

Design Against | Crime

April 2000



**A Report to the Design Council, The Home Office
and the Department of Trade and Industry**

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Research teams

This report combines two separate, yet related studies undertaken from August 1999 to April 2000. Membership of the two research teams is shown below.

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Executive Summary

This report describes research carried out to explore the use of design best practice to reduce crime, in response to a brief set by the Design Council and the Home Office. Several Home Office reports have identified design as a factor which can influence crime levels, but it is a factor which is rarely considered from the outset of the design process. This research forms part of the Design Against Crime initiative within the Crime Reduction Programme, and sets out to assess the current awareness of crime reduction within industry, and amongst designers and design decision makers in the new product development process. Factors which constrain and facilitate design against crime are identified, leading to recommendations to increase the contribution of design to crime reduction.

There have been two main areas of activity within the research project. The first of these is addressing design in the broadest sense, looking at the new product development process across a range of industries. The second strand of the research concentrated on the design industry itself, looking at the influence of the professional and student designer.

Cambridge Bit

Teaching Design Against Crime

Focusing on organisations and individual key players within the design industry revealed that current awareness of the impact that design can have on criminal activity and opportunity was very limited. Case study exemplars of designing in crime resistance do exist in both education and practice, covering many design disciplines. They provide a basis around which to build further knowledge of the subject, and highlight areas which hinder the widespread adoption of design against crime in practice.

Knowledge and Incentives

Design is a rapidly changing discipline, evolving to meet the changing needs of users and embrace developing technologies. Whilst the necessary knowledge base for design against crime has yet to be established, indications are that if approached in the right manner with the necessary incentives, designers will engage with design against crime. Networks between key stakeholders are required to allow effective flow of knowledge and information, for design against crime to be effectively incorporated into everyday design thinking.

- **Crime prevention experts:** A broad knowledge on crime and crime reduction, which is relevant to design, exists within the Home Office, police force, and the security industry, but there is little direct contact with the design industry, and therefore limited opportunity for information exchange and knowledge sharing.
- **Design organisations:** The industry bodies offer access to the majority of people working in the design industry, and as such provide a channel for disseminating information and generating interest. All the organisations approached were supportive of this initiative, despite the issue never having been addressed in the past.
- **Design practitioners:** Crime reduction is not an area which designers address, unless specifically referred to by the client within the design brief. It is not seen as a design problem. Where crime reduction is considered, it often conflicts with other design interests, and is viewed negatively, due to lack of knowledge and training about dealing with this issue.
- **Design education:** Crime reduction does not present an appealing image to design students, and a lack of readily available relevant material for both students and tutors hinders its introduction into the design curriculum. The few exceptions to this rule demonstrate how design against crime can successfully be integrated into design teaching.

Recommendations

To promote the acceptance and use of design against crime within the design industry, it is necessary to assemble, advance and champion design against crime knowledge. To further this work, three inter-linked policy initiatives are proposed, each focused on specific objectives and constituencies. These are summarised as follows:

Strategic design against crime initiative

The aim is to foster collaboration between the key stakeholders, to develop appropriate information flows and a rigorous knowledge base to ensure widespread adoption of design against crime. Specific actions include:

- Identifying knowledge needs of all stakeholders and implementing appropriate information structures.
- Awareness raising programme targeted at industry and the design professions.
- Encouraging the adoption of design against crime within Government design management policies.
- Research into costs and benefits of investment in design against crime.

Urban design against crime initiative

An initiative to address issues of social exclusion and the urban environment. Specific actions include:

- Establishing pilot projects between design colleges and community organisations
- Establishing partnerships linking educators, community leaders and crime prevention experts and also involving professional designers actively in such projects.
- Showcase exemplar projects disseminated through exhibitions and the internet.

Educational design against crime initiative

This aims to embed design against crime within design education from school level through to professional development. Specific measures include:

- Developing a distance learning package for design professionals.
- Working with design organisations on specific activities, such as awards and events, to promote design against crime.
- Developing a modular learning package combining distance learning, formal teaching and project methods for degree level design education.
- Establishing an interactive internet learning resource for students.

Introduction

1 Background

This report explores ways of using design best practice to reduce crime. The research was commissioned by the Design Council, the Home Office and the Department of Trade and Industry as part of the Government's Crime Reduction Programme. The aim of the Crime Reduction Programme is to achieve cost-effective and sustainable reduction of crime.

The impact that effective design can have in reducing crime is now increasingly recognised. In the car industry for example, an increased emphasis on security as part of the overall design process has led to a reduction in car theft. However there is evidence to suggest that crime considerations are ignored in most industries, with products and services continuously developed with little regard to their potential effect on criminal opportunities and activity.

2 Principal Aims and Objectives

The overall aim of the Design against Crime initiative is to ascertain factors which limit the use of design in counteracting crime, and to develop new ways of overcoming them. Specific objectives of this report are to analyse the current situation and make recommendations which will ultimately serve to:

- increase significantly the extent to which new environments, products and services, systems and procedures are designed to be crime resistant by improving awareness and practical knowledge amongst designers
- contribute to the development of effective incentives from the outset of the design process through to final production to motivate designers, marketers and product and system manufacturers to take crime reduction into account

The research has investigated the various factors which constrain or facilitate 'Design Against Crime', both within business and amongst designers. These include factors which directly or indirectly influence both the *motivation* (for example incentives, self interest, legislation, social conscience) and *capacity* (for example competence, resources, awareness, training and education) of designers and businesses to incorporate crime resistant features into the design of products and services.

3 Organisation of the research

In order to cover the wide ranging scope of study within very limited time constraints, the research was tackled by two research teams working in parallel. At the macro level, a study of design in the broadest context was undertaken by a team from the Judge Institute of Management Studies, University of Cambridge, which investigated the new product development process in a number of different companies across a range of different industries. This research focused on business and organisational issues as they impinge on companies' capacity and motivation to build crime resistance into their products and services. The study undertaken by the Cambridge team also explores lessons that might be learned from military designers, as they anticipate and plan for enemy countermoves, lessons from ecodesign that might be transferred to the area of crime resistant design, as well as the awareness and attitudes of consumers towards crime resistant design.

More detailed, micro-level research was undertaken by the team from the Design and Innovation Research Unit at Sheffield Hallam University, and the Design and Innovation Group at the University of Salford. This part of the research looked at design as a discrete area of activity involving the work of the designers themselves, in particular examining the education of designers. Work by this team has examined the discrete activity of designing, concentrating on the work of professional and student designers and identifying exemplars of design against crime in practice. Initiatives to identify the most appropriate methods of introducing design against crime into design curricula and professional development have been the main focus of the research.

4 Structure of the Report

The report begins with a brief review of the criminology literature, which serves to locate Situational Crime Prevention (of which crime resistant design is an integral part) within the broader picture of crime prevention. Part One of the report then details the findings from the Cambridge research team. The main findings emerge from research carried out within six industry sectors, which aimed primarily to identify who the key design decision makers were, what factors specifically enabled or constrained 'Design Against Crime', and what crime prevention tools and techniques were typically used. The section concludes with a series of recommendations as to how crime resistant design might be facilitated in industry generally.

Part Two of the report details work by the Sheffield/Salford team, which has concentrated on the specific role of designers, design educators and their awareness of crime reduction issues. This section focuses on the work and attitudes of designers in the key disciplinary groupings, the perspectives of the profession's main representative bodies, and the current level of activity and prospects for further development in design education. Various case studies are presented, documenting some exemplars of design against crime. This section concludes with a series of recommendations detailing how design against crime can be embedded within the education and practice of design professionals.

1 Design Against Crime in Context

Recorded crime rose by an average of 1.7% per year between 1987 and 1997, or 18% in total (see Table 1). Not only has the volume of crime increased, but ‘new’ kinds of criminal activity are constantly emerging.¹ Not surprisingly, more than half of the population in England & Wales considers crime as the number one problem facing the country (ICPC 1997). The dilemma facing the government, however, is that the main tools currently used to reduce crime - enactment of criminal laws and punishment of offenders - are increasingly understood to have only modest effects on the rates or patterns of crime. There are a number of reasons for this. First, there is a great deal of attrition in the system. It is difficult for crime to be dealt with effectively only by the police and the criminal justice system when only half of the offences are not reported to the police, and many of those which are reported are not cleared-up.² Second, the criminal justice system (CJS) has not been particularly successful in pointing to innovative or effective crime control strategies (Laycock and Tilley 1995).

There is, however, potential for pre-empting criminal behaviour by paying greater attention to prevention of criminal acts in the first place. Recently, there has been a broad shift of focus amongst criminologists, from interest in the *offender* to interest in the *circumstances of the offence*. Prevention can and does cover a vast array of activity, from environmental design and situationally altered measures through pre-school programmes, social control, and criminal justice system institutions.

This chapter provides the background to the ‘Design Against Crime’ research project by discussing Situational Crime Prevention (SCP), of which crime resistant design is an integral element, in the context of the various different approaches to crime prevention.

1.1 The Changing Picture of Crime

1.1.1 Prevalence, Types and Trends

The latest official figures published in *Criminal Statistics* - the primary ‘barometer of crime’ used by politicians and the media - indicate that the total number of ‘notifiable offences’ stood at 4.6 million (see Table 1).³ Although this was the fifth consecutive annual fall, the number of notifiable offences recorded by the police per 100,000 population continued to rise from 1,100 in 1950 to 8,600 in 1997 (Home Office 1998).

¹These include, among others, drug trafficking, domestic violence, child abuse, workplace theft and auto-crime.

²For every 100 offences committed, 49 are reported to the police, and 30 are recorded by them. Of this 30, seven are cleared up, three result in a caution or conviction, and two result in a conviction (Barclay 1993 quoted in Laycock and Tilley 1995).

³The compilation of data in the *Criminal Statistics* is derived from police and court records throughout England and Wales, which is collated and tabulated by the Home Office Research and Statistics Directorate.

Table 1: Notifiable Offences Recorded by Police, 1997

Offence Group		Number in '000 (1987)	Number in '000 (1997)	Av. Annual % Change (1987-97)
1.	Theft/handling stolen goods	2052.0	2,165.0	+ 0.5
2.	Burglary	900.1	1,015.1	+ 1.2
3.	Criminal Damage	589.0	877.0	+ 4.1
4.	Violence against person	141.0	250.8	+ 5.9
5.	Fraud and Forgery	133.0	134.4	+ 0.1
6.	Robbery	32.6	63.1	+ 6.8
7.	Other	19.3	59.8	+ 12.0
8.	Sexual Offences	25.2	33.2	+ 2.8
TOTAL		3,892.2	4,598.4 (100)	+ 1.7

Source: Adapted from Home Office 1998, *Criminal Statistics, England and Wales*, London: HMSO.

Criminal Statistics currently lists the notifiable crimes recorded by the police under a total of sixty-four categories, which are grouped under eight broad headings (see Table 2). Many of these groups contain a considerable variety of offences, in terms of both context and seriousness, but most are dominated numerically by just one or two. In other words, a relatively small number of categories play a major part in determining both the overall crime total and the size of each offence group in relation to the others. The overall picture of crime that emerges is dominated by property-related offences. In 1997, property crimes (including burglary, theft, criminal damage and fraud) accounted for 91% of the total offences recorded by the police, amounting to 4.2 million crimes (see Table 2).

The crime statistics recorded by the police provide only a partial picture of crime committed. Whereas earlier criminologists made only occasional, speculative reference to this unknown 'dark figure' of unrecorded crime, repeated investigation since 1982 by means of the *British Crime Survey* (BCS) has demonstrated that only a minority of incidents that are recognised as 'crimes' by their 'victims' end up in the official statistics.⁴ Figures from the BCS suggest that less than half of all offences are reported to the police and only a quarter are recorded.

⁴However, victims surveys - on which the BCS is based - are subject to sampling error, so that estimates of changes in the less common offences are imprecise.

Table 2: Notifiable Offences Recorded by Police, 1997

	Offence Group	Number (thousands)	Per cent
1.	Theft/handling stolen goods	2,165.0	47.1
	of which:		
	<i>Theft from vehicle</i>	710.3	
	<i>Theft or unauthorised taking of a motor vehicle</i>	407.2	
	<i>VEHICLE CRIME</i>	1,117.6	24.3
	<i>Other Theft</i>	542.9	11.8
	<i>Theft from shop</i>	274.0	6.0
	<i>Theft of pedal cycle</i>	139.1	3.0
	<i>Theft from person</i>	57.8	1.3
	<i>Handling Stolen Goods</i>	33.6	0.7
2.	Burglary	1,015.1	22.1
	of which		
	<i>Burglary in a dwelling</i>	519.3	11.3
	<i>Burglary in other building</i>	495.8	10.8
3.	Criminal Damage	877.0	19.1
	of which:		
	<i>Arson</i>	31.5	0.7
	<i>Other Criminal damage</i>	845.5	18.7
4.	Violence against person	250.8	5.4
	Of which:		
	<i>Less serious offences</i>	227.2	4.9
	<i>More serious offences</i>	23.6	0.5
5.	Fraud and Forgery	134.4	2.9
6.	Robbery	63.1	1.4
7.	Other Notifiable Offences	59.8	1.3
	of which:		
	<i>Trafficking in controlled drugs</i>	23.2	0.5
	<i>Going equipped for stealing</i>	6.1	0.1
	<i>Other Offences</i>	30.5	0.7
8.	Sexual Offences	33.2	0.7
	of which:		
	<i>Rape</i>	6.6	0.1
	<i>Indecent Assault on a female</i>	18.7	0.4
	<i>Other Sexual Offences</i>	7.9	0.2
	TOTAL	4,598.4	100

Source: Adapted from Home Office 1998, *Criminal Statistics, England and Wales*, London: HMSO.

The 1998 BCS provides estimates for offences committed in 1997 and shows that, for offences in categories which are directly comparable to those recorded by the police, the number of crimes *committed* is 4 times the number *recorded* by the police (Home Office 1998). Table 3 provides a comparison of the BCS estimates of crime committed with police recorded crimes; it reveals that for some crimes - for instance, robberies and vandalism - the difference is eight to nine times more.

