

Design against crime:

defining new design knowledge requirements

Design Management Institute Conference

Frankfurt November 2000

Mike Press¹, Rosie Erol², Rachel Cooper³ and Mike Thomas⁴

Abstract

Crime and crime reduction currently receive little attention in design practice, management or education. However, informed design can be used effectively as a tool for reducing crime through designing in crime reduction measures during initial stages of the development process as described by Ekblom (1995, 1997, 1999a&b) and Ekblom and Tilley (1998). This paper focuses on the current extent of inclusion of crime reduction measures within design practice in the United Kingdom, and draws out implications for practitioners, managers and policy makers. While some examples of good practice have been identified, we argue that the knowledge system to pursue it further requires considerable definition. *Design against crime* bridges both commercial objectives and those of public policy. Drawing on research for a British Government inquiry, this paper identifies issues for consideration by relevant stakeholders.

¹ Professor of Design Research, Sheffield Hallam University, United Kingdom

² Research Fellow, Sheffield Hallam University, United Kingdom

³ Professor of Design Management, University of Salford, United Kingdom

⁴ Research Assistant, University of Salford, United Kingdom

Introduction

Design can be used as a tool to aid crime prevention by incorporating features into potential targets that make criminal activity less appealing to the criminal. This can be done through introducing mechanisms of deterrence into a design (preventing crime through influencing the offenders perceived risk of negative outcomes), such as reducing the potential reward from the crime or increasing the risk of detection. Alternatively, crimes can be discouraged through increasing objective difficulty of criminal activity (physically blocking the offence), for example the use of physical barriers such as locks, thus requiring more skill or equipment on the part of the offender.

Existing work addressing the application of design against crime has concentrated on environmental design (Clarke and Mayhew, 1980, Clarke, 1997 and Newman, 1972) and some areas of product design. Urban design can reduce the perceived risk and actual incidence of crime through improved lighting systems, building design and security. Travel and public transport is another area that has received considerable attention into improving crime reduction through design (Atkins 1989). The automotive industry has had to address the problem of high incidence of car crime (Webb and Laycock, 1992), and has adopted crime reduction features into car design as standard which are now used as a selling point for vehicles. Further reduction in retail crime, domestic burglary and IT related crime could be achieved with greater consideration to these issues with the design process.

Crime prevention features are often considered to be a retrospective add-on extra, and generally implemented once a crime has been committed rather than as an initial consideration in most product development. Taking account of crime resistant features in design requires extending the designers' thinking from normal product use to product misappropriation, mistreatment and misuse. Considering how a product, system or service could be misused in the hands of a criminal, and what aspects of design should be addressed to reduce the possibility criminal misuse should be an integral part of the design process. Neglecting to do this results in the failure of designers to anticipate the vulnerability of their product to crime.

Reports produced by the British Home Office examining various aspects of crime reduction have suggested the significant impact of design in reducing crime. For example, badly designed features of the built environment were seen to contribute to causes of vandalism (Baker and Bridgeman, 1994). The suggestion was made that manufacturers should receive feedback on the effectiveness of current designs to be able to meet the required specifications for future alternative designs. Manufacturers appear to be reluctant to incorporate crime reduction features into their products if they perceive it to have no direct benefit for themselves (Kock *et al*, 1996), so a possible compromise could be for manufacturers to design in the capacity for security upgrades by the consumer (Clarke, 1999). Whichever direction

is taken, the resulting action, whether or not it is driven by designers, needs the co-operation of all the stakeholders in the design process. Collaboration and shared knowledge needs to occur with the client, customer, manufacturer and crime prevention experts – all contributing to the design process.

Design Against Crime Programme

This paper arises from research undertaken for the Design Against Crime programme, initiated by the Home Office and Department of Trade and Industry through the Design Council, as part of the British Government's Crime Reduction Programme. The aim of Design Against Crime is to influence those involved in the development of new products to design in crime resistant features before products are launched on the market. The objectives of the research are twofold:

1. to increase the crime resistant aspects of products through raising awareness and practical knowledge amongst designers;
2. to contribute to effective incentives of all those involved in product development to take crime reduction into account.

This research should be viewed in the context of the British Labour Government's commitment to modernise the economy, institutions and image of the United Kingdom driven by a vision of a creative, knowledge-based economy. Design policy, co-ordinated through the Design Council, plays a critical role in this. According to the Design Council's Chief Executive, "Design has, it appears, been suffused as far as the very top of the new government" (Summers, 2000, p.20). Recent initiatives have included developing and implementing design management policies for key government departments. Design Against Crime represents a significant step, in that it shifts design policy from its former emphasis on issues of industrial competitiveness to a critical area of social policy.

Research by Ekblom, based at the Home Office, provides a foundation for the Design Against Crime research. The first phase of this research has involved two research teams, one based at the Judge Management Institute of the University of Cambridge, and a second combining design research teams at the Universities of Salford and Sheffield Hallam. Whilst this paper makes some reference to the work of the Cambridge team, it draws mainly upon the Salford/Sheffield project, the focus of which was principally that of practitioners and educators.

Initial work concentrated on determining the current levels of awareness of the role of design in reducing crime amongst all those involved in the design process. The specific 'goal' for designers is to incorporate good quality design against crime, in ways which makes it likely that the

products will be appropriately produced, widely purchased and effectively used, by anticipating, or taking account of prior experience of the susceptibility of the product as a target of crime or a tool for the commission of crime. Part of the research programme involved identifying design disciplines where crime reduction is already considered in design, and undertaking case study research to illustrate how the designer collaborates with others to design against crime.

Methodology

Semi structured qualitative interviews were conducted with forty three key stakeholders within design and related industries, to ascertain the current awareness of crime reduction amongst designers. Those interviewed included key figures in all the design industry bodies, designers from a wide range of design disciplines, design educators, including respondents to a postal survey of design course leaders, and manufacturers. Following analysis of the interviews, case study exemplars of current inclusion of design against crime were identified and relevant design issues highlighted.

Below we discuss the general issue of crime reduction awareness then consider two cases studies, from product design and interior design that highlight key opportunities and barriers in designing against crime. Finally, we draw out the critical issues raised by our research and its implications for the enhancement of design knowledge.

Crime Reduction Awareness

In general, people do not concern themselves with crime reduction until they have had personal experience of being the victim of crime. Crime itself provides a certain degree of fascination, and the media frequently cover programmes and articles on crime related subjects, although these tend to concentrate on the commission of crime rather than on crime reduction.

In the United Kingdom, the responsibility of improving crime prevention awareness amongst the general public in each police district rests with the Crime Prevention Officers (CPO). Their work is often targeted at specific groups such as small businesses, teenagers and the elderly (Crime Prevention College Digest 1998a&b) with schemes such as Neighbourhood Watch being effective in promoting crime prevention awareness amongst the general public.

The effect of design in reducing crime was clearly apparent to the CPOs interviewed given their experience in practical measures to reduce crime. Within pubs and clubs (bars and nightclubs), design changes have been implemented to prevent drug taking. These include installing towel holders and windowsills in toilets with rough or sloping surfaces to deter cocaine use, and using blue light bulbs in toilet cubicles which make it difficult to locate veins for drug injection. These design features were reactive to

problems identified in particular areas, with one CPO commenting that, 'no thought is given is given to crime reduction in any sort of design.'

Schemes have been established to increase awareness amongst specific groups of professionals. The Secured By Design initiative promotes design of the environment to reduce opportunities for crime affecting new and refurbished homes, commercial properties, and car parks. It also encourages manufacturers of security products to design to meet the minimum police recommended specifications.

Certain industry bodies provide information on crime specific to that industry. For example, the British Retail Consortium (BRC) produces a Retail Crime Survey annually, which reports on trends in retail crime and the associated costs generating numerous newspaper and trade press reports (Campbell, 1998). The BRC is proactive in promoting Retail Crime Partnerships across the country, which involves collaboration between local authorities, major retailers and the police in reducing crime in the city centre environment.

The majority of initiatives promote crime reduction awareness within businesses themselves, to reduce the possibility of becoming a target of crime. For manufacturers, little is done to promote the idea of designing crime reduction measures into their own products. The focus is on using security products rather than producing secure products.

Our research highlighted the considerable, specialist knowledge within the crime prevention profession, including the expertise of the British Crime Prevention College. Such knowledge has the potential to play a critical role in design processes. One objective of our interviews with design professionals in product, packaging, interior, automotive and new media design was to ascertain how much they, or their clients were informed by design against crime knowledge.

Product Design

Product design as a discipline encompasses a vast array of issues, for example: aesthetics, functionality, user needs, environmental issues, market requirements and possibilities, technical issues, ergonomic concerns, volume and cost of production, and production/ manufacturing capabilities. With all these issues to consider, crime issues are rarely at the forefront of the designer's mind during product development.

Often manufacturers do not address the issue of product security, as it does not directly affect them, as crime occurs further down the supply chain after they have sold their products. Clarke (1999) suggests that 'add on' products can be created to make original products more secure. The consumer is therefore involved in two stages, buying the original products and buying the additional product. Designing in security features in the

initial design removes the need for this, and is an issue which product designers need to be aware of, along with the possibility of products being misused for criminal activity.

Case Study 1: The Adshel I+

Adshel is a leading world brand in street furniture and operates over 3,000 street furniture agreements with municipalities in 20 countries. Having an awareness of the potential of both malicious and accidental damage occurring to their products, and having a good understanding of material and manufacturing technology available, the company can actively manufacture against crime. The Adshel I+ information terminal is an electronic service that provides free, up-to-date, interactive information on towns and cities, in a visual and attractive format, with touch screen technology and attractive graphics, combining editorial information with video, music, voice-over and maps. Whereas traditional Adshel products were prone to vandalism, the I+ would also be vulnerable to theft due to it housing a PC and other items of electronic equipment.

The design consultancy PSD Associates was appointed to design the I+ to ensure that it was suitable for external use, needing to be both weather and vandal resistant. The brief for Adshel I+ was written jointly by PSD and Adshel, the essence of which was to extend and market an existing network of information terminals that Adshel had already established in hotel foyers.

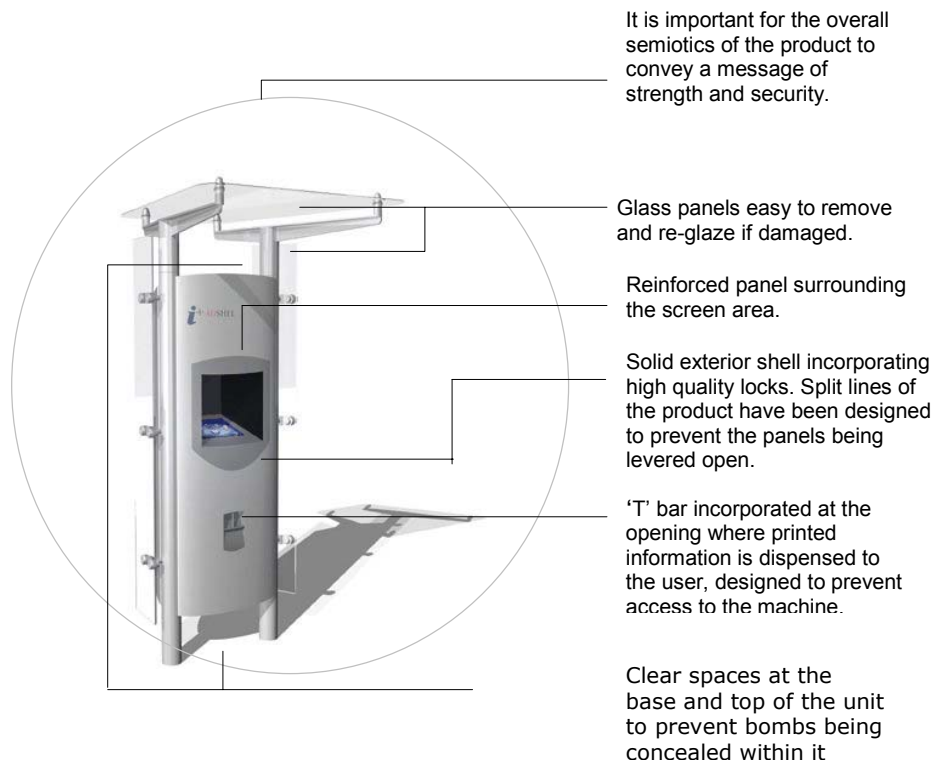


Figure 1 Focus on specific crime resistant aspects of the Adshel I+.

The designers worked to get the internal arrangement of all the equipment to deliver maximum efficiency, whilst minimising the potential of product misuse. In addition to this, different orientations of the body were considered in terms of it being obstructive on the pavement through being sited parallel or perpendicular to the curb; how it might be positioned in relation to a bus shelter; and the effect of possible queue formation if people wanted to browse the internet for long periods.

The decision was taken to develop the unit as a self-standing product rather than as an extension to bus shelters due to vandalism and product life cycle considerations. The design team focused on the individual areas of the product taking crime reduction into account in a number of areas. This included strengthening the area around the monitor, removing spaces which could be used to conceal bombs, or allow the build up of litter, and standing the unit on two legs, giving clear visibility around the product and allowing for difficult site conditions such as uneven ground. The door was positioned on the back, with the lock interface designed inside the shell to prevent it being prised open. The opening for dispensing the tickets, maps and receipts was designed to prevent it from becoming blocked and to discourage users trying to access the interior of the machine. Figure 1 details the crime resistant features which were considered during the development of the I+.

It was important for the product to convey a message of strength and security in reducing vandalism attempts. According to Barry Jenkins, Design Director at PSD, during a research interview, "Much of the psychology of strength is that it looks like it's strong ... normal people with a slight criminal tendency wouldn't want to try and vandalise it because it is too much hassle. So by not making this flimsy in its appearance or fine in its detailing it does look more resistant." Product location was also an issue in achieving maximum product use with minimum risk.

A prototype was built to test product use, suitability of materials and to monitor vandalism. It was found not to be subject to criminal damage. Following detailed design approval Adshel went into manufacturing. Adshel and their customers will continue to monitor crime resistance throughout the product life.

Interior Design

Crime reduction in environmental design is an area that has received considerable attention over the last 20 years. This covers urban design and city planning, or design of the 'built environment', building design and

architecture, and interior design. These all play a role in the idea of situational crime prevention (Clarke, 1997).

Interior design has received less attention than that of the wider built environment. The Portman Group report (1993), entitled *Keeping the Peace* suggests various design features which should be taken into account in the design of licensed premises. This includes factors such as lighting and colour, reducing opportunities for frustration, layout to minimise potential for jostling and allowing adequate monitoring and surveillance. The design of retail outlets is another related area that could offer improved crime reduction. Retail design is generally based on increasing the number of customers to a store, and increasing the volume of customer purchase, rather than concentrating on reducing shrinkage. There is a definite conflict between the open, attractiveness of retail environments and requirements of security. This point was made at the Retail Innovations Conference, reported in *Design Week* (1997) – “although designers take security into consideration, modern design and merchandising practice could hamper efforts to stop crime, as making products more accessible to shoppers generally increases sales.”

Retail design played a significant part in the work of the interior designers interviewed, with the retail industry as a whole attracting a large amount of interest from various sectors within the design industry. *Design Week* publishes an annual supplement about the retail industry detailing many diverse factors about retail design (Dowdy 1999). However crime reduction is never mentioned as a factor within this. The following case study illustrates how the interior designer as a member of a development team contributed to effective co-designing against crime.

Case Study 2: Blazer

The Bluewater shopping centre near Dartford, to the east of London, opened in March 1999. It is the largest retail and leisure complex in Europe housing over 320 shops and restaurants, based on an ‘integrated, innovative design policy’ (Cole, 1999). The Moss Bros. chain of menswear stores, opened three outlets within Bluewater, assigning the interior design for its Blazer store to the Tugman Partnership, a small multi-disciplinary architecture and design consultancy whose clients include the fashion retailers Kookai, Jigsaw and Cerruti.

The design brief for the new Blazer store was set by the Visual Display Department at Moss Bros, after discussion with the directors. This required the designers to create a design concept appropriate to the overall image of Blazer. The brief referred to security features such as CCTV and a tagging system which were to be installed.

The initial design concepts were presented to the client at an on-site meeting. It was at this stage that Moss Bros security department became involved. Paul Bentley, Head of Security at Moss Bros accepted that at the initial concept stage “the designers want something pretty, [and] the

security side is often not at the forefront of design.” The main concerns were about the CCTV system, the position of the monitors, and the tagging system to be used, resulting in “detailed discussions” between themselves and the designers.

Whilst a compromise was reached regarding the positioning of the monitors, the Security Department came to an agreement with the designers about the tagging system to be installed. All Moss Bros stores had previously adopted a tagging system that required the use of large pedestal detectors at the entrance to the store. As this was a narrow retail unit, it was important to the design to have as wide an entrance as possible, allowing uninhibited access to the store. The extra width meant there was a need for multiple detectors across the entrance. The designers argued that this was not appropriate in this case as the ‘repulsively ugly’ pedestals were not in keeping with the image of the store. They suggested an alternative system which could be incorporated easily into the aesthetic design. Whilst the designers and visual display department wanted to adopt a system which was as unobtrusive as possible, the security department were mindful of a visible deterrent, as an effective way of preventing shoplifters entering the store and thus avoiding the possibility of confrontation with staff. After investigating the system further, Moss Bros agreed, and installed the new system in all three outlets in Bluewater. Figure 2 shows the completed Blazer store design.



Figure 2 Blazer at Bluewater Shopping Centre

Since the completion of Blazer at Bluewater, Moss Bros has continued to work with the Tugman Partnership. Having found that “the designers were initially not conversant with the retail crime aspects,” they embarked on a ‘steep learning curve’ and have worked successfully together since then, with new projects including many security features which needed to be amended in the Bluewater project.

A broader picture

The two cases above demonstrate how *Design Against Crime* knowledge can inform and underpin the design process. However, in order to gain a broader picture of the extent to which crime reduction principles are employed in the development of new designs, a survey was conducted amongst the 100 largest design consultancies as ranked according to turnover. One hundred and eighteen companies were surveyed with a response rate of 31%.

In general the survey has highlighted that there is a little consideration of crime prevention within design consultancies in the U.K. Over 65% of respondents stated that their design discipline had never designed a product for the purpose of crime reduction, or with specific crime reduction features. A factor that might be related to this lack of consideration is that 87% of consultancies stated that consideration of crime prevention was never a specific client request.

Three quarters of respondents stated that design against crime had a little to no effect on their design process, and had no awareness of any publications raising the issue within the last twelve months.

Conclusions and key issues

Our research has highlighted some exemplary design projects in which design teams have addressed crime prevention issues in their work and indeed have provided a lead for their clients to follow. This demonstrates that designers can play a vital role in ensuring that crime is embedded explicitly in the design brief.

However, aside from these examples, the general picture that emerges from professional design practice is one of little understanding of the issues, a lack of specific knowledge that can be applied in design, an overall failure to design against crime, and few if any incentives to do otherwise. Designers generally appear unaware of technological developments that specifically help to counter crime. A further problem faced by those designers who do address issues of crime prevention is reconciling the often contradictory demands of visual design and security in terms of retail design. Such contradictions can also be found in product and packaging design. Furthermore, the complexity of design issues related to

crime requires access to research and data that is either unavailable or difficult to obtain.

From our research it appears that designers learn about crime issues on an ad hoc project by project basis, given the lack of any formal training in crime related issues. This lack of training, education or project exemplars provides designers with an image of design against crime that is largely negative, constraining and compromising, reinforced greatly by an general ignorance of the information, data and methods that would enable them to apply it to their practice.

However, design has the potential to draw on the significant knowledge that exists on crime prevention, and embed it more explicitly in the cultures and activities of corporations and other design clients.

We believe that *Design Against Crime* offers a number of distinct benefits. First, it provides Britain's £12 billion design consultancy industry with a critical competitive edge in a vigorously fought international market. Developing a specialist expertise in this field would strengthen Britain's prospects as a design consultancy exporter, which already accrues annual export earnings worth over £350 million. Second, this expertise can benefit Britain's manufacturing and service industries, again by providing a competitive value added advantage.

The embedding of crime into design learning, at both degree and school levels could provide a powerful tool for raising crime awareness generally, and ensuring that designing against crime becomes part of everyday life. This is linked to a further benefit in that design - in its role as an approach to creative problem solving, as opposed to its role as a consultancy industry - offers individuals and communities a cost-effective and inclusive way of tackling crime-related problems.

Design can provide vivid, visual visions of living that capture the imagination. As part of broader policy initiatives, *Design Against Crime* could challenge some of the negative attitudes and tolerance of minor crimes that our research has highlighted. Finally, and perhaps most significantly, we believe that ultimately it can improve the quality of life by reducing crime and the fear of crime.

Realising this potential requires new channels of information to be developed linking designers, design users and the crime prevention professions. Exemplar case studies need to be documented and disseminated, and appropriate initiatives in design education. The next phase of this research will include the development of a website (www.design-against-crime.com) to further the knowledge and principles of *Design Against Crime*.

Acknowledgements

This paper results from research conducted as part of a project for the Design Council, funded through the Government's Crime Reduction Programme on behalf of the Department of Trade and Industry and the Home Office. All opinions and ideas expressed in this paper are those of the authors, and should not be considered as policy positions by British Government Departments or the Design Council.

References

- Atkins ST (1989) Critical paths: Designing for secure travel. Design Council, Guildford
- Baker M, Bridgeman C (1994) Preventing vandalism: what works? (Crime Detection and Prevention Series Paper 56) Home Office Police Research Group, London
- Campbell D (1998) Retail staff suffer more violence but arrests fall. *The Guardian* 19 Feb 1998: 21
- Clarke R, Mayhew P (1980) Designing out crime. Home Office Research Unit Publications, Oxford
- Clarke RV (ed) (1997) Situational crime prevention - successful case studies. Harrow and Heston, Albany, NY
- Clarke RV (1999) Hot products: understanding, anticipating and reducing demand for stolen goods. (Police Research Series Paper 112) Home Office Policing and Reducing Crime Unit, London
- Cole C (1999) The Big Blue. *Design Week* 14: 22-23
- Crime Prevention College Digest (1998a) Business Crime CD ROM. Crime Prevention College Digest April 1998: 1
- Crime Prevention College Digest (1998b) Teenage personal safety. Crime Prevention College Digest. April 1998: 3
- Design Week (1997) Thieves say design helps them *Design Week* 18 Apr 1997: 4
- Dowdy C The Big Picture - Retail. *Design Week (Supplement)*, June 1999
- Eklblom P (1995) Less crime by design. *Annals, AAPSS* 539: 114-129
- Eklblom P (1997) Gearing up against crime: a dynamic framework to help designers keep up with the adaptive criminal in a changing world. *International Journal of Risk, Security and Crime Prevention* 2(4): 249-265
- Eklblom P (1999a) Can we make crime prevention adaptive by learning from other evolutionary struggles? *Studies on Crime and Crime Prevention* 8(1): 27-51

Eklblom P (1999b) The conjunction of criminal opportunity - a tool for clear, joined up thinking about community safety and crime reduction. Home Office Research, Development and Statistics Directorate, London

Eklblom P, Tilley N (1998) What works database for community safety/crime reduction practitioners - towards a specification for an ideal template. Policing and Reducing Crime Unit, Home Office RDS & Nottingham Trent University.

Kock E, Kemp T, Rix B (1996) Disrupting the distribution of stolen electrical goods. (Crime Detection and Prevention Series Paper 69) Home Office Police Research Group, London

Newman O (1973) Defensible Space: people and design in the violent city. Architectural Press, Guildford

Summers, A (2000) Redesigning the UK, Design Management Journal, 11(1): 18-21

The Portman Group (1993) Keeping the peace: a guide to the prevention of alcohol related disorder The Portman Group

Webb B, Laycock G (1992) Tackling car crime: the nature and extent of the problem. (Crime Prevention Unit Paper 32) Home Office, London