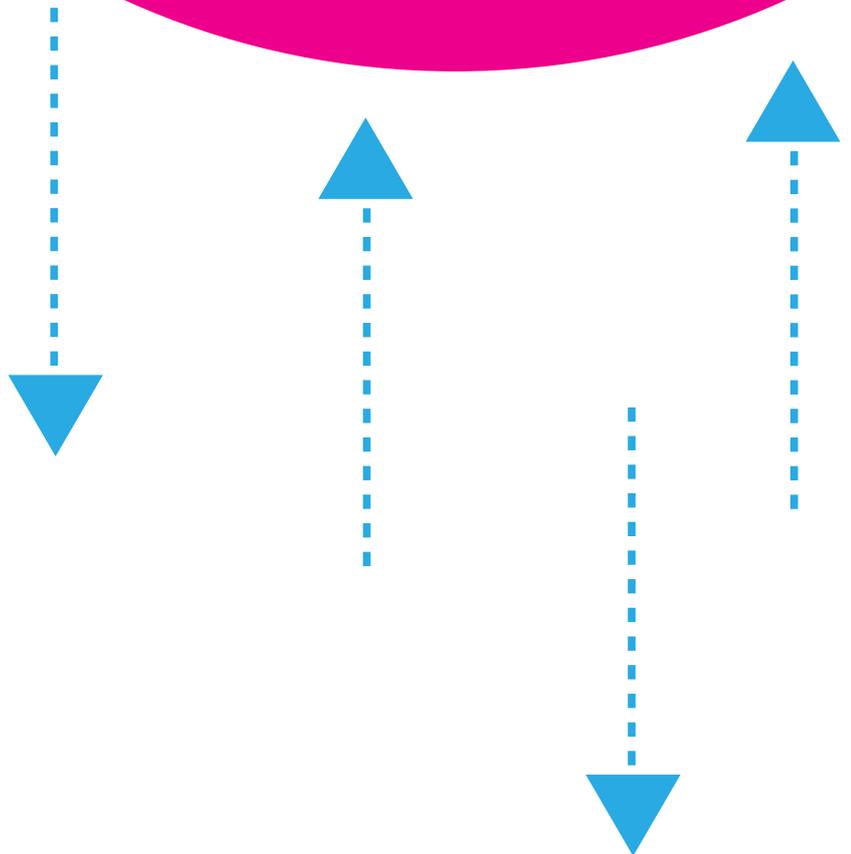
DESIGN AGAINST CRIME METHODOLOGY

University of the
Arts London * *
Central * *
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1. What is Design Against Crime?

Design Against Crime (DAC) as an approach to social innovation emerged at Central Saint Martins College of Art and Design at the University of the Arts London between 1999-2009+. DAC aims to:

- reduce the incidence and adverse consequences of crime through design of products, services, communications and environments that are 'fit for the purpose' and contextually appropriate in all other respects;
- equip design practitioners with the cognitive and practical tools and resources to design out crime; and
- prove and promote the social and commercial benefits of designing out crime to manufacturing and service industries, as well as to local and national government, and Society at large.
- to address "environmental complicity" with crime in the built environment and to reduce crime also to increase well being of individuals and communities, by applying "design questioning" and models of "design thinking" to social problems in order to deduce the most appropriate approach to their solution.

At the Design Against Crime Research Centre (DACRC) we adopt a multi disciplinary approach, when "problem" solving. We bring together designers, design catalysts and researchers as well as multi disciplinary research teams; criminologists and crime scientists, anthropologists, engineers, manufacturers, the police and other stakeholders to design out opportunities for crime, and to commercialize DAC ideas. Sometimes our approach is about design "questioning" more than "problem solving". It is often about using "design thinking" to look at the wider social context, or to enable stakeholders and partners, who we regularly involve in all our projects, to do that too and to help us innovate (see Oakley 2008). This approach is becoming more common to design, and has been described in many different ways. Hilary Cottam et al (2006), for example, calls this process "Transformation Design", and incorporates ideas about "co-design" and "participatory design" into this account. Transforming thinking and creating design exemplars with multiple stakeholders, to join up multi-agency agendas, is certainly part of what DACRC has delivered, alongside design exemplars, since it emerged in 1999.

At the Design Against Crime Research Centre (DACRC) we also understand that 'things' as well as people cause problems (Felson and Clarke 1998). When delivering DAC our team uses all the tools at its disposal to help the designer to "integrate" the latest research knowledge (including that from design and crime science) into the account of user and abuser centered design. Often we build on the theory of Situational Crime Prevention (SCP) which considers 'opportunities' (linked to objects/ environments/ services) to be the 'root cause' of crime, not just offenders. But we also realize that designing out crime needs to be approached holistically, and it is here where DAC has much in common with "social design"(see www.socialdesignsite.com/). Many designers are today creating projects and objects that aim to lead to social change i.e. to produce social as well as fiscal capital, to make social innovation a goal of the design process We call this process "Socially Responsive Design" (SRVD) that is 'Design which takes as its primary driver social issues, its main consideration social impact and its main objective social change' (Gamman and Thorpe, 2006). We believe the way we have delivered DAC, provides important case studies of how to deliver practice successfully. Some of this work has already

been audited by Price Waterhouse Cooper (PWC), working for the Arts Humanities Research Council (AHRC), whose independent report can be found at. <http://www.ahrc.ac.uk/About/Publications/Documents/DAC%20Brochure.pdf>.

Staff who work for DACRC often engage in design questioning, drawing on traditional design methodologies and design thinking, before we decide if the crime question can be solved by a design solution, rather than another type of response. When we understand design's role, our researchers and designers, often approach the problem by drawing upon multidisciplinary sources that include usual design discourses, SCP and crime science information and frameworks, but also focusing on "user-centered" methodologies and other holistic discourses.

DAC team is composed by a multidisciplinary team of professionals from the different design disciplines, artists, researchers and criminologists.



For products, systems and services to be successful we recognize that the user's needs should be designed in as much as the abuser's needs should be designed out. If this balance is not addressed correctly the end design may look simply "criminal" and contribute to "fortress aesthetics" or come to be seen as "security" design rather than "secure" design. DACRC uses information, linked to what has been called "open innovation" sources (Chesbrough 2006). Accessing the best information that can be located, is important to research and feeds into the design process. We argue our Model of the Design Process, written up by Gamman and Thorpe (2007) and called the "Twin Track Approach" (See also Section 3) is linked to "open innovation", and an emergent approach. This means the objects systems and services DAC realizes or produces are not always preplanned at the outset of a project or always delivered via a market led approach (although can be). These are also often linked to the creation of social capital, and social innovation, as much as making things to produce profit (fiscal capital). Before summarizing our specific DAC methodology and account of the design process, it makes sense first to look at the various models of user-centered design that are available to designers.

To read up about the many different approaches to user-centered design we would recommend that designers/readers consult papers written on user-centered design by individuals from IDEO: also papers listed under this heading on Wikipedia. Also Dan Turner's account of Apple; or books written by Donald Norman. Also new accounts about why a user-centered focus might revolutionise the design process, from those such as von Hippel (2005), Chesbrough (2006) and, in particular Leadbeater (2007). Charlie Leadbeater's account of the "we think" approach is a useful way of explaining how the different DACRC team members from diverse backgrounds (our projects are often delivered in partnership with colleagues from the Jill Dando Institute of Crime Science, and other stakeholders) manage to work in an interdisciplinary way. Our approach to DAC is linked to 'the team'. This team is usually led by designers (as project

managers), who synthesize multidisciplinary material and encourage the team to adopt a “we think” approach as a way of pooling resources, integrating crime and design thinking. We find this is the best way of delivering research, that can help generate design briefs that may help solve some of the crime problems of the 21st Century. What is unique about our approach is “how” we do this; the procedures and mechanisms we adopt to specifically risk manage the design process, which have emerged through working in the real world, with stakeholders, as we discuss further in Section 3 further on.

2. Why User-Centered Design?

User-centered design is also known as: contextual inquiry, customer-focused design, empathic design, participatory design, usability, usability engineering, usability testing, user experience design (UXD), user-focused design, user-friendly design, also co-design and participatory design, although each of these categories would offer a slightly different emphasis. **User-centered design is based on the understanding that it's good for designers to talk to the people who will regularly use the products they design**, and in the case of Design Against Crime, also to people who experience the effects of designed objects, systems and services, particularly linked to the abuse of such objects which often results in what Gamman & Thorpe (2008) describe as "premature obsolescence"

At the heart of user-centered design is the notion that the best design products, systems and services result from understanding the needs of people who use them, not just what they say they might need, but what they actually do with and to them. Designers who work on user-centered design get inspiration from such observation and analysis. They also think about what's at stake in the interaction, produced by the way people use things. e.g. in a restaurant, for example, encounters with objects, services, spaces / environments and people may be understood as 'dining out' but many separate interactions with designed objects – the menu, the chair, the cutlery, etc - frames this experience. There are many ways of measuring the user's experience. Some of the approaches, describe as user centered, are used by the DACRC, at different times, in different ways and on different types of project. They are also used by more enlightened designers working in the design industry to measure how the user might respond to an object, system or service.

The user-centered focus is particularly useful when trying to think about why designed objects are not successful, or when trying to think 'outside of the box'. For example, established codes and conventions, surrounding a product's usual design territory, or established practices and assumptions, might not always produce the best results. Designers can work with end users, or lead users, to look for inspiration outside usual channels to produce new innovation insights that will benefit those users in the long run. Unfortunately, it is usually only when a new product or service is to be introduced, or when a product or service is deemed to need revision, that manufacturers are willing to spend money on this sort of research, which is time consuming. This is probably why the open access approach, described by Chesbrough (2006) and Leadbeater (2007), has pioneered new procedures (inspiring companies like IBM to give away software rather than to simply sell it) to enable the inclusion of the experiences of "lead users" and "passionate amateurs" into the account of future product development. It is also why we have found it important to use "design thinking" and design visualization. This helps to inspire stakeholders to engage better with the process of problem definition and problem solving, when crime issues are raised in terms of the need for design improvement, or in terms of the need to redesign thinking about such issues.

As mentioned earlier the Design Against Crime Research Centre's thinking about DAC starts with the idea that anything design against crime produces needs to be 'user-friendly, abuser-unfriendly' (Ekblom 1997). The perspective of how to truly understand what is right for the end user,



Stakeholders meeting for project review

and how best to address complex issues such an approach demands, means we invite multiple stakeholders, to offer expert review on the stages of research, design briefs prototypes, and any other developments, we undertake. These experts include police, but also many other key stakeholders- policy makers, private businesses, government departments and agencies. The design process therefore enables us to facilitate multi-agency working i.e. to identify who are the crucial stakeholders in such design debates and before the design process begins, to allow these multiple stakeholders to participate and contribute their expertise on the problems being addressed - from problem definition, right through to solution development. The timing of such engagement is significant, and in order to avoid what is known as “implementation failure”, our design model has necessarily needed to evolve, to find clear ways to best integrate this feedback. Some of these approaches are generated by designers, linked to project management techniques; others may draw upon diverse sources, such as crime science mechanisms or risk management techniques.

With so many points-of-view brought into the DAC process, often the design team play the role of “facilitators” or “information moderators”, (Lester and Piore 2004 ch.3) and help public agencies think through whether or not the [crime] problem being addressed can actually be resolved in design terms (rather than through other means e.g. policy etc). Through varying methods of participation and co-creation, our researchers *lead*. They do this by creating hands-on, seminar, workshops and information sharing opportunities that help make the design process accessible to the non-designers, and also enable them as expert stakeholders, to introduce questions the design team may not have thought of or that may not yet have entered the “thinking,” “scoping” or “research process” stage, into the design focus. Some of those questions may relate to the fact that DAC needs to be sustainable in the long term, and so our design outputs need to be embodied with an address to economic, and ecological factors as well as social considerations. But it is how we synthesize these observations, and successfully put them into practice, that is unique about the way DAC has been delivered by our Centre based at Central Saint Martins College of Art and Design, in London. The model we have developed has been generated from practice (what we really did) rather than theory (what we might also think about).

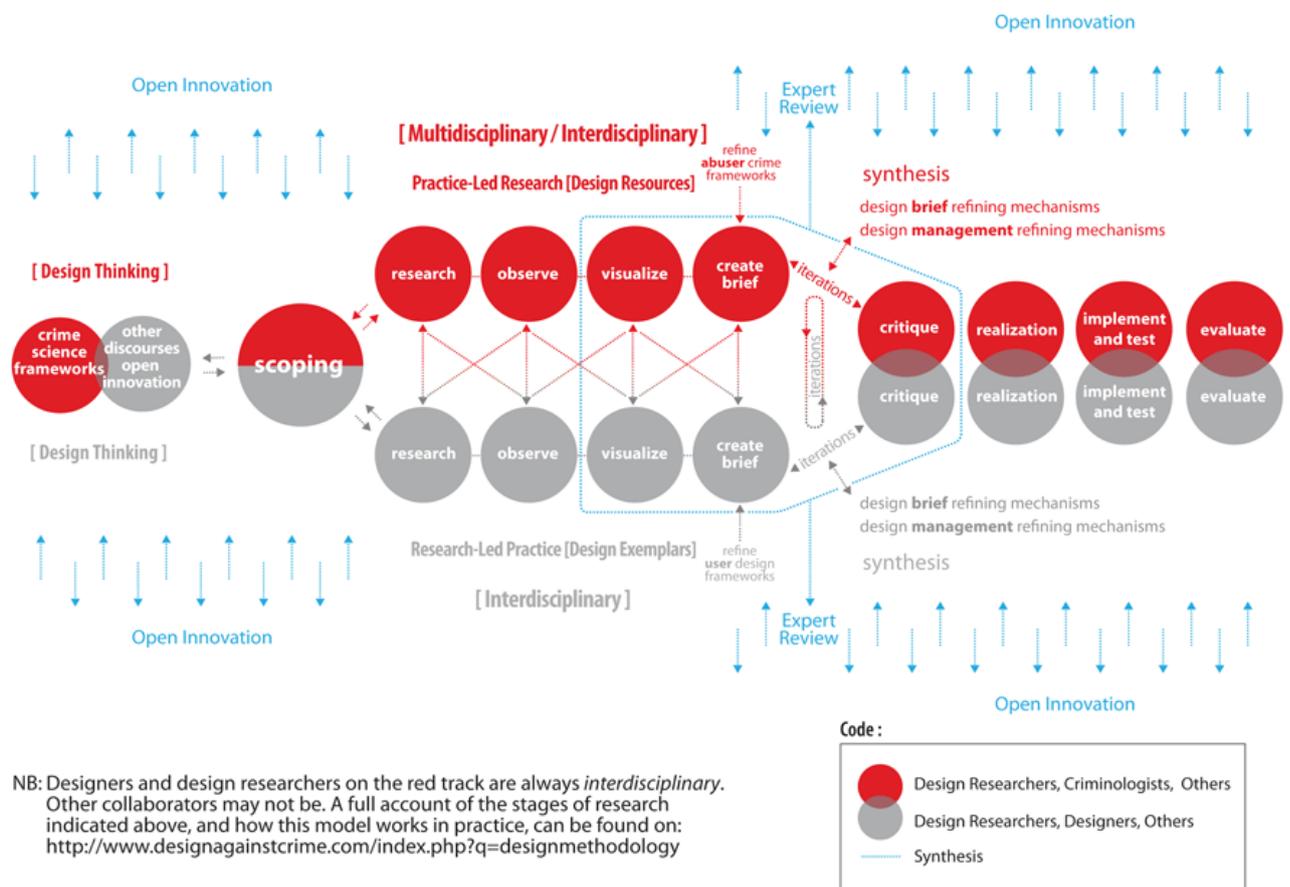
3. Mis-users and abusers too, what is unique about DAC's methodology?

DAC is unique because it extends the concept of 'user driven innovation' to that of 'user/mis-user and abuser driven innovation'. (the process of "thinking thief" Ekblom, P. 1997). This approach aims to ensure efficacy of solutions prior to advocacy and market introduction. In order to catalyze, and in some cases create products, environments and services that make life easier for individuals and communities and harder for thieves we review scenarios from many perspectives. We do a lot of research consultation, a lot of design visualization to make it easy for multi-agency stakeholders or users we consult to comment effectively; we believe it is these design visualization techniques that are the key to the success of our process. This has been summarized by Lorraine Gamman and Adam Thorpe in various downloadable papers linked to work with the DACRC. Suffice it say our approach is delivered using a series of:

- 'research and create'
- 'create and consult'
- 'create and test' iterations

Design Against Crime Evolved Twin Track Model of the Iterative Design Process

[Gamman & Thorpe 2007, revised 2009 for Bikeoff]



NB: Designers and design researchers on the red track are always *interdisciplinary*. Other collaborators may not be. A full account of the stages of research indicated above, and how this model works in practice, can be found on: <http://www.designagainstcrime.com/index.php?q=designmethodology>

Fig. 1

Our DACRC approach to research gathering and management is also interdisciplinary (and visual material enables us to synthesise the multi disciplinary input). It is also inclusive, and “emergent” in the way it addresses and includes:

- *Open sources of information as part of the multi disciplinary approach
- *Visualization of design issues and crime issues
- *Visualization of human and user-centered ideas and issues
- *Visualization of abuser unfriendly ideas and issues
- *A practice led approach to research investigation

Expert Review and multi agency working strategies linked to “participatory” or “co” design thinking is part of what we deliver. Here visualization techniques allow stakeholders to respond specifically and synthesis to occur effectively i.e. multidisciplinary sources are “integrated” via visual material that is constantly redefined aimed at achieving interdisciplinary synthesis. Ultimately all leading to design briefs that are “fit for purpose”.

How we achieve this is to engage with the following stages shown in the diagram (Fig 1) at the beginning of this section. In a nutshell the circles in the diagram show how research (red circles) and design (grey circles) follow a twin-track approach. The red circles show how the research phase is delivered, and the grey circles show how the process is repeated by individual designers in the creation of specific design realisations or exemplars for specific contexts. This process can be applied to the creation of the design of objects, or resources that teach others how to design out crime, as well as to the realization of many types of design briefs. Many stages of iteration and refining of the design brief occur, also many stages of prototyping occur, before we actually realize, or create a product, resource, system or designed service. The depth of our approach is perhaps more common to what is traditionally called ‘service design’ but involves crucial user and abuser focus and the following specific stages.

Stages of the “Design Against Crime Evolved” “Twin Track” Model of the Iterative Design Process”

Think (Design Thinking)

The team is always on the look out for crime problems that are relevant to address with a design responses. In talking to multiple stakeholders, even when we are not working directly on a project, we try to use methods linked to our “design thinking” to help focus our response and questions, and to identify areas we want to work on.

Scope

The way we scope a research question is often linked to our own passions and enthusiasms, and also to “open innovation” (Chesbrough, 2006) sources of information, as well as scholarship and crime science research. This is often the longest stage of the project and usually begins without any funding in place. It involves the team in developing ideas to apply for external funding to undertake the research projects we want to do, usually from independent external research funding councils. Often in order to survive this period, practice-led designers and researchers may



Fig. 2

take on consultancy jobs that are linked to some of the questions we want to explore, in order to broaden our knowledge and experience of the problem. Alternatively, we might run a short CSM student projects to achieve a creative ideas pool, the students figuring out how to approach the problems we set. This helps us refine our thinking, it creates useful educational experiences for the students – that we support with briefings, external speakers and other studio feedback, and enables us to get more focused about the emphasis we have taken to design the questions, problems and consider if it is appropriate. Perhaps the best way forward is through practice. This is because it becomes quickly evident if models like “crime triangle” (Fig. 2) are of use. If not there are other models and frameworks that could be used to address more complex crime issues. For example Professor Paul Ekblom’s frameworks located on <http://www.designagainstcrime.com/index.php?q=crimeframeworks>

Research

Formal research, maybe led by the scoping stage i.e knowledge about user and abuser issues and also generic crime science principles this generates, that are brought into the project from the beginning. Research usually only starts once the project is confirmed, and funding is in place. Design researchers and crime scientists and other researchers gather information from diverse sources. The designers are often interdisciplinary in approach although all researchers in the team might not be (rather are part of a multi-disciplinary team). We all undertake research and at staged meetings, set up before the project starts, the team “pool” information. This could be linked to problem specific content or could be much widely connected to generational (rather than analytical) creative / realizations techniques. The project managers are important here, and so is their design experience. They start to pare down the most relevant sources of information to be used or visualized, also to correlate facts and identify “gaps” in knowledge.

Observe

Ethnographic observations, “people watching”, user information informs the DAC process and is often undertaken by the whole research team linked to user and abuser issues, but also to the whole context of the criminal design problem. The designers also undertake their own additional observations. The project managers start to pare down the most relevant sources of information to be used (revisualised) again linked to staged meetings and discussions.

Visualize

We visualize our research to allow the mutlidisciplinary and interdisciplinary approaches to synthesize around clear themes we discuss at meetings. For example, we will visualize perpetrator techniques, our observations from “people watching”, visualize user and providers accounts; and other forms of information linked to crime mapping etc. It is also at this stage where we start to involve stakeholders and experts in the review of the design and crime issues and receive their feedback on our research. The individual designers too may also introduce new forms of visualization into the account. The project managers are responsible for paring down the most relevant sources of visual information to be considered and refined. The whole process is iterative. For example, even at the stage of visualization, we iterate many times to get images right, to

get thinking right in response to stakeholders input. This makes it possible for individual team members to input, and help us lead the “we think” approach.

Create Design Brief

The creation of a design brief follows a similar iterative process. The designers who engage with the brief may also help redefine the brief to their own remits. There are many iterations of the design brief by the whole research team, but it is the way the design project managers, predominantly linked to their design experience (what Malcolm Gladwell calls the invisible 10,000 repetitions that have occurred before the project starts that that may lead to success) who are ultimately responsible for the finalization of all the numerous iterations of the brief. This process should be understood as about more than “requirements capture” because, design thinking is included, and designed in to provoke flair and imagination from other designers who may respond to such briefs. In fact, we iterate what the brief should be, so many times, as project funding time lines and resources, allow us, so to do. The whole process is iterative.

Critique

We engage in formal critique stages with team members, multiple stakeholders and experts, in order to try and get the designs or resources, or other outputs, “fit for purpose”. All our thinking is linked to the entire design life cycle – cradle to cradle. Its here we start to make decisions about how best to realize the prototypes

Realize

We finalize decisions about how best to realize the prototypes. Open innovation sources, as well as traditional market led approaches, are some of the routes we may take.

Implement/test

We undertake small batch production of some objects/resources that are strategically implemented in order to allow us to test, and to strategically involve user feedback (and abuser feedback) into the finalization loop. Final implementation occurs once we are satisfied that address to user and abuser issues, has been achieved.

Evaluate

Many different methods of evaluation are available to quantify whether or not the design has worked. We engage with many different types of evaluation, including design evaluation, crime science evaluation, which may form the object of independent assessments and studies. The depth of our approach is perhaps more common to what is traditionally called ‘service design’ i.e. “the activity of planning and organizing people, infrastructure, communication and material components of a service in order to improve its quality, the interaction between [object or] service provider and customers and the customer’s experience” (<http://en.wikipedia.org/wiki/Service> 2008).

Is DAC Service Design?

The service element of design and DAC should not be confused with 'service industries'. DACRC takes a service approach because it understands that there are more stakeholders to be considered when reviewing the design process than just the person who primarily uses/consumes an object, system or environment. Also to be addressed are more than the manufacturers and designers who produce it, or the client that commissions it or the government who want to evaluate it, from their own political perspectives. So we try to remain independent (hence the emphasis on external funding from research councils). We may set up a study that does not account for all aspects of the design, so we do our best to focus on many of those people who experience and maintain the design in its entire lifecycle, and beyond, that we can, in order to understand its significance.

DACRC's understanding of service design therefore includes ideas about the whole life cycle of the implemented design (including an understanding of user/abuser requirements/desires) together with an account of community/public needs and sustainability and impact. Also, with an address to the idea, contained within our approach, that innovation in design is needed not just in terms of objects and spaces created, but also in terms of the social meaning and services (and social innovations) needed to maintain and make sense of them.

This design approach may seem complicated but it isn't really. It does, however, require more design forethought or what Thackara (2005) calls 'design mindfulness' linked to the holistic account of a product's lifecycle, than a market led approach. DAC, as it has been delivered by DACRC, offers a sustainable design model one that has much in common with holistic accounts of socially responsive and sustainable design, discussed by Gamman and Thorpe elsewhere (see, Less is More paper at http://www.designagainstcrime.com/files/Changing_the_Change_Less_is_More.doc).

4. Conclusion

A changing society means changing problems. Embracing multi-disciplinary design thinking, as well as 'situational crime prevention' and other crime science methodologies, has led DACRC to develop and apply a socially responsive (problem orientated) design approach to DAC via a developed user-centered method of the design process. But design is the discourse that leads this approach, and as explained earlier, our model is unique because it is able to synthesis knowledge from multidisciplinary teams to create synthesized interdisciplinary information, that helps generate design briefs that are "fit for purpose", linked to a "we think" approach. These briefs include address to mis-users, abusers as well users, which are at the heart of our human-centered approach. DACRC does its best to avoid an over-emphasis on novelty and utilizes a service design approach, one that recognises that effective innovation is also some times afforded not just by a new approach but also by re-contextualization of existing strategies, connected to user-centered thinking.

Ultimately the DACRC recognizes that the costs of crime are simply not sustainable and crime operates to compromise ideas about sustainable development. A widely accepted international definition of sustainable development is "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Sustainable Development Commission 2008). Crime clearly compromises the ability of present and future generations to meet their own needs. Designing against crime, therefore, can make a positive contribution to environmental issues, because to design against crime, can often help make the case for "longevity". Crime can be linked to "premature" obsolescence where the things that are stolen or vandalized need to be replaced more quickly than was anticipated, as well s linked to insurance upgrade. So in designing against such crime, DAC is informed by the idea that we need things to last, to be inclusive, to be designed to survive the pressures of 21st century living, and to be part of a sustainable management system, rather than being part of throwaway consumer culture. Benefits of adopting a sustainable user-centered practice led methodology, as the DACRC have concluded from our practice (rather than our theory), is that it helps designers:

- Innovate - by asking different questions - we can get different answers
- Make design socially responsive i.e. relevant to user and social needs and mindful of impact on environments
- Build on precedent product solutions by adding crime resistance - we see our design work as always 'evolving', to socially responsive needs
- Learn how to be market forming, rather than market-led. We develop new product briefs generated by user-centered research and observation that can define new demand and inform provision for new markets.
- Help create differentiation. In saturated markets, an anti abuser focus, if it is balanced right and does not overwhelm the needs of the user, helps differentiates products and maintain fitness for purpose from user perspective

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See also:

Jill Dando Institute of Crime Science at <http://www.jdi.ucl.ac.uk/csl/index.php>

The following websites might be of interest as well:

Webcredible : user-centred design at <http://www.webcredible.co.uk/user-friendly-resources/web-usability/user-centered-design.shtml>

Design Council: user-centred design at <http://www.designcouncil.org.uk/en/About-Design/Design-Techniques/User-centred-design/>