Table 3: Comparison of the BCS Estimates of Crime Committed with Police Recorded Crimes

	Type of Crime	BCS Estimates of Crime Committed vs. Police Recorded Crime
1.	Robberies and thefts from the person	Eight times more
2.	Vandalism	Nearly seven times more
3.	Thefts from vehicles	Four times more
4.	Bicycle thefts	Nearly four times more
5.	Domestic burglaries	Over three times more
6.	Woundings	Over three times more

Source: Adapted from Home Office 1998, *Criminal Statistics, England and Wales*, London: HMSO.

Looking at the trend in the crime rate over the last ten years, the number of notifiable offences recorded increased by 18% from 3.9 million in 1987 to 4.6 million in 1997.⁵ This is an average increase of 1.7% each year. Of this total increase of 700,000 offences between 1987-97, around 500,000 were offences against property, although crimes of violence (i.e. violence against the person, sexual offences and robbery) have increased at a faster rate than property crimes.

1.1.2 Geographical Distribution

A detailed breakdown of the distribution of recorded crime across the country is not provided by *Criminal Statistics*, but basic figures are supplied for each of the forty-three police forces in England and Wales. Although not a satisfactory way of comparing differences, they do offer some fairly consistent patterns. Contrasting the 'top ten' and 'bottom ten' police forces in terms of recorded crime rates per 100,000 population, it is clear that most of those with the highest rates include major metropolitan and/or industrial areas within their boundaries, whilst those with the lowest rates are predominantly rural in character.⁶ The highest recorded crime rates in 1997 were mostly in the Metropolitan Police, City of London, West Midlands, Merseyside, Greater

⁵Crime as measured by the *British Crime Survey*, which included unrecorded crime, rose by 20% between 1987 to 1997.

⁶It is important to treat all police figures with caution, as variations in recording practices can have a great effect on the totals produced (Maguire 1997).

Manchester, West Yorkshire, South Yorkshire and Northumbria areas (Home Office 1998).

1.1.3 Impact of Crime

To understand the full impact of crime on society, one needs to move beyond the headline-grabbing statistics. Other criteria, for instance, the impact of violent offences upon *victims* must be acknowledged. Although relatively small in number, sexual assaults, robberies, and woundings have been found to have a much more profound emotional impact on victims than is the case with offences of theft. Moreover, violent crime affects the *society at large* by spreading a fear of violence. Trafficking in controlled drugs might involve only 23,000 people, but its effect is far more widespread, having a highly deleterious effect on families and society as a whole (see Table 2). If one measures the importance of property offences in terms of *value*, rather than the quantity of incidents, fraud is of far greater significance.⁷ Levi (1993) points out that the minimum criterion for fraud cases to be accepted for investigation by the Serious Fraud Office is £5 million, and that in April 1992, the Frauds Divisions of the Crown Prosecution Service were supervising cases involving nearly £4 billion. By contrast, the combined costs of the prolific offences of ‘autocrime’ and burglary for 1990 were estimated by the Association of British Insurers to be just under £1.3 billion (quoted in Maguire 1997).⁸

Distribution of risk is another important aspect of crime that needs to be addressed. Local crime surveys have examined and emphasised the extent to which victimisation is unequally distributed among the population.⁹ By focusing chiefly upon inner city districts, local crime surveys have brought out much more vividly than the BCS the extent to which crime is concentrated in some small areas - predominantly those blighted by poverty. Moreover, they underline how particular forms of crimes are suffered disproportionately by particular social groups within those areas. Crime events which are considered ‘objectively’ similar can have enormously different meanings and consequences for different people:

People differ greatly in their ability to withstand crime...The ‘same’ punch can mean totally different things in different circumstances...Violence, like all kinds of crime, is a social relationship. It is rarely random: it inevitably involves particular social meanings and occurs in particular power hierarchies of power. Its impact, likewise, is predicated on the relationship within which it occurs. (Young 1988, quoted in Maguire 1997:170)

⁷Moreover, where fraud is concerned, the frequency and seriousness of offences known to the authorities are undoubtedly greater than the published police figures. Many fraudulent tax or benefit offences are dealt with as administrative issues by the Inland Revenue, Customs and Excise or Department of Social Security rather than as ‘crimes’.

⁸Levi (1993) also points out that the alleged fraud in any one of the several major cases - Barlow Clowes, Guinness, Maxwell, BCCI, Polly Peck - *alone* exceeded the total amount stolen in thefts and burglaries recorded by the police (quoted in Maguire 1997).

⁹Local surveys are funded by local authorities, and have aimed to uncover areas of criminal behaviour not seriously touched by the BCS.

1.2 The Perception of Offenders

1.2.1 Dispositional vs. Situational Crime Explanations

In the early 1950s, 'criminality' was widely regarded as something akin to medical condition - caused by social or emotional deprivation or other faults in the offender's psyche, upbringing, or environment - which affected relatively small numbers of individuals and which required some form of 'treatment' to 'correct' it (Maguire 1997). This fixation on *dispositional* explanations of behaviour in terms of individuals' pathology or wickedness (the notion that offenders will always offend) was displaced by later work which showed that many offenders were not psychologically abnormal, and that criminal behaviour was not a monopoly of poor and deprived young males. For example, child sex abuse, domestic violence, football hooliganism, workplace theft and drug offences have been shown to be committed by wide ranges of age groups and social classes - though much less so by females than males. A series of major frauds, some with direct financial consequences of large numbers of ordinary people (BCCI, Maxwell, Barlow Clowes) have demonstrated also that 'criminals are to be found in *suites* as well as on the streets' (Maguire 1997). Within the field of academic criminology this has led to a broad shift of focus from the *dispositional* to *situational* explanations of crime. The idea behind the latter is that most people can offend, given the right circumstances, but, given other circumstances, even hardened offenders can be deterred. This shift has allowed people to contemplate altering situations conducive to crime, whether through better management or through better design.

1.2.2 Offenders' Profile

Despite the increasing diversity of crimes and criminals, identifiable groups and individuals exist who commit substantial numbers of 'conventional' property offences like burglary, shoplifting, and theft from vehicles which make up the bulk of recorded crime. Of the half million or so offenders convicted or cautioned for indictable offences in 1995, 82% were male, and 45% were under the age of 21. The 'peak age' of offending - that is, the age at which people had the highest risk of acquiring a conviction or caution - stood at 18 for males and 15 for females (Home Office 1996). It is also known from cohort studies using the Home Office Offenders Index that a high proportion of those convicted will have had a number of previous convictions: it has been calculated that 60% of all court appearances are accounted for by male offenders who have been convicted four or five times (Maguire 1997). The prison population has also been shown to be predominantly young: 62% of inmates are between 18 and 30 years old, although this age group makes up only 25% of the general population. Males are even more strikingly over-represented, making up 96% of all prisoners. A disproportionate number of prisoners are also found to come from ethnic minorities: 15% of male prisoners and as many as 23% of female prisoners described themselves as black or Asian.¹⁰ 41% of male prisoners have unskilled or partly skilled jobs, compared with 18% of the general population (Maguire 1997).

¹⁰See Maguire (1997) for a discussion of the disproportionate black-white ratios, and the probable extent of racial bias, at each stage of the criminal justice process.

Taken together, these data clearly illustrate that the social backgrounds of people who are arrested and processed by the criminal justice system - and particularly those offenders who are eventually sent to prison - tend to be very different from those found in the general population. There are more males, young people, black people, poor people, poorly educated people, and people with disturbed childhoods than one would find in a random sample.¹¹ Nevertheless, a recent survey concludes, ‘that there is no significant association between social class and admissions to offending as a whole, but a strong association, for both males and females, between social class and admissions of *more serious* offending’ (Graham and Bowling 1995: 33, quoted in Maguire 1997).

1.3 Contemporary Approaches to Crime Prevention

Crime Prevention can be defined as “anything that reduces delinquency, violence and insecurity by successfully tackling scientifically identified causal factors. It gives special attention to activities that are “problem solving partnerships”, that is, measures developed as a result of a careful effort to identify causal factors while mobilising the agencies able to influence those factors. (ICPC 1997). Approaches to crime prevention are typically divided into those which focus on victims, and those which focus on offenders. These can be summarised as follows:

- Opportunity reduction: making crime more difficult, more risky or less rewarding to potential offenders - often focusing on potential victims;
- Social development: reducing the social factors that predispose persons to become persistent offenders - often focusing on potential offenders.

The four main strategies to crime prevention are: law enforcement and criminal justice; community approaches; developmental approaches; and Situational Crime Prevention.¹²

1.3.1 Law Enforcement and the Criminal Justice System

Crime prevention is the primary justification for maintaining a system of criminal punishment, and criminal laws exist and are enacted in order that fewer proscribed behaviours take place. Law enforcement and the criminal justice system are conventionally seen as preventing crime through deterrence, incapacitation, and rehabilitation, and indirectly through effects on socialisation. Enactment and enforcement of criminal laws are seen to affect behaviour directly (through deterrent effects) and indirectly (for instance, through the “moral-educative” effects of punishment and socialisation). Potential offenders are thought to be deterred by fear of sanctions, and some crimes are believed to be prevented by confining habitual offenders or otherwise controlling their movements or activities. There is, nevertheless, an emerging consensus among researchers and public officials in many countries that law enforcement’s potential effects are limited and modest. In England, for example, the

¹¹It is important to recognise that only about 3% of known crimes end in a conviction or caution. Whether the other 97% are likely to have been committed by a similarly skewed section of the population needs to be investigated.

¹²Please note that these classifications are not mutually exclusive. For instance, in some cases, development and community strategies overlap. The same can be said about some community and situational strategies.

Home Office observes: 'Deterrence is a principle with much immediate appeal [...] But much crime is committed on impulse [...] and it is committed by offenders who live from moment to moment [...] It is unrealistic to construct sentencing arrangements on the assumption that most offenders will weigh up the possibilities in advance and base their conduct on rational calculation'.¹³ The diversity of crimes and criminals is one reason why law enforcement is a necessary, but by itself an insufficient strategy for crime prevention.

1.3.2 Community Crime Prevention

Whether individuals commit crimes often is probabilistically linked to where they live. This is the key insight on which community crime prevention is premised; changing the community may change the behaviour of the people who live there. The initial focus of this approach was on ecological and community explanations for crime, and an emphasis on community organisation as a preventive strategy was promoted.

Over the past thirty years, considerable energy and money has been expended on prevention efforts to alter the physical and social organisation of communities. Conventionally, community crime prevention has included efforts to control crime by altering building and neighbourhood design to increase natural surveillance and guardianship, by improving the physical appearance of areas by organising community residents to take preventive actions and to solicit additional political and material resources, and by organising members of communities to take preventive strategies such as recreational programmes for children (Tonry and Farrington 1997). At their most modest, such efforts include Neighbourhood Watch programmes. At their most strategically ambitious, they include the Home Office and Department of Environment's problem estate programmes and the Safer Cities initiative.¹⁴

1.3.3 Developmental Crime Prevention

Over the last decade, increasing attention has been given to approaches which attempt to address the development of crime. Developmentalists, typically researchers in psychology, education, psychiatry, and public health, have documented that risk factors that are predictive of delinquency and crime are also predictive of many other forms of antisocial behaviour. Consequently, reducing these risk factors or increasing protective factors could have wide-ranging and cost effective benefits.

Police officers, prosecutors, judges and correctional institutions are aware that there are some offenders that come back again and again, monopolising significant resources. In England and Wales, the Netherlands, and the USA, scientists have completed several longitudinal studies of children growing up,¹⁵ which confirm that there is a group of persistent offenders - fewer than 5% of males born in a particular year account for as many as 70% of offences. Offending behaviour peaks during adolescence, and diminishes significantly when the early twenties are reached. These studies show that

¹³Home Office (1990) quoted in Tonry and Farrington 1997.

¹⁴This first phase of this initiative began in 1988 and ended in 1995. Home Office funding was provided to 20 high crime cities for the setting up and running of crime prevention schemes. For further details and evaluation, see Welsh and Farrington (1999).

¹⁵A typical study collected extensive data from birth to young adulthood on a sample of several hundred children born in a particular year. Researchers were then able to test whether there are particular early or late childhood experiences which are associated with youth getting involved in delinquency and violence.

persistent offenders tend to come from families who have experienced: (a) socio-economic deprivation, poor housing, disorganised inner-city communities; and (b) inconsistent and uncaring child-rearing techniques and parental conflict (ICPC 1997).

Interventions that improve parenting skills, children's physical and mental health, children's school performance and reduce risks of child abuse are argued to reduce later offending. However the benefits of developmental crime prevention manifest themselves in the long-term, and is therefore not seen as a technique which can have an immediately significant effect.

1.3.4 Situational Crime Prevention

Since the late 1970s, situational crime prevention (SCP) has grown rapidly as a viable strategy for reducing the occurrence of crimes. Based on the premise that much crime is contextual and opportunistic, situational initiatives typically alter the context to diminish opportunities for crime. Conceptually SCP is not new. People generally respond to perceived risks by altering their behaviour to reduce the risks. Doors get locked, windows shuttered, dogs purchased, and alarm systems installed in order to make an intending offender's work more difficult. What is different about situational crime is that it involves a systematic, strategic effort to develop, test and implement situational techniques. Lately there has been an increasingly widespread recognition that SCP approaches can complement law enforcement approaches.

SCP, if successful, typically has immediate benefits. It does not aim to affect offenders' propensities or motives. It takes these as given, and proceeding from an analysis of the circumstances giving rise to particular crimes, it introduces specific changes to influence the offenders' decision or ability to commit these crimes at particular places and times. Thus it seeks to make criminal actions less attractive to offenders rather relying on detection, sanctions or reducing criminality through, for example, improvements in society or its institutions. This approach can be applied to any environment, product or service which is a potential target for crime. The main approaches are listed in Table 4. Examples include target hardening, controlling access, target removal and reducing temptation.

Table 4: Main Approaches of Situational Crime Prevention

1.	Target hardening: for e.g.	9.	Target removal
*	Steering column locks on cars	*	Removal car radios
*	Anti-robbery screens in banks	*	Phone cards to eliminate cash in public pay phones
2.	Controlling access to crime targets	10.	Property identification
*	Fencing around flats to reduce vandalism	*	Property marking
*	Entry phones	*	Vehicle licensing
3.	Deflecting offenders from targets	11.	Reducing temptation
*	Segregating fans at football matches	*	Gender-neutral phone listing
*	Pub location	*	Rapid repair
4.	Controlling crime facilitators	12.	Taking away benefits
*	Photographs on credit cards	*	Ink merchandise tags
*	Passwords for mobile phones	*	Graffiti cleaning
5.	Screening entrances and exits	13.	Setting rules
*	Baggage screening at airports	*	Customs declaration
*	Merchandise tags in shops	*	Harassment codes
6.	Formal surveillance	14.	Alerting conscience
*	Burglar alarm		Roadside speedometers
*	City guards		'Shoplifting is stealing' signs
7.	Surveillance by employees	15.	Controlling factors that undermine constraint
*	Park attendants	*	Law controlling drinking age
*	CCTV systems	*	Controlling alcohol at public places
8.	Natural Surveillance	16.	Making compliance easier
*	'Defensible space' environment design	*	Easy library checkout to discourage book theft
*	Improved street lighting	*	Litter bins

Source: Adapted from Ekblom (1999) and Clarke (1997).

Changing the immediate crime situation in these different ways involves three fundamental approaches: *deterrence* (which makes crime more risky), *discouragement* (which makes it harder, or less rewarding) and *removing excuses* (which awakens conscience, as in the example of 'shoplifting is stealing'). These involve systematically changing a crime *target* that is vulnerable and attractive, *crime preventers* who are absent or incapable, and *crime promoters* who are negligent or deliberate or an unhelpful environment. SCP can apply to every kind of crime, not just to 'opportunistic' or acquisitive property offences: there are examples of successful applications to more calculated or deeply-motivated crimes, as well as ones committed by hardened offenders

(e.g. hijacking, homicide and sexual harassment) (Clarke, 1997 (quoted in Ekblom 1999)).

SCP methods can however grow obsolete, as in the longer term offenders develop countermeasures. Social and technological change brings new targets (laptop computers, mobile phones, tools (cordless drills) and ways of disseminating criminal techniques (Internet). SCP, however, can work both *reactively* to an emerging crime problem and in *anticipation*, through crime impact analyses on proposed new policies, practices and products, and through incorporating prevention within the design process (Ekblom 1997).

One of the most pervasive criticisms of SCP is that it tackles the symptoms of crime and not causes (Laycock and Tilley 1995). The reduction of opportunities is seen as a blocking mechanism - a mechanistic way of preventing crime from happening while not affecting the motivation to offend. Some criminologists, nevertheless, suggest that in a sense opportunities do cause crime. While the argument that opportunities cause crime may not be tenable at the highly motivated end of the continuum, where a well-motivated offender might actively seek out, or even create opportunities, this does not apply to the majority of offences. Crime is in many cases far more unstable than it should be were dispositional theories correct. The decision to offend or not can hinge on relatively minor and change events that push the individual in one direction or another. For example, the particular combination of alcohol, a group of excitable peers, and a vulnerable vehicle could well lead to an increased probability that any particular individual young person might commit a car crime offence.

There is also considerable debate whether situational approaches *prevent* crimes or merely *displace* them to other, less-well protected targets, times and places (the '*displacement effect*'). Recent reviews suggest that this is limited (Hesseling 1994). Often offenders give protected areas a wider berth than necessary, creating a '*diffusion of benefits*' that offset displacement effects. Convincing evidence is available of net preventive effects even after displacement of various kinds is taken into account (Welsh and Farrington 1999).

Some types of interventions may be perceived to threaten privacy (e.g. misuse of CCTV and abuse of ID registrations). Research has shown that people are prepared to accept the legitimate use of CCTV surveillance in shops and public places, but are resistant to compulsory identification (Ekblom 1999). Clarke (1995) concludes that worries about displacement and 'fortress society' have generally receded in recent years. Concerns have also been voiced about the distribution effects of the way different groups or individuals benefit from, or are harmed by, preventive measures requires careful consideration (Field 1993).¹⁶ Undesirable effects of SCP such as noise pollution from car alarms can fall on others. Local and national policy steers are needed on these issues. Overall, a consensus seems to be taking shape that some situational methods are effective in some circumstances (Tonry and Farrington 1995).

¹⁶For instance, a laissez-faire approach can lead to inequity, with displacement of crime from the better-off to those less able to protect themselves or obtain publicly funded resources.

1.4 Developing Effective Crime Prevention Strategies

Designing successful strategies for crime prevention requires grounding them on sound theoretical foundations and empirical evidence. In particular, lessons must be drawn from past experience and effectiveness of different crime preventive strategies.

1.4.1 Theoretical Issues

Crime prevention strategies are likely to be more successful when they take into account the broad scope of theoretical ideas about the development of criminal potential in individuals, and about the interaction between potential offender and potential victims in situations that provide opportunities for crime (Clarke 1995). Theories focusing on individual development might include postulates about how individuals and environments interact to produce crimes, while theorists focusing on the opportunistic commission of crimes might include postulates about the development of criminal potential in individuals. Both types of theorists also need to take account of the group context of offending and of the community context of individual development, and criminal opportunities.

In addition, attention should be paid to individual differences between offenders. For example, distinctions need to be drawn between ‘situational’ and ‘chronic’ offenders, and ‘adolescence-limited’ and ‘life course persistent’ offenders (Tonry and Farrington 1997); it has often been suggested that situational crime prevention should be more effective with opportunistic as opposed to more committed offenders (Tonry and Farrington 1995). It is important to investigate to what extent different prevention strategies are differentially effective with different kinds of offenders, offences, and victims, in different places and times.

1.4.2 Research Evidence: Lessons from Past Strategies

In this section we provide a brief assessment of research evidence concerning different approaches to crime prevention, highlighting some of the key issues which have been raised.

As far as the law enforcement approach is concerned, there is an emerging consensus among researchers and public officials in many countries that its potential effects are limited and modest. There is also widespread agreement that alterations in sanctioning policies are unlikely to influence substantially crime rates (Tonry and Farrington 1995). Crimes of impulse, emotion, and intoxication, as well as crimes by individuals socialised into deviance, are unlikely to be much affected by law enforcement threats and criminal justice processes. Nevertheless, the criminal justice system has a central role in providing the sanctions to enforce or reinforce compliance with law, on which other crime reduction initiatives depend.

Evidence of the effectiveness of community prevention is less convincing than for situational or developmental prevention. This is at least partly because of the poor quality of evaluations of community prevention strategies, which makes it difficult to draw lessons for the future from perceived failures (Hope 1995).

Evaluations of a variety of developmental interventions have demonstrated either delinquency-reducing effects or beneficial effects on other indicators (e.g. school performance, hyperactivity, and impulsivity) that are associated with reduced offending probabilities (ICPC 1997). Multiple interventions, which target risk factors affecting all aspects of a child's life, are generally accepted to be more cost effective than initiatives with a single focus. Individuals are less likely to offend repetitively when their early childhood is dominated by consistent and caring parenting, troublesome behaviour when they get to school is met with solutions, and when those inclined to drop out of school are encouraged to complete their education (ICPC 1997). Crime tends to be lower in countries where there are more social benefits and fewer children in relative poverty (ICPC 1997).

Whereas the benefits of developmental prevention may be long delayed, SCP, if successful, typically has immediate benefits. The advantages of SCP have been documented in many studies over a long period (Clarke 1997). The interventions are highly focused, preventing crime against specific products and/or in specific places, and can bypass intractable social problems unresponsive to other approaches, complementing those which treat or incapacitate offenders. Removing temptation through SCP may have a 'multiplier effect' if it prevents crime such as shop theft – which is seen as a typical entry to criminal career. SCP can exploit the 'targetability' of crime problems - repeat victimisation, 'hot spots', 'hot products' - to increase cost effectiveness. Moreover, measures of action are *relatively* easy to link to outcome. If SCP is applied at the design stage (i.e. anticipation) of for example, houses, cars, consumers electronics, retail electronic point-of-sale system, it can be very cost-effective in heading off a 'harvest of crime'. Failure to tackle vulnerability at this stage could bequeath owners, users, and society as a whole, a crime legacy of years in the case of cars, or decades in the case of buildings.¹⁷

High quality demonstration projects and evaluation reviews have shown that when appropriately targeted, designed and implemented, SCP can be a very effective crime reduction measure. A representative range here would be a 40-70 per cent reduction in expected levels of crime (Ekblom 1999). A recent evaluation of the predominantly situational measures adopted by businesses since 1990 to control a rising problem of fraud with plastic cards has shown major success (Ekblom 1999). Charge card, cheque card, credit card and debt card fraud in the UK almost halved (from around £120 million) over the period 1991-95. The ratio of fraud to turnover on sales of goods fell from 0.34% to 0.09%. Welsh and Farrington (1999) undertook an assessment of monetary costs and benefits of 13 SCP studies (including the Safer Cities evaluation). Reliable evaluations of very large-scale SCP implementations (as distinct from development or demonstration projects) however are rare. One of the exceptions to this was the Home Office's evaluation of the mainly situational action against domestic burglary in the Safer Cities Programme. In this programme, action was implemented on a relatively large scale in around 500 schemes over several years. Depending on the background burglary rate, intensity of action, and the outcome measures used, the impact ranged from about 10% to about 30% reduction in expected levels of crime (Welsh and Farrington 1999).

It is difficult to draw any general substantive conclusions about the most cost-effective ways of reducing crime. That is to say, it is not clear if a particular type of intervention works best with a particular type of crime or in a specific time or place. This is not surprising considering the highly specific nature of SCP. On the basis of this review, it would appear that SCP could be an economically efficient strategy for the reduction of

¹⁷Evidence for the effectiveness of government-orchestrated local action at the design stage comes from a Dutch housing estate scheme (Ekblom 1999). For approval, developers' projects must meet standards covering residents' participation, neighbourhood management, home watch, and building design including layout of rooms and entrances and target hardening. An evaluation in Rotterdam showed a 70% reduction in burglaries after one year between those new houses involved in the scheme, and those not.

crime. However, future evaluations need better designs, more adequate estimates of costs and benefits and longer follow-up periods.

1.5 Implementing Crime Prevention Strategies

Successful implementation of crime prevention strategies requires that the following issues are addressed: identifying and involving key stakeholders in the design and implementation process; understanding who to target; working out who incurs the costs.

1.5.1 Involving Stakeholders

A host of different players are involved in implementing crime prevention strategies. These include the general public, the private sector, central and local government, and voluntary and statutory agencies. Crime prevention strategies can be implemented by people protecting themselves, by those with a 'service duty' (police or security guards) and by those with a wider 'duty of care' (e.g. manufacturers ensuring their goods cannot be easily stolen or used to facilitate crime). There are many examples of poorly designed goods and services which, through their design, contribute to crime. Motor cars, for example, are designed with the consumer in mind rather than the potential offender. The 'crime-free car' would have secure locks, an effective immobiliser, a speed limiter and a device to render drunken driving impossible. At present no such vehicle exists, although the technology is almost certainly available. Similarly, while the supermarket layout is efficient in terms of sales, it has increased considerably the potential for shop theft. Businesses can, of course, contribute directly to crime reduction. The role of the government may be to promote and encourage their contribution. Central government can encourage prevention by, among other things, making people and institutions aware of the possibilities of crime prevention. It can correct market failures by acceptable applications and sanctions. It can also establish mechanisms to detect or anticipate emergent crime problems in product design.

1.5.2 Targeting

There is some evidence to show that crime prevention is more effective when it is targeted towards clearly defined and specific recipients (whether these are offences, offenders, location or victims). For instance, the results of policing experiments have tended to show that strategies targeted as specific and local recipients are more effective in reducing crime than divisional or city-level strategies. The most successful property marking programmes have been highly focused (Bennett 1996).

Evidence in support of this view can also be found in more fundamental research on the nature of crime. There is substantial evidence to show that the recipients of 'criminality' prevention at various levels (e.g. individuals, situations, communities) are heterogeneous and complex. This means that it need not be the case that strategies found to be effective in one community will be effective in all others. There is evidence to support the view

that specific and localised crime prevention (as well as specific and localised criminality prevention) can be more effective than undirected and ‘blanket coverage’ approaches.

Another issue is whether to target the highest-risk individuals or areas or more ‘normal’ individuals or areas. As Wikstrom (1995) points out there are ‘hot times’ as well as ‘hot spots’ of crime. The potential payoff, in terms of crime prevention, is greatest with the highest-risk units. Their need is arguably greatest, but they also tend to be the most resistant and uncooperative, and there is also the problem of undesirable labelling and stigmatisation of high-risk units. There are no easy solutions to this dilemma. In practice, it is easier to implement crime prevention research projects and programmes targeted at high risk areas than high-risk individuals.

1.5.3 Who pays?

Not all the costs need be borne by government. Building on the evidence-base for self-protection (and disseminating the necessary information) could be very cost-effective way to multiply the impact of limited government expenditure (Pease 1999). Experience has also shown that governments can find suitable ‘interested parties’ to fund or facilitate prevention (Pease 1999). The insurance industry is one such collaborator. Where businesses and other institutions generate opportunities for crime and pay less than an appropriate share of the resulting CJS costs through taxes, it worth considering extending the ‘polluter pays’ principle. This would require development of some kind of fair and transparent way of tracking and accounting for costs.

Overall, securing design changes in terms of crime prevention has proved difficult (see Laycock and Tilley 1995). There is a need to consider how best to improve incentives for manufacturers, designers, and others to re-design their goods in the interest of crime control rather than profit. Various examples in which incentives could operate to encourage crime prevention include: changes to local or national personal taxation; similar changes in corporate taxation, and encouragement for the reduction of insurance premiums. Effective incentives can be soft as well as hard. Matthews and Pease (1998) suggest large differences between banks in rates of repeat robbery, which implies that some banks are putting into place measures after one robbery to prevent the next.¹⁸ Similar differences exist between car models. Behind-the-scenes threats to shame or to withdraw police prosecution resources can be effective (Pease 1999). A more overt approach is provided by product indices (such as the Car Theft Index). These help consumers avoid the least secure products and encourage competition between manufacturers based on their reputation for secure products. Such differences could be made public if discussion fails to secure adoption of best practice.

1.6 Conclusion

The criminology literature argues that different crimes have different causes, and different offenders commit crime for different reasons. Some offences occur as anomalous acts in generally law-abiding lives, while others occur as routine events in generally antisocial lives. An effective overall crime reduction strategies should be

¹⁸Quoted in Pease (1999).

varied and shaped to take account of important differences in crimes, criminals and victims. The components of an effective and integrated strategy might rely on:¹⁹

- intensive interventions among children and families at risk;
- increasing informal social control and social cohesion in communities and institutions that are vulnerable to crime, criminality, drug usage and disorder;
- targeting situational prevention measures on ‘hotspots’ and areas of high risk generally;
- reducing repeat victimisation;
- placing greater emphasis on problem oriented policing;
- extending the range of interventions with offenders and drug users;
- making more use, in appropriate circumstances, of penalties such as fines and curfew orders with tagging
- intervention in the development of products or services vulnerable to crime so as to make them less so;
- incentives to individuals and organisations to reduce the risk of crime;

It is generally argued that none of these initiatives is likely to significantly reduce crime on its own, and that an effective crime reduction strategy is one in which an integrated package of best practice is developed and delivered consistently over time. It would include activities aimed at achieving gains that accumulate steadily (such as offender programmes, community action and education programmes) with activities such as Situational Crime Prevention which might have a more immediate impact.

Research suggests that of these various strategies, Situational Crime Prevention does have enormous potential to reduce the opportunities for crime, and to have an effect in a relatively short time-frame. A concerted attempt to improve awareness of ‘Design Against Crime’ in industry and amongst designers, and to encourage design decision-makers to take crime resistant design seriously, would appear to be a valuable and worthwhile initiative, which could ultimately have significant and long-lasting benefits for the UK. However there is little prior research which has explored how products and service are currently designed and developed, and how designers currently view the importance of crime resistant design. This report constitutes an initial attempt to cast some light on the current state of crime resistant design in the UK, and makes some tentative recommendations, based on the findings, as to how this might be improved.

¹⁹The policy implications of this paper are in line with the recent report commissioned by the Criminal Justice System in the UK.

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Part One

Report from the University of Cambridge



Part Two

Teaching Design Against Crime



1. Introduction

The research teams at Sheffield Hallam University and the University of Salford have focused specifically on the design industry, rather than on design against crime within the whole business arena. This section concentrates on an investigation into how crime reduction is currently incorporated into design education and practice, and exploring the best methods of raising awareness of these issues.

1.1 Aims and Objectives

In addition to following the main objectives for the overall ‘Design Against Crime’ research, the ‘Teaching Design Against Crime’ project had the specific objectives outlined below:

- Assess the current awareness of crime related design issues in design education.
- Identify and document any exemplars of relevant educational practice.
- Develop initiatives that place Design Against Crime on the educational agenda.
- Propose recommendations for the development of an educational and training strategy for designers.

The specific goal for designers is to incorporate good quality design against crime in ways which make 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 tool for the commission of crime.

1.2 Methodology

Initial desk research into the current situation regarding design and crime was carried out, covering design trade press and related publications, academic journals on design and design education and newspaper reports. Whilst crime was covered extensively in the general media, there was very little evidence of any connection being made between crime and design. A recent exception to this is the formation of the Jill Dando Institute for Crime Science, established at University College London. This has received widespread coverage in the media, and does refer to the connection between design and crime. Further information is available at the Institute web site.²⁰ While the subject appears not to have been covered elsewhere in general terms to any great extent, there was some coverage on specific industry matters within some design disciplines. Architecture, urban and building design has covered various aspects of crime related design, and this has been the subject of some discussion within these fields.

²⁰ www.jilldandofund.com/

Two questionnaires were prepared to gather quantitative information about the current understanding of design against crime. The first of these was a one page fax questionnaire sent to over 130 design consultancies from a range of design disciplines. The second was a postal questionnaire targeted at design educators in over 300 design courses within the UK.

Semi structured qualitative interviews were carried out with key stakeholders within design and related industries, to ascertain the current awareness of crime reduction amongst designers, and to look for effective methods of introducing the concept of ‘design against crime’ to both student designers and practising professionals. People interviewed included key figures in all the design industry bodies, designers from a wide range of design disciplines, design educators, including respondents to the postal survey, and manufacturers. Following analysis of the interviews, issues affecting design industry with regards to crime reduction were identified and discussed. Case study exemplars of current inclusion of design against crime and of key organisations and individuals were then prepared. Drawing on all the data collected, recommendations for introducing design against crime into design education and professional practice were then determined.

1.3 Outline of section two

This section of the report sets out to investigate the current awareness of design against crime from the point of view of a variety of interested parties. We present the key stakeholder perspectives from these groups.

First of all, the general awareness of crime reduction and the opinions of those currently involved in crime reduction initiatives are discussed, looking at perspectives about how design can impinge on crime, and the best way of approaching this from a crime reduction viewpoint. An general overview of current thinking within the design industry on crime issues and its relevance to design introduces the area of design against crime.

Design industry bodies provide a gateway to the design industry. The key organisations have a significant influence within the industry, and interviews were carried out with key personnel involved directly with each organisation. An overview of all the organisations, and their potential input in future design against crime initiatives are presented.

The views of practising designers follow in chapter 3, from disciplines including product design, packaging and graphics, environmental design and new media design. Crime issues relevant to each area of design are discussed, with examples given of current inclusion of ‘design against crime’ and more detailed case studies detailing how crime has been considered within the design process.

Results of the interviews and surveys carried out within design education are then presented, outlining examples where crime and other social issues have been already been considered and successfully incorporated within the design curriculum.

The key findings from this research is then discussed, together with recommendations for an educational strategy to increase awareness of ‘design against crime’ amongst designers.

2 Building Crime Reduction Awareness

2.1 Introduction

The design professions work within a general context of crime reduction awareness. Before considering the activities and attitudes of designers themselves, it is first necessary to map the agencies and initiatives that seek to raise crime reduction awareness.

We begin by considering the roles of Crime Prevention Officers and Architectural Liaison Officers, part of the police service and working with local communities and businesses. Much emphasis has been placed on recognising how environmental design can effect crime reduction, and the Secured by Design initiative is described as an example of this. We then consider how awareness in business and industry is influenced by a range of agencies, including the Home Office itself, Retail Crime Partnerships and the security industry. Finally this chapter examines the methods used to educate crime reduction professionals, with a view to assessing their application in design education. Our research here draws on visits to the Crime Prevention College and higher education criminology departments, in addition to a review of trade literature and information.

2.1.1 Awareness amongst the general public

The responsibility of improving crime prevention awareness amongst the general public in each police district rests with the Crime Prevention Officers (CPO) and Architectural Liaison Officers (ALO). The main role of the CPO is to promote crime reduction methods within the community, and raise awareness amongst the public of how to reduce crime. This often involves the production of literature and promotional material aimed at specific groups, for example small businesses²¹, teenagers²², and the elderly²³. Discussions with the Crime Prevention Officers in Central Sheffield district and at Salford have explained their role in promoting crime reduction. Programmes such as Neighbourhood Watch have been effective in promote crime prevention awareness amongst the general public.

The effect of design in reducing crime was clearly apparent to the CPOs interviewed. Their experience in practical measures to reduce crime mean that the CPOs are often highly aware of how easily crime reduction can be implemented through changes in design. Within pubs and clubs for example, design changes have been implemented within toilets to prevent drug taking, which include producing towel holders and windowsills with rough or sloping surfaces to deter cocaine use, and using blue light bulbs in toilet cubicles which make it impossible to locate veins for drug injection. However, these design features were reactive to problems identified in

²¹ Crime Prevention College Digest. (1998). "Business Crime CD ROM." *Crime Prevention College Digest* April 1998: 1.

²² Crime Prevention College Digest. (1998). "Teenage personal safety." *Crime Prevention College Digest*. April 1998: 3.

²³ Crime Prevention College Digest. (1998). "SeniorLink." *Crime Prevention College Digest*. April 1998: 17.

particular areas, and the opinion of the CPO was that in his experience “no thought is given is given to crime reduction in any sort of design.”

Raising awareness of crime reduction is difficult, especially when it involves spending money with no obvious return. One Crime Prevention Officer described it being “difficult to persuade people to take the initiative if they do not see any immediate benefit from it.” Often crime reduction measures do add to costs, and people are reluctant to pay for this, as explained by the CPO in Sheffield. “Crime is accepted amongst most people ... it takes a major problem to make people react and take action against future crime incidents. No-one does anything proactively.” This problem has also been encountered amongst manufacturers, as it represents an increase in cost with no direct benefit to the company. He went on to give his view that “the situation will not change until there is a greater emphasis on customer care than higher profit margins.”

2.1.2 Secured By Design

The Secured By Design initiative promotes design of the environment to reduce opportunities for crime [refer to Cambridge section]. It covers various sections including new homes, refurbishment, commercial properties, and outdoor and indoor car parks. It also encourages those who make the design decisions of security products such as locks to design to meet the minimum police recommended specifications. Manufacturers can then apply to Secured by Design for product endorsement (products as such are not endorsed, rather the specifications to which they have been made - a very clear distinction they wish to make). The Secured by Design logo can then be included on product packaging. The initiative aims to reduce many aspects of crime and perceptions of fear of crime, including domestic burglary and theft, violence, and criminal damage. Raising awareness of the initiative amongst architects and planners has taken several years, architects showing little interest at first. Improved marketing has increased this awareness, and many housing associations now insist that new buildings meet the criteria set by Secured by Design.

2.1.3 Awareness in Business and Industry

Initiatives to promote crime reduction awareness amongst businesses have illustrated the difficulties involved in providing incentives for doing so. Home Office reports, action by Architectural Liaison Officers and information within specific industries all promote action which can be taken by individual businesses to protect themselves from crime. The Home Office produces guidelines for different businesses and areas of industry to try and reduce crime. For example, reports are available for retailers, covering the prevention of burglary, robbery, violence against staff, customer fraud, and customer theft. Much of the crime prevention literature for businesses can be found on the Home Office web site²⁴.

The role of the Architectural Liaison Officer (ALO) is to liaise between police, architects and their clients at the initial design concept stage, to provide advice on the design and material specification to minimise crime opportunities.²⁵

Certain industry sectors which are affected by crime provide information on crime specific to that industry. For example, the British Retail Consortium produces a Retail Crime Survey annually,

²⁴ www.homeoffice.gov.uk/crimeprev/

²⁵ “Design Against Crime.” www.mcbrideg.freemove.co.uk/design_against_crime.htm

which in turn generates numerous newspaper and trade press reports relating to this²⁶. In the survey report, trends in retail crime and associated costs are highlighted. The BRC is proactive in promoting Retail Crime Partnerships across the country, such as the City Centre Retailers Against Crime group in Sheffield, which involves collaboration between local authorities, major retailers and the police in reducing crime in the city centre environment.

Within the design industry, a common theme which arose was one of the designer being a victim of crime. Almost without exception, every design consultancy visited had at some time experienced theft of property from their premises, and many were conscious of crime reduction only from the perspective of preventing further attempts of burglary through installation of security systems. One security specialist advising design consultancies on security issues described designers as being “more interested in the aesthetics of a computer than the security.”²⁷

The majority of these initiatives are promoting crime reduction awareness within businesses themselves, providing advice about what techniques and technologies are available to reduce the possibility of becoming a target of crime. For manufacturers, little is done here 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. There are some exceptions within the security industry, such as SmartWater, a coding system which contains a unique chemical marker. Whilst this has primarily been used as a crime detection aid, it is now being marketed as a crime prevention feature to be incorporated into products during the manufacturing processes, the example given being car manufacture, with all parts in a car being sprayed with the unique identifier, which can then be index linked to the cars VIN number.

2.1.4 Awareness amongst crime reduction professionals

Looking at methods of educating professionals involved in the security industry and the police about crime reduction issues may provide some useful insights into how these could be adapted to raise awareness of crime reduction amongst designers. Information channels used to keep crime reduction and security professionals aware of new products and technologies could be adapted provide a resource for designers.

2.1.4.1 Crime Prevention College

The Home Office Crime Prevention College, based in Easingwold, near York, is the national training centre for Crime Prevention Officers and Architectural Liaison Officers from all the police forces within the UK, including the British Transport Police and Military Police. The college carries out three complementary roles: providing training and development for the police; producing training packages for others involved in the security industry; and provision of information. Three courses are offered for police training. The standard course covers the basic skills required by crime prevention officers, from information on security and surveillance equipment, to campaign management. This is a workshop based course, with the emphasis on practical problem solving. The Architectural Liaison Officers course, which is lecture based, covers issues of design of the built environment in much greater detail, including the promotion of using secure products within building design. The Secured By Design initiative is covered in

²⁶ Campbell, D. (1998) “Retail staff suffer more violence but arrests fall.” *The Guardian* 19 Feb: 21.

²⁷ Marshall, S. (1997). “Design studios at risk of theft.” *Design Week*, 5 Sept

detail. Delegates on this course are introduced to the working practices of architects and planners, and ALO's are encouraged to shadow these people at work to learn more about their job functions. The third course is aimed at managers within the police force, covering the basics of crime prevention and how it relates to their managerial role.

The college has a substantial library on all aspects of crime reduction, including Home Office reports, textbooks, and related trade press, although access to the information is restricted. The information office also collate all the crime prevention activities within the different police forces in the UK. A Digest, which is distributed to all Crime Prevention Officers, is produced quarterly and gives information on recent crime prevention activities such as articles on CCTV, retail crime prevention training, alarms awareness seminars, licensed premises security guide and new crime prevention CD ROM's and websites. Contact details are listed at the end of every article for further information. The Digest includes a separate section on 'Architectural Matters' which looks specifically at design issues, related to the built environment. Recent publications are also listed.

2.1.4.2 Home Office Reports

The Home Office Crime Prevention Unit research reports refer to tackling and reducing different types of crime. Information from these reports is incorporated into the crime prevention courses and reported in police journals and newspapers. These also form the basis for many guidelines tailored for specific audiences.

2.1.4.3 Higher Education

Criminology and related courses can be studied at numerous universities, many of which contain aspects of community related crime, and crime prevention measures, although these are generally not a major element of the course. A limited number of other courses are available which concentrate specifically on crime prevention, such as the Postgraduate Certificate in Community Safety and Crime Prevention, run as distance learning course at the University of the West of England. It is aimed at professionals such as community safety officers, housing managers, architects, planners, police, teachers, social workers, probation officers, youth workers and community workers. Topics covered on the course include applied criminology, aspects of community safety, locality and community development, personal safety & conflict resolution, town centre safety and youth criminality prevention.

Research within criminology departments may provide further focus on crime reduction. Links have been made between design and crime reduction, for example in the project entitled 'From Crime to Design: Modus Operandi and Crime Reduction' carried out by the Huddersfield Applied Criminology Department. This has been looking into MO information that can be fed back to designers to assist in the design process. The project aimed to determine what information was available to designers to help them design out crime, whether MO information can be used to inform designers, and the best format for presenting this. Business sectors which have been investigated include telecommunications, breweries, retail and the motor industry. In general it was found that there was no central resource of MO information available, and few incentives to include crime reduction features into design

2.1.4.4 Trade Information

Information about developments in technology and new crime prevention products can be found in numerous trade journals which are produced at regular intervals throughout the year. These include titles such as Security Management and Industry Today, Security Installer, Security Surveyor, Public Security and Retail Security. These also carry information about various trade exhibitions which take place throughout the year, the main one being Securex, held each Spring.

Trade organisations which exist within the security industry such as the Master Locksmiths Association, have methods in place for the secure control and distribution of sensitive information to members, for example on criminal modus operandi.

3 Design Organisations

3.1 Introduction

The design industry is served by four main representative bodies, all serving a different purpose and attracting different audiences. Interviews were carried out with key personnel within each organisation to establish to what extent crime reduction issues had been covered within the design industry, to discuss the perceived relevance of crime reduction to the design industry, and offer suggestions for improving awareness of the issues raised amongst designers. Each design organisation has a certain degree of influence within its target audience in the industry, and without exception, all are willing to promote the issues where appropriate. In addition to the representative bodies primarily serving the design industry, the RSA has already become involved in the promotion of Design Against Crime, through the annual Student Design Awards.

The summaries below provide some background information to each organisation, the level of contact each has with the design industry, involvement in design education and professional development, and the potential contribution of each to 'design against crime'.

3.2 Design Council

3.2.1 Background

The Design Council's main role is the promotion of design in the UK, and making business more competitive through design. By promoting the importance of design to the government, design can become an integral part of government policy. The Millennium Products initiative identified over 1000 exemplars of innovation in UK products and services in all disciplines. Other initiatives include the Special Design Project Funding, providing funding to schemes aimed at promoting effective design practice. The Design Council is also involved in the funding and management of a number of other initiatives.

3.2.2 Contact with Designers

The Design Council produces numerous publications about current issues and trends in the design industry, and how this relates to the education and business arenas. A new publication, i, is produced three times per year, and provides information about projects and initiative with which the Design Council is currently involved. The web site also provides up to date information on this. The Design Horizons web site has been set up showing social, economic, technological and environmental trends, based on work commissioned by the Design Council. Working partnerships with other organisations are central to providing information and resources

for the design industry, and so the Design Council is involved in both formal and informal collaboration with other design and business organisations.

The Design Council was seen by practising designers to be the most prominent and effective design organisation representing the design industry at present ²⁸.

3.2.3 Design Education

The Design Council promotes the use of design in education, in much the same way as it promotes design in industry. Whilst the priority of the Design Council appears to be to promote design in business schools, links are maintained with design schools to ensure that courses gear students to be able to operate within a business framework, to encourage communication between design and industry. Providing design knowledge to business schools will ensure that future users of design are aware of its importance in industry.

Design in Education Week provides a forum for discussion on the future direction of design in education, receiving national media coverage. This would provide an effective forum for dissemination of information about design against crime.

3.2.4 Professional Development

The Design Council is not specifically geared towards providing resources for the professional development of designers, although there are strong links with other design organisations which focus more on this.

Lesley Morris, Senior Manager for Higher Education and Business raised concern about the “dearth of information” available to designers or those looking for design related information. Whilst information on other social issues is available on a variety of web sites, no single source of information appears to provide the range and depth of information which designers may require. The Design Horizons web site may go some way to providing broad design information about recent research affecting the design industry.

3.2.5 Design Against Crime

Design Against Crime is not an issue that has been considered previously by the Design Council, although this is now seen as a significant area for inclusion in their overall strategy for future work. There are various opportunities for dissemination of research findings and practical outputs developed through work on design against crime, targeted at design students, practising designers, and industry in general.

Future events focusing on design against crime during both DIEW and DIBW, in addition to promotion on the web site and in publications will encourage greater awareness of crime issues amongst designers and businesses alike.

²⁸ Manuelli, S. (2000). “Body Language.” *Design Week*, **15**(4):18-21

3.2 Design Business Association

3.2.1 Background

The DBA, formed in 1986, is the design industry body representing the interests of its members to three audiences – clients, trade organisations and the government. One of the major activities for the DBA is the annual Design Effectiveness Awards, demonstrating the effectiveness of design as a tool for business, to the government and industry, showing that “design can be effective as well as creative.” Other task groups within the DBA cover information technology, training, design awareness and exports. ‘Design for Good’ has recently been established within the DBA which is helping to provide design expertise to charities which may not otherwise be able to afford it.

There is also a series of ‘Design Debates’ held at regular intervals throughout the year, at which several invited speakers discuss current topics relevant to the design industry, and how future developments will affect business. Recent debates have looked at the digital revolution, design education, and creativity in the future. There are also ‘Business Breakfasts’ held 4-5 times per year at the Design Council. These attract more select, high profile audiences, and generally have one or two speakers, followed by a discussion forum involving the audience. They cover a wide variety of design business related subjects. Regional events are also held occasionally.

For clients, a referral service is provided by the DBA, linking them up to the most appropriate design consultancies, along with a comprehensive directory of member companies.

3.2.2 Membership

The DBA currently has a company membership of around 300, representing approximately 6000 individuals, or 70% of the design industry. All design disciplines are covered within the membership. A monthly email newsletter is sent to all members detailing latest developments affecting the design industry. A web site also provides further information of members and ongoing activities. They are seen to be fairly influential within the design industry, and effective in representing company needs.

3.2.3 Design Education

The DBA is not involved with student designers and design education at university level at present.

3.2.4 Professional Development

The DBA holds regular training workshops for its members, mostly centred on business related issues, providing help and advice on running a business, presentation skills, intellectual property rights and design law. They also publish a number of guides on these topics for members.

3.2.5 Design Against Crime

Whilst other social issues have been covered to some extent through the activities of the DBA, design against crime has received no attention as such. The subject did generate considerable interest amongst all those approached, and was seen as being relevant to the DBA members if presented by an appropriate method. Amongst the issues discussed with personnel at the DBA were designers accountability for crime resistant design, indicating that designers should not be held accountable as there are too many other social factors affecting the commission of crime. Isolating the effect of design on crime may be difficult due to these other factors. Lynne Dobney, Chair of the DBA explained the importance of a positive approach, and not holding designers accountable for crime.

“Designers need positive thinking about what they’re designing ... this won’t happen if designers think they’re going to be blamed for problems which are affected by other social problems. Designers can’t be held accountable, but they are trying to change behaviour and attitudes.”

It was suggested that designers would be enthusiastic about the issue of ‘designing out crime’ if it was clearly defined, and would be inspired to incorporate this if they could see the benefits to society.

The suggestion was made to include it as a topic for discussion at a future Business Breakfast. This would need to be presented in a positive, imaginative way, and as a challenge for designers to meet, with focused design exemplars demonstrating the relevance to the design industry.

Cases presented would need to provide inspiration to the audience, and generate further debate. It was also suggested that this would be a suitable topic for discussion for the Parliamentary Group for Design and Innovation.

3.3 British Design and Art Direction

3.3.1 Background

The D&AD is a professional association and educational charity, established in 1962. It aims to promote design and advertising excellence, primarily through the professional and student award schemes. The education department strives to encourage new creative talent to work towards creative excellence. It's activities are currently geared more towards the advertising side than design, though this is dependent on the current president, who alternates between design and advertising each year. The D&AD awards are a major focus of their activities, attracting approximately 15,000 entries each year. Winning entries are published in the D&AD Annual.

3.3.2 Membership

There are currently over 1600 full members of the D&AD, plus associate and student members. There is a 40/60 split amongst the members between design and advertising. Whilst membership is restricted to those who have had their work published in the D&AD Annual, this represents those who have achieved excellence within their field, and are therefore the most influential within the creative industries. There are also 50 college members, the majority of which are twinned with design consultancies or advertising agencies. Members receive Ampersand, the D&AD's newsletter published quarterly, which addresses current issues in design and advertising. The web site also provides further information on member services, including education and professional development.

3.3.3 Design Education

The D&AD has two educational objectives relating to colleges: to promote better links between the industry and education and to support colleges in the UK by providing resources and contacts in the industry. These are achieved through the D&AD Student Award scheme, which mirrors the professional awards, attracting over 1400 entries in 1999. Winning work is published in the Student Annual, and included in an exhibition. The briefs are set by industry sponsors, further strengthening the links between education and industry. Advertising and design workshops are also held for students, currently based in London, but with plans for future regional events. A three day workshop takes place each September for course leaders, to keep them informed of new developments and changes in direction within the creative industries.

3.3.4 Professional Development

The third educational objective of the D&AD is to assist creative practitioners in their continuing professional development and training. This is done through training courses, the Presidents Lectures, which brings in high profile speakers to talk about issues currently relevant in the creative industries based on a theme set by the current president, and various publications. This is an area which is receiving further attention during 2000.

3.3.5 Design Against Crime

Crime has not been covered as a separate design issue by the D&AD, but benefits of including it with students were apparent, as Claire Fennelow, Training and Education manager at the D&AD explained.

"I think it's a good point to start with students, because if they're doing briefs where it is part of the criteria at an earlier age, most people will start to think about that. OK, they won't be able to do it unless they get the opportunity, but at least the seed is sown. It's in their minds."

Social issues only tend to be included in design briefs when specified by a particular sponsor. Crime is a topic which has not previously been considered, although there are a number of briefs where it could have been included as another of the criteria to be considered. The briefs from this year which could have incorporated a 'design against crime' aspect included the design of a new credit card; the environmental design brief, to design a retail environment for shifting patterns of urban regeneration; and the design of a public interactive kiosk. Several briefs from the 1999 student awards were also highlighted during discussion as having had the potential to include aspects of crime reduction.

This does indicate the possibility for inclusion of crime related issues in future design briefs, both for the student awards, and in packs of projects briefs sent out twice yearly to tutors at member colleges. The D&AD have indicated their support for raising awareness of Design Against Crime amongst designers. For professional designers it was again suggested that an industry debate would be appropriate in starting to get people to think about design against crime, although it needs to be presented in a way which would be imaginative and inspiring.

3.4 Chartered Society of Designers

3.4.1 Background

The Chartered Society of Designers was founded in 1930, and is the professional chartered organisation for designers in the UK. It represents the needs of individual designers rather than companies, acting to promote best practice in design.

3.4.2 Membership

There are currently over 7000 members from various design disciplines, including product, fashion and textile, interior, and graphic design, design education and design management. This includes a large student and graduate membership. A magazine is published at regular intervals throughout the year, and they hold a number of national and regional events, both professional and social. Weekly events, with invited speakers are held at the London headquarters, covering a variety of topics of interest to CSD members. There is no web site at present.

3.4.3 Design Education

Whilst little information could be gathered about the involvement of the CSD in design education, it is apparent that they support events such as the New Designers Exhibition, and through the CSD Design Innovation Award for graduate designers.

3.4.4 Professional Development

The CSD run a programme of training and professional development, which it advertises in the bi-monthly magazine. Recent training courses have included starting a design business, presentation skills, project management and marketing on the internet.

3.4.5 Design Against Crime

Gathering information about the CSD presented a number of problems, and this would need pursuing further to establish whether the CSD would be of assistance in raising awareness of crime related issues. Indications are that the CSD has been slow to take on board other social issues in design, and therefore may not be the best partner to work with in promoting design against crime in the future. However, given the extensive membership, it may be worth pursuing this further.

3.5 Royal Society of Arts

3.5.1 Background

The Design Department of the RSA is primarily involved with running the Student Design Award programme, and administering the Faculty of Royal Designers for Industry. Both these initiatives enable the department to work towards their aims of keeping abreast of developments within the design industry, encouraging young designers, and promoting links between industry and design education.

3.5.2 Membership

The RSA has a fellowship of approximately 23,000 at present, from a wide variety of fields and industries. The RSA Journal is published quarterly, and contains articles about projects currently being undertaken by or commissioned by the RSA. There is also a lecture programme run by the RSA to coincide with the academic year, which covers a variety of topics, and attracts high profile speakers and audiences. The lectures also often receive coverage in the national press.

3.5.3 Design Education

The Student Design Award scheme has been running for 75 years, and is fully embedded throughout many design courses in the UK. Project briefs are generally sponsored by industry, covering a wide variety of design related disciplines. While most carry on from year to year, the areas covered are reviewed regularly, and adapted to the changes ongoing throughout the industry. Social issues such as sustainable design and design for ageing are introduced into the award scheme as appropriate. Winning work is displayed in an exhibition.

3.5.4 Design Against Crime

Crime reduction and design is not an issue which has been addressed by the RSA prior to the current SDA projects. Less crime through design is now seen as an important social issue which deserves consideration, with common themes with other social issues such as design for ageing.

There are two briefs in the 1999/2000 SDA projects concentrating on 'less crime through design', which emerged after extensive discussions with the Home Office and the DTI, and several drafts of the project briefs. The projects cover bicycle security and secure student accommodation, as

this was seen as areas which would directly affect and therefore hold greater appeal to students. It is hoped that students will research the crime areas involved, and also include user research. In addition to the projects looking specifically at security, a further prize is to be awarded to the entry for any other project which has given some consideration to crime reduction in the design solution.

Generating interest in new projects has previously been a problem for the SDA scheme, with both students and their tutors. Susan Hewer, Head of Design at the RSA explained the difficulties associated with this

“It really is a challenge to get students interested in it ... probably most of the students who actually tackle these project won't have thought about crime. I think the problem will be getting student take up in as much as making the projects relevant, and making crime seem sexy. I think once we get tutors interested we're almost there.”

One of the problems that has been foreseen with these projects is availability of information, and the to try to overcome this, relevant links have been included on the RSA web site. This highlighted the issue of having a single information source on the subject of design against crime available for designers and students. Lack of information, and knowledge about where to obtain the information is off-putting when considering a new area such as this.

Whilst not attracting a huge response from students, with around 25 entries, the less crime through design appears to have generated some interest. Many more than this submitted preliminary entry forms indicating that they would be submitting projects in this category, but these failed to materialise. The Home Office support of the RSA student design awards, which is set to continue for another two years, will be invaluable in raising the issue of reducing crime through design at college level. Feedback and evaluation from the first year will determine the direction taken for the forthcoming projects. Further interest can be generated through articles in the RSA Journal, and other publications about the subject.

3.6 Other Design Related Organisations

3.6.1 Packaging Solutions Advice Group

The PSAG is a consortium of leading packaging manufacturers, who aim to communicate and provide advice on the capabilities of their technologies to packaging designers and their clients. In order to raise awareness of the group amongst the design industry, they regularly hold debates on topics of interest to packaging designers, generally attracting audiences of around 200, and generating coverage on the topics discussed in the design and packaging press. The possibility of holding a future debate on the subject of anti counterfeiting and brand security is currently under discussion by the committee.

3.7 Summary & Discussion

- Discussion with all of the design organisations generated a positive response, and all were supportive of future work to promote design against crime, and offer assistance in taking the ideas forward.
- Possibility of Business Breakfast with the DBA, publicity about the subject amongst member companies through monthly email newsletter.
- Crime issues need to be presented positively to the design industry from the outset - once they lose interest it will be difficult to get them back.
- Possibility for inclusion of crime related brief in D&AD awards, or inclusion across several briefs, as with the RSA.
- Need evaluation of current RSA awards - what appeals to students and what doesn't, what information did the tutors require, how easy was it to find this information
- Need to pursue CSD further, they have direct access to a large proportion of designers in the UK.
- Need for provision of information - resource such as a web site with relevant hotlinks, case study material, information on design against crime research. Based on a similar model to the work being done by Emma Dewberry at Goldsmiths supported by the Design Council.
- Potential interest to related groups such as the PSAG - any others who could be approached?
- The majority of designers regularly read the design trade press, such as Design Week. It was suggested that this would be the most effective method of bringing the subject to the attention of a wide design audience.

4 Design Practice

4.1 Introduction

This section of the report addresses the role of the practising designer in designing against crime. There are numerous design disciplines in practice, and these can be categorised in many different ways. However Potter²⁹ originally defined design in terms of designing messages, products and places, this definition is still relevant today and can be used to identify the unique skills which designers use in relation to the field in which they operate.

4.1.1 Messages

This area includes: graphic designer, illustrator, new media designer, interface designer, information designer, photographic designer, fashion editorial designer, advertising designer

Primarily this area of design activity is concerned with representation and communication in a two dimensional environment, the emphasis is on line, pattern, colour, space, the form both of an image or a letterform, and the communication of content, both of image and text. As Maurice de Saumarez described in 1964 “it is dependent upon the expressive and constructive use of the specific phenomena of vision”³⁰. A recent change that has occurred in this field has been the move from the printed medium to the digital medium. Designers who are now working with computer graphics, CD ROM technology and the World Wide Web i.e. interactive media, have to take into consideration the added dimensions of space and time. The technology is also merging professionals in this field with other media related professions such as people in advertising, music, film and TV. Designers, in working with messages must be equipped with the capability to understand the communication needs of both the sender and the receiver. The ability to manipulate images, letterforms, colour, sound in space and time and communicate the results through visualisation abilities.

The following case studies on packaging and automotive design illustrate how such design practices contribute to designing against crime.

4.1.2 Things

²⁹ Potter, N. (1974). *What is a designer: things, places, messages*. Reading: Hyphen Press.
³⁰ De Saumarez, M. (1964) *Basic design: the dynamics of visual form*. London: Studio Vista

Designers who design 'things' include the: packaging designer, product designer, industrial designer, shoe designer, fashion designer, ceramic designer, jewellery designer, glass designer, and automotive designer.

Designers concerned with 'things' are predominantly designing in a three dimensional environment. In this category there is a spectrum of professionals from the pure artist craftsmen, ('making' in this sense is often related more to artistic expression and creation) and to the commercially orientated designer who is designing for a market and an end user. There are also designers who work in between these extremes, those who design and produce on a small batch basis. All of these designers are concerned with three dimensional form, line, shape, texture, properties and materials, and depending on their specialism the functional and user qualities of the 'thing'.

One of the most recent issues for 'thing' designers is the impact of new technologies. These can be in relation to: the act of designing i.e. the use of computer aided design and virtual reality, the manufacture, such as rapid prototyping and robotic manufacture, the materials, for example the advent of smart materials or the use of new textiles.

As with the 'messages' category some design disciplines in this area are merging with professions outside their specific field, and this is particularly evident in product design. Product designers are involved with the entire innovation process, interfacing or merging competencies in electrical engineering, mechanical engineering and software development.

Designers of 'things' therefore must be equipped with the skill to understand the requirements of the many stakeholders concerned with the creation and use of the 'thing'. They must be able to extract these requirements, interpret and synthesise them; use problem-solving abilities to isolate the key issues; and use knowledge of manufacturing techniques, of materials, of functions and design elements such as shape, texture colour to produce a 'thing' which solves the design need or problem. They must also use visualisation skills to illustrate the concept for effective manufacture and user adoption.

The environmental, product and automotive case studies which follow are representative of the designers in this category.

4.1.3 Places

Places are created by the interior designer, theatre designer, retail designer, exhibition designer and the set designer.

Designers of 'places' work in two and three dimensional environments, they are concerned with the interaction between the human and the environment, the scale, shapes, images, colours which all impact the senses. Work in this area ranges from the simple shop window to a major exhibition. Yet again there is a trend in this area of the design profession towards the increase influence of technology as a medium of expression and therefore designers again are developing technological based skills or are working in an environment with other disciplines, being less reliant on craft based making skills.

Designers of 'places' must have the skills to understand a comprehensive set of design requirements, to extract them from the 'place' stakeholders i.e. client, customer/user and manufacturing/construction teams and use visualisation skills to manipulate colour, texture, shape, light, sound and odour to create the environment, the 'place'. They too require communication skills both verbal and visual to explain the concepts to the stakeholder audience.

The interior case study in the environmental section which follows is representative of this category of designer.

Designers play a pivotal role in the creation of the material world. For designers working within the realms of places, messages and things there are common influencing factors, technological change, environmental change and market change. It has now been recognised by the design profession that design skills are important in conjunction with a combination of management and business skills. The trend is towards design being part of the multi functional team to enable them to integrate with scientists, engineers, managers, and psychologists etc. and use their combined knowledge to create the most appropriate and effective design solution. It is therefore appropriate to study how such designers respond to the issue of crime in their practice and how they are able to design against crime.

This chapter on design practice illustrates how crime is considered within various design disciplines. Two methods have been adopted to gather information on the current levels of crime reduction awareness in professional design practice. Results from a survey conducted amongst design consultancies, covering the top UK consultancies, is presented initially. In depth qualitative interviews were carried out with key stakeholders in design, namely practising designers, their clients, and manufacturers, in the fields of product, automotive, packaging, environmental and new media design. Crime issues relevant to design and case study exemplars from each of these areas are introduced, discussing how they can, and do, consider crime in their own practice and discipline. The chapter reveals issues that need to be taken into consideration when including crime related topics on the design agenda.

4.2 Consultancy Questionnaire

4.2.1 Introduction

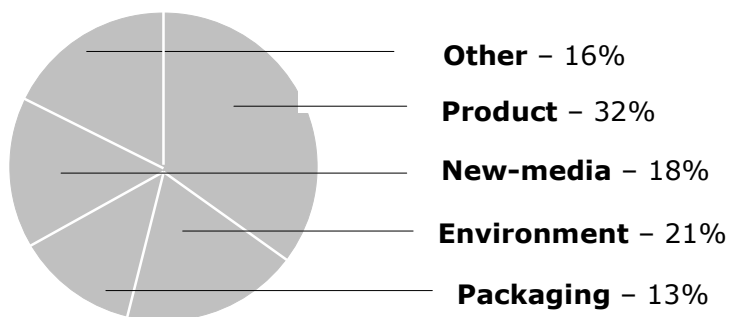
In order to gain a deeper understanding of the extent to which crime reduction principles are employed in the development of new designs, As survey was conducted amongst design consultancies listed within Design Week's Top 100. Design Week is a trade journal which is read by most designers and reflect current design issues and profiles current design projects across all design disciplines. Annually, the magazine rates the Top 100 design consultants in the U.K based on turnover.

Consultancies were also selected from the British Design Initiative, an organisation whose purpose is the promotion of U.K. design on a global arena and as such lists details of the leading design consultancies. One hundred and eighteen companies were surveyed with a response rate of 31%.

4.2.2 Results

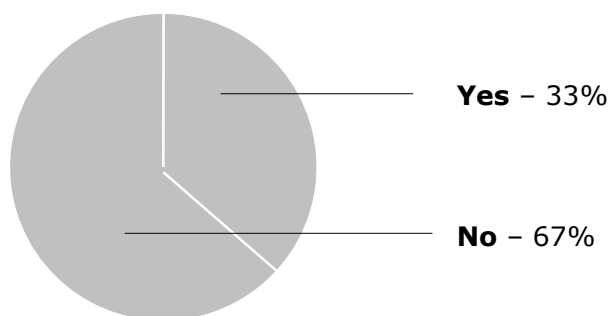
The respondents were asked eight questions, and the following diagrams illustrate the responses for each of these.

1. We are examining the following design disciplines. Please indicate which of the below best represents your company's activities.



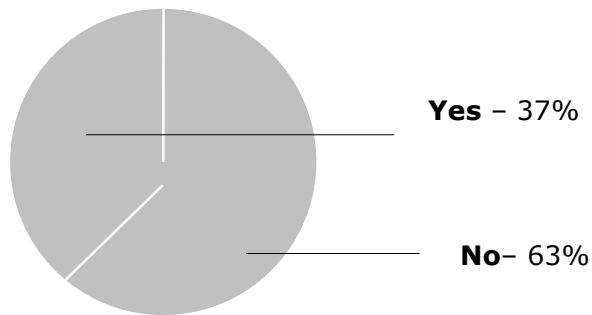
The greatest response was amongst product design consultants.

2. Has your nominated discipline designed anything for the purpose of crime



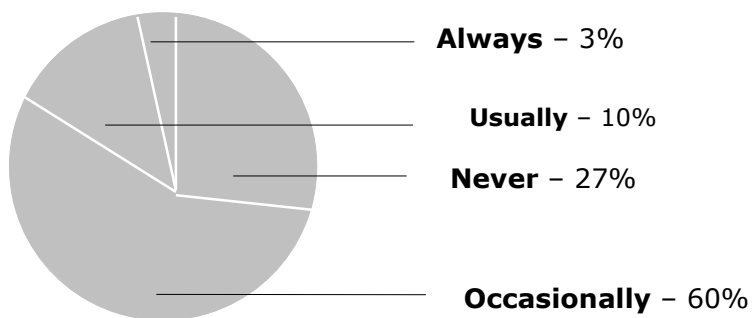
Clearly the majority of the respondents had never designed anything for the purpose of crime resistance.

3. Does your nominated discipline ever regularly design anything with specific crime?



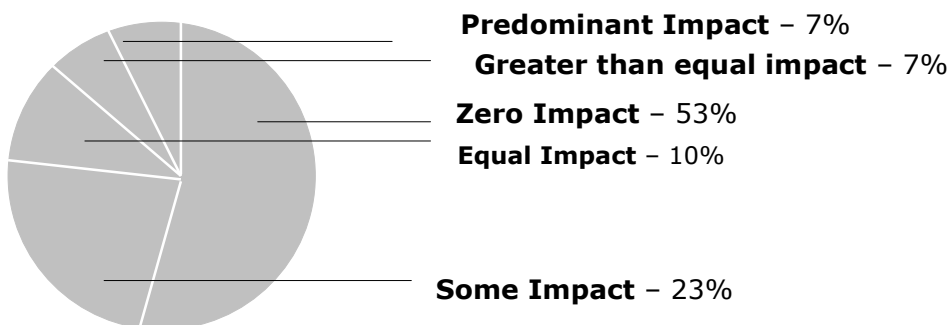
Again the majority of respondents never regularly consider features for crime reduction.

4. In general, do clients ever specifically request that crime reduction features be incorporated into designs?



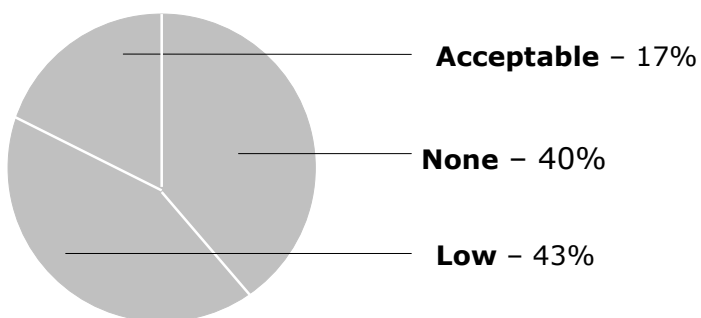
Only 3% of respondents reported clients always specify crime reduction as a feature although the majority suggested that occasional clients request crime reduction features

5. To what level does crime reduction play a significant part of your normal design process?



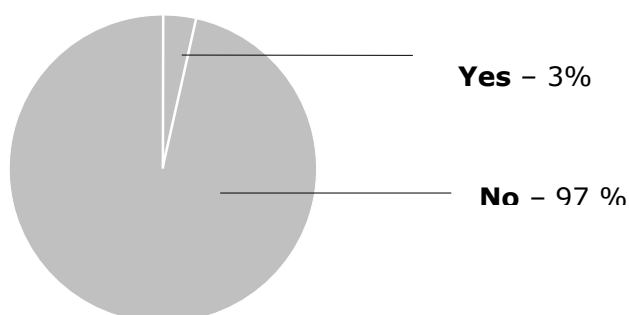
Although 53% suggest that crime reduction has zero impact on their normal design process it is interesting that 47% has some or more impact.

6. What level of 'design against crime' awareness do you perceive in recent graduates?



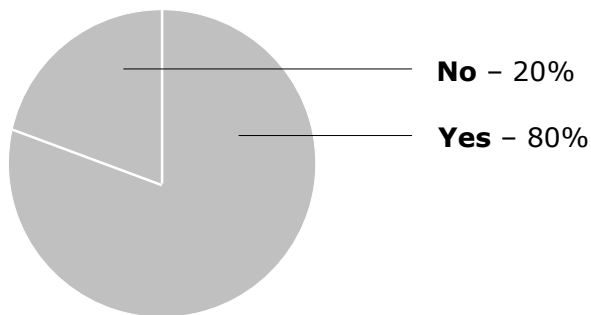
The respondents in general reported low or now awareness of crime amongst recent graduates.

7. Can you recall any articles or publications (within the last twelve months) that have addressed the issue of crime and design?



Most of the respondents could not recall having read anything which addressed issues of crime and design

8. Is your company a member of a professional body?



8a. If so, which:

- Design Business Association - 40%
- Chartered Society of Designers - 33%
- British Design Initiative - 12%
- British Design & Art Direction - 5%
- Institute Of Directors - 2%
- Others - 6%

In order to identify how design against crime could be brought to the attention of the profession the survey established which professional bodies the respondents were most likely to be members of. This revealed that the Design Business Association and the Chartered Society of Designers has the greatest membership.

4.2.2 Summary of Results

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 which may 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.

As well as limited recognition in the design industry, there also seems to be a low awareness of design against crime in graduates with 83% of consultancies stating that they perceived recent graduates had little or no awareness of this issue.


The results of this survey highlight a need for the promotion of this issue within the design community. Professional bodies such as the Chartered Society of Designers (CSD) and the Design and Business Association (DBA) could provide a valuable mechanism in raising awareness as 80% of respondents stated that they were members of such organisations. (See chapter 2 of this section, which provides a comprehensive overview of the varying remits of these organisations).

4.3 Product Design

4.3.1 Introduction

In response to crime, the focus for product designers has traditionally been in the creation of security products, developed in relation to the original product failure in crime prevention/resistance terms, such as steering locks on cars. However most product design sectors and products are susceptible to crime as indicated in table 4.1.

Table 4.1 – Product design areas, products and their vulnerability to crime.

 Interior	Product Design	Product Examples	Crime Consideration Factor	Crime Issues
			(* = Low *****=High)	
	Personal Products	Mobile phones, PDA's, Personal music player	* * *	Theft
	Consumer Products	Stereos, Videos, Televisions, Game Systems	* *	Theft
	Domestic Products	Microwave, Vacuum Cleaner	*	Theft
	Computer Equipment	P.C's, Printers, Zip Drive, Scanners	* * * *	Theft
		Laptop / Palmtop	* * * *	Theft
	DIY Products	Jigsaws, Drills, Sanders etc	*	Theft, Misuse
	Security Equipment	Smoke and Intruder Alarms	*	Tampering



Personal Products	Mobile phones, PDA's, Personal music player	* * *	Theft, Personal Safety
Computer Equipment	Laptop / Palmtop	* * * *	Theft, Personal Safety
Sports and Leisure Equipment	Trainers, Sports Bags.	*	Theft
Travel Products	Luggage: itcases/Brief cases	* * *	Theft
Medical Equipment	Inhalers, Syringes	*	Injury, Tampering, Contamination
Personal Safety Products	Attack Alarms	* * * *	Personal Safety
Lighting Design	Exterior Lighting	*	Vandalism
Furniture Design	Street Furniture (Bus Shelters, Seating, Bins)	* * *	Vandalism, Arson, Terrorism
Industrial Equipment	Machinery	* * * * *	Theft, Vandalism
Automotive	Cars, Buses and Transportation Vehicles	* * * *	Theft, Vandalism
Transport	Trains		Vandalism, Personal Safety

This study has revealed that very little design literature refers to crime related issues and the few references which do exist are focused on security related products e.g. the design of CCTV, or elements of crime reduction in automotive design. Therefore, there is relatively little available data for designers on crime, other than that available directly from the security products industry, which designers are unlikely to encounter on a regular basis. The Home Office 'Hot Products'³¹ report identifies products, which are most vulnerable to crime in terms of domestic burglary, retail theft and car crime. The Home Office Distribution Report³² suggests ways in which products can be identified to establish individual ownership of mass-produced objects through product marking, and the need for product designers to be aware of how products are misused for criminal activity.

In addition there is also a need for incentives to address crime prevention through design. An example of such an incentive is 'Sold Secure'. This is an independent body which offers attack testing to products and provides consultations on issues of security and product specifications. A manufacturer collaborating successfully with the organisation can display the 'Sold Secure' logo

³¹ Clarke, R. V. (1999). *Hot products: Understanding, anticipating and reducing demand for stolen goods*. London: Home Office, Policing and Reducing Crime Unit

³² Kock, E. Kemp, T. Rix, B. (1996). *Disrupting the distribution of stolen electrical goods*. London: Home Office, Police Research Group.

on its product packaging. This adds value to the product and gives reassurance to the consumer about the security of the product. However, knowledge of such incentives is not widespread.

The product designers interviewed during the course of this research accepted that crime did not currently receive a great deal of attention within the industry, but that it is an issue which should be addressed.

"I have to say that crime is never high on the list of priorities ... I just don't think it's important in designers minds. There are a lot of designers here and very rarely is it an issue, it's not part of their checklist. That doesn't mean that it shouldn't be."

John Daly, DCA

Designing products to reduce crime involves making legitimate use as straightforward as possible, and discouraging product misuse and abuse.

"If the products are intuitive and do what they're supposed to do easily, they will be used, and if they're not, then they won't. For crime, make it as hard as possible for the miscreant, easy as possible for the legitimate user."

Richard Seymour, Seymour Powell

While crime reduction was seen as an issue which was relevant to the product designer, it has to be recognised in the overall context within which a product will be used. Whilst the designer should consider potential product misuse and abuse within the design process, and design accordingly to reduce this, crime is not seen as an issue which can be resolved solely through design.

"... you can guarantee if there is a criminal mind or vandal determined to wreck [a product], they will wreck them whatever the product is."

Barry Jenkins, PSD Associates

"It doesn't matter what you come up with, someone will always come up with a way to get round it [or] find a way of utilising it in a criminal manner. Because people are very inventive. ... certain measures can be identified, and things done but then you introduce another component which also opens itself up to vulnerability."

Malcolm Garrett, AMX Studios

It is not surprising that crime resistance/prevention does not have a high profile amongst the product design profession. However the following case studies are illustrative of the good practice in this field that our research has uncovered.

4.3.2 Case Study: Adshel I+

4.3.2.1 Background

This case study examines the design of the Adshel I+ information terminal. This 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. PSD were appointed to design the Adshel I+ with these considerations in mind. Below we examine crime resistance generation from the point of view of a product designer and describe the design process identifying design decisions where crime related issues were considered.

PSD Associates were formed in 1988 and have developed a range of design competencies including packaging, environment, graphics, product and new media, producing new products, brands and services for clients across many industries worldwide. Barry Jenkins is the Design Director and has been involved in developing design policy, and liaising with major clients and manufacturers. He was interviewed about the Adshel project for this research.

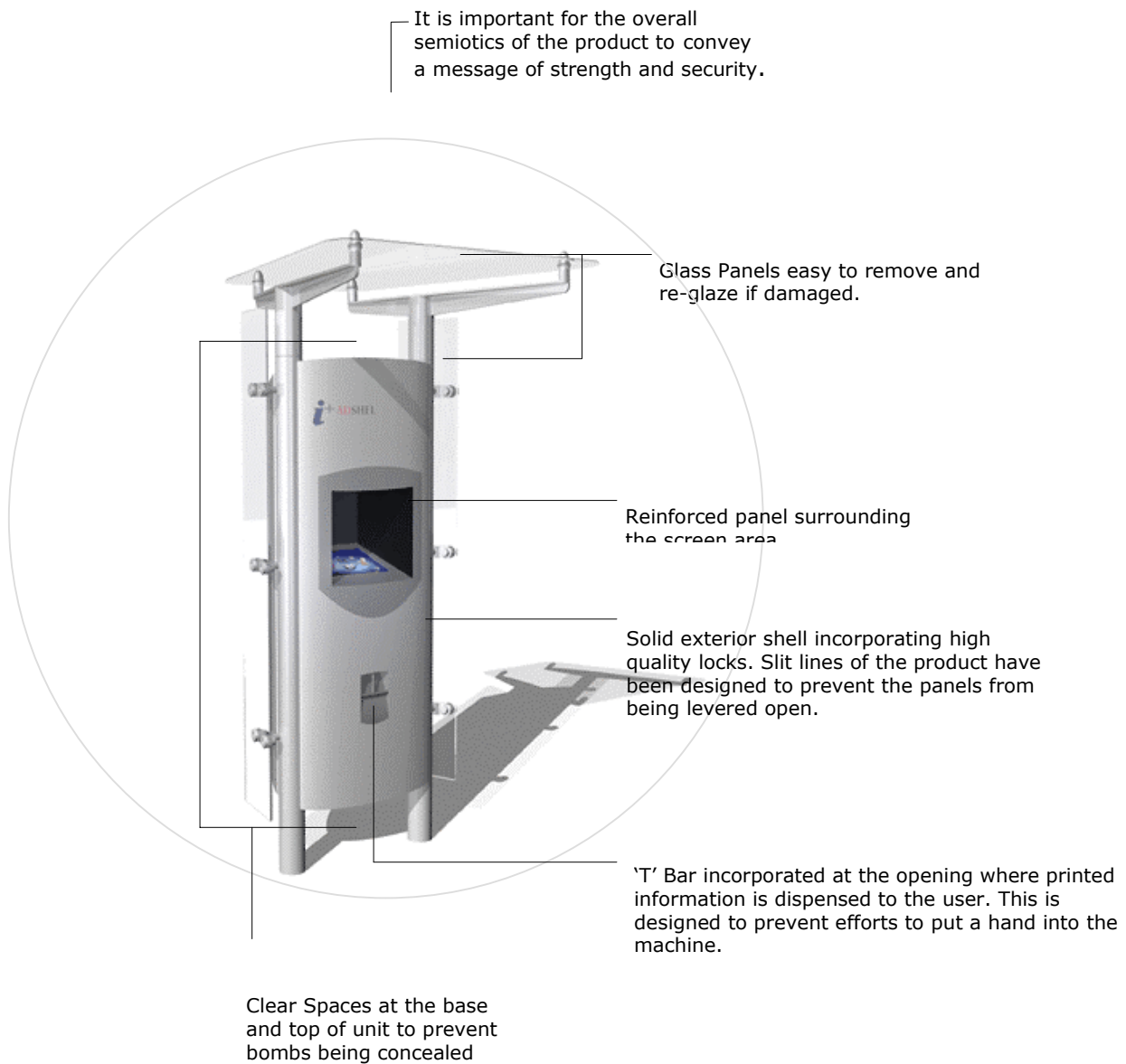
Adshel has been installing street furniture for many years considering itself to be the leading world brand in the market, operating over 3,000 street furniture agreements with municipalities in 20 countries. It designs and develops products addressing the problems of crime prevention and vandalism through both design and product maintenance. Barry Jenkins believed that this was a key factor in the design.

“It is not just down to designing something that will withstand reasonable abuse, if there is such a thing as reasonable abuse. But if it does get abused, must be repaired easily. You cannot make something that is going to be trashed regularly and be very difficult to repair. So if you know the glass is going to get broken, fit it in such a way that you can remove it and re-glaze it easily.”

Adshel, having a good understanding of material and manufacturing technology available, is able to actively design and manufacture against crime, thus reducing the risks presented by potential crime risks.

“the only way to deal with that is just to make a very, very, robust box. It had to be rogue resistant, ... weather resistant, water tight. We then had to find a way of ventilating. It was then going to get cold so there needed to be a heater inside. All of these things were needed to create an atmosphere inside that was comfortable for the machine. But it really just comes down to making a very strong box with good quality locks.”

Figure 2 - Focus on specific crime resistant aspects of the Adshel I+.



4.3.2.2 The Design Process for the I+

The design brief

The design brief was written jointly between PSD and Adshel over a period of two weeks. The essence of the brief was to redesign the existing I+ which was used in hotel foyers, so that it would be suitable for external use.

Design concept

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 relate to a bus shelter; and the effect of possible queue formation if people wanted to browse the internet for long periods.

Design details

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 was designed inside the shell to prevent it being prised open.

“If you really wanted to get into it you probably could. But it would take a lot of effort, and by that time someone will have noticed”.

The opening for dispensing the tickets, maps and receipts was designed to prevent it from becoming blocked and to deter users trying to access the inside of the machine.

“It’s kind of a labyrinth inside. The opening is restrictive so you can’t put your hand in. There is a long shoot so it falls down. But because it’s thermal imaging paper on a role, it has an inherent curl to it. So we ended up opening the fascia and putting a ‘t’ bar across like you get in banks and photo booths. So it is wide and open so if it drops in you can see it and retrieve it and pull it round the bar, but you can’t get your hand in there “.

Other considerations for the designers included taking the needs of wheelchair users into account, ensuring it would be at an accessible height, with minimum glare from the screen.

It was important for the overall semiotics of the product to convey a message of strength and security. The psychology of materials can play an important role in combating vandalism.

‘Much of the psychology of strength is that it looks like it’s strong. So you are going to get people who will break it because they just want to do it. However 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 ‘.

After the design development stage, a prototype was built to test product use, suitability of materials, and to allow monitoring of vandalism. During the trials it was not found to be subject to vandalism.

Barry believes this is partly due down to two issues. The first issue is related to the interaction between the user and the product and with potential vandals approaching the system, and then actually being interested in it and using it. The second is related to the purpose. Crime against vending machines is often related to frustration of the machine failing to deliver the product. Failure of the I+, essentially just providing information, would not invoke the same violent response.

Other related crime issues, such as fraudulent use of credit cards on the I+, are not regarded as being relevant design problems in this case.

After the success of the prototype trials, minor adjustments were made in the next stage of design and development. Following detailed design approval Adshel went into manufacturing. Adshel and their customers will continue to monitor crime resistance throughout the product life.

4.2.3 Case Study: the BT telephone kiosk

This case study again demonstrates how the redesign of the BT telephone kiosk has considered crime reduction as an integral part of the design brief, effectively contributing to a reduction in the incidence of vandalism.



The original Gilbert-Scott telephone kiosk used by BT is historically one of the most highly vandalised products. The level of vandalism against this product was widespread. It's cast iron construction and small panes of glass made the product a focus for vandalism to such an extent that during a survey in 1982³³ the researchers were unable to find an unvandalised kiosk.

As part of a £160 million modernisation programme in 1985, the design consultancy DCA were given the task of re-designing the public telephone kiosk. DCA were founded in 1958 and currently employ over 50 staff to undertake multi-discipline design and development projects in areas ranging from product styling, product development, packaging and graphic design to mechanical and electronic engineering, ergonomics and model making for a comprehensive list of major companies. John Daly, the Design Director, was interviewed about the project.

The client approached DCA with a list of issues resulting from their own research into the Gilbert-Scott design. Along with these weaknesses DCA formed their own views and began to address these shortcomings during the concept development phase.

"A lot of the design features on [the new] kiosk are the result of considering the crime implications, the crime shortcomings of the Gilbert-Scott kiosk."

DCA believed that the Gilbert-Scott kiosks should be replaced by more open designs to deter undesirable behaviour by making people within the box more observable. To increase the visibility further, 24-hour lighting was to be installed in the kiosk. The designers had identified a shift in the use of the public telephone. Historically, the public phone was the only means of

³³ Barker, M., Bridgeman, C. (1994). *Preventing Vandalism: what works* London: Home Office Police Department

communication by people who could not afford a phone in the home. Call times were often lengthy, resulting in the need for a more enclosed box to protect the user from the elements. As telephone prices fell and more and more people had a telephone in the home, the use of public telephones shifted to more infrequent, shorter calls. This shift allowed the designers at DCA to open the bottom of the kiosk to allow for ventilation and to make the kiosks less likely to collect litter and rubbish, attempting to give public telephones a cleaner, brighter image.

“Now we have something that is predominantly made of stainless steel, and large panes of glass. The glass section doesn’t go down to the floor therefore it is not very attractive to sleep in anymore.”

To combat the perennial problem of broken glass, research was undertaken into the psychology and perceptions of the material. Evidence from other areas such as department stores suggested that large panes of glass rarely get vandalised. The use of larger toughened panes of glass allowed an increase in visibility of the interior of the kiosk, and discouraged vandalism.

“What’s amazing about that is that if you have got a small pane of glass, then a vandal doesn’t mind putting his boot through it because it is unlikely to hurt their foot, and unlikely to make a lot of noise. But to actually break a panel, which is a large pane of glass, it takes a lot more dare. Therefore the instances of breakages are much more less.”

DCA focused attention on the overall strength of the kiosk, and on particular individual features, with the selection of materials being an important consideration throughout the design process, as explained by John Daly:

“...materials and construction has to be considered right at the beginning. There is no point in just drawing a pretty picture without having some understanding of how the products made or what material to use.”

After the initial concept stage, the designer and client identified several concepts that were individually assessed. The environment was a very important factor in evaluating the concepts, and the designers had to create a design that would work in both rural and city environments, and be able to withstand a weather conditions such as high winds, snow, rain and sunlight. Other social aspects requiring thought were the needs of wheelchair users, the elderly and the very young. Another important aspect for the designers was to consider modularity. There are a range of kiosks from booths to square and triangular kiosks, and kiosks that nest together, some free standing and some wall mounted. The units were designed to be installed in the minimum time possible to reduce installation costs.

On selection of the most appropriate concept, DCA developed full size models and undertook user testing through focus groups, involved the client in these stages. On completion of successful user tests, the team moved into detail design in conjunction with manufacturing and then into full manufacture.

4.2.4 Key points

These case studies identify that the designer can apply good practice design principles to overcome issue of crime. As well as installing physical barriers to crime, the designer can analyse the psychological issues of product abuse and design in psychological barriers to prevent that product being subjected to such abuse. Both case studies also illustrate, that crime is just one of a number of issues the designer must address, resulting in design 'trade offs'. The issues raised by these cases are summarised below:

- The designer must relate crime prevention to the total product environment and developing trends within society.
- A well-trained designer should be incorporating crime issue as basic common sense.
- Products must be designed as 'fit for purpose'. To fulfil commercial and manufacturing briefs, there will always be a trade-off.
- The designer can act as an integrator and visualiser, integrating stakeholder needs and requirements.
- Designers need to build up awareness in crime reduction through experience and/or training.
- Designers can be the catalysts in informing manufacturers about the types of issues influencing product design, including crime
- As well as implementing physical barriers into a designer to prevent crime can analyse the psychology of product abuse and 'design in' psychological barriers to deter the criminal.
- There are often 'tradeoffs' between design for use and design against crime.

4.3 Automotive Design

4.3.1 Introduction

The car has perhaps received more attention than any other product with regard to crime. In some areas, government legislation has forced design changes, such as the 1983 regulation to introduce steering column locks. Although manufacturers have implemented security features such as central locking and engine immobilisers into car designs, there remain problem areas for design to consider. These include issues such as the use of glass and electro-magnetic interference between different cars systems.

Despite the focus that has been placed on security in motor vehicles, crime is still a major crime area, both in terms of numbers and perception. In 1997 there were 710,000 cases of theft from vehicles and 407,000 thefts of vehicles³⁴. Home Office literature has addressed issues relating to cars incorporating security as an integral element of the design, rather than relying on retro fit security products. This includes utilising features such as immobilisers, toughened glass (or films laminated over glass which allows the glass be pushed out, but not in), car alarms and the use of tracking systems, which are often now incorporated into executive cars.

Vehicle design is an evolutionary process, with designs not changing radically from one model to the next. This has allowed the automotive industry to structure its design to manufacturing

34 Foxall, J. (1999). "How secure is your car?" *Auto Express Security Special* (543): 45-74

process in a very compartmentalised and sequential manner, with a large number of specialist inputs involved. In terms of the industrial design process, automotive design more than any other product area has become highly specialised and focused. The industrial designer has less interaction with their engineering counterparts than in any other product area, and specialises in the appearance and identity of the product. This work is mainly undertaken by in-house design centres. Ford Motor Company, for example, has 13 design centres around the world dedicated to vehicle design and engineering. Automotive design is also undertaken by some design consultancies, which work either for manufacturers of the vehicle component supply industry.

Below we report on the perspectives of three individuals representing different elements of the automotive design process:

- Terry Beadman is the Certification and Inspection Manager of the industry-wide body MIRA. He is a specialist in the development of vehicle security in the UK over the last ten years, providing a detailed background to this issue and the problems facing the automotive designer.
- Neil Bates is a Partner of Creative Design Consultants. One of their long-term clients is Pilkington Glass, for whom the consultancy has just completed an automotive glassing project.
- John Daly is the Design Director of DCA Design Consultants, which is recognised as one of the country's leading consultancies specialising in a broad range of product areas. DCA is currently working for the automotive industry on a number of projects.

4.3.2 An industry perspective

Terry Beadman has worked in for Motor Industries Research Association (MIRA) since 1990. He is a member of the British Standard Committee relating to vehicle security, has various commitments to other working groups such as the Society for Motor Manufacturers and Traders, and has authored various papers and publications on vehicle security.

MIRA's key function in the industry is to provide certification and inspection services. In Beadman's view, interest in security within the industry has diminished over the last few years and can be viewed as 'yesterday's news'. During the early 90's the industry concentrated much effort into designing out car crime. At the same time the industry worked with European governments to create legislation and tried to ensure that products met their requirements. Often this was viewed negatively from the design perspective. According to Beadman:

'When they were first told of the new requirements the designers' reaction was that it is impossible to design and manufacture electronics to meet them'.

The designer has to consider vehicle safety when designing all aspects of the product. This presents one of the largest trade-offs for the Automotive Designer.

'.....It is no use making a car so secure that the day it is in an accident the occupant is burnt to death. Because nobody would be able to open the doors or break the glass to get them out. So the vehicle engineer has to compromise to some extent'.

As well as occupant safety the designer also has to consider Pedestrian safety:

“If the bonnet was strengthened in such a way it couldn't easily be opened from the front it could mean that it is strengthen it in such a way that if that car were hit a pedestrian they are killed”.

Beadman considers that there is a limit in what the designer can do in terms of designing against crime. The designer has to design for the demands of the market and therefore will include the features identified by market research and to a level of security acceptable to the market.

While today's cars are designed to a high level of security, Beadman suggests that the use of glass is a possible weak link in the overall level of security. There is also need to have secured storage in the interior, i.e. the glove box, to temporarily store items out of sight. In effect the use of these two materials glass and plastic make the car relatively insecure due to the material qualities. There are legal requirements on the passenger interior, which prevents the use of more robust materials. Legal requirements govern protrusions, sharpness and hardness of surfaces, which a passenger might hit if the car was in a collision. So a glove box which is immune to attack from a jemmy bar may not be legal, and unbreakable glass is unsafe.

These examples highlight the trade-offs between commercial pressure and vehicle safety that the designer is faced with where security is concerned. The vehicle legislation framework that governs the automotive industry has over 100 directives that must be considered by the designer. Vehicle security only covers one of these directives.

4.3.3 Designing for the component supplier

Given that glass is perhaps the weakest link in the chain, in terms of vehicle security, we now examine how Pilkington Glass and the Creative Design consultancy approached crime prevention through promoting crime resistant glass usage. In this case it is brand design, rather than product design, that is our key concern.

Pilkington is the largest glass manufacturer in the world, providing the glassing for 25% of the world's cars and with extensive experience in the problems faced by the use of glass within the automotive industry. The company has developed a glassing technology called 'intruder resistance glass' that can provide resistance for a minimum of 30 seconds of sustained attack. This product has been developed in collaboration with major motor manufacturers in Europe with contributions from representatives of the U.K Police Service, the AA and other security organisations.

The brief given to Creative was to find a mechanism for Pilkington to market this product through branding, and promotion of the glass as a valuable development for the automotive industry in addressing the issue of intruder resistance. Creative established that there were two issues involved: security, and product safety and enhancement.

Creative began the project by commissioning independent research using focus groups to identify customer responses to car crime. The design team assisted in the focus groups but did not make any direct contribution. Pilkington also sat in on this research and was provided with the complete research findings. The research developed three main broad areas of security:

- The safety of the driver and passengers.
- The security of the vehicle contents.
- The security of the vehicle itself against theft.

Most participants were less concerned with their own personal safety whilst driving, and more concerned with the security of the vehicle and its contents. There was a consensus amongst the focus group participants that the new glass should have a branding to promote high public awareness. It was felt that branding was very important and that the designers had to create a distinctive brand that conveyed a message to the criminal saying that ‘it just isn’t worth the effort on this car’.

During the development of the brand image, the design team used methods such as metaphors to identify a symbol that would be appropriate. This raised many issues in terms of size, colour, shape, etc. Something that worked very well on a White Toyota would not necessarily work on a Silver S Class Mercedes. Clearly the design team had to identify a solution that would be accepted globally and across varying cultures. Another important aspect was that the branding should be visible in different light conditions, so fluorescent and reflective materials were suggested.

Market research was undertaken to identify responses to the symbols, letters and colours presented in the design concepts together with preferred positioning and size. The focus group participants felt that it should be placed on all the windows and close to the door handles and should be approximately 13mm in diameter. The metaphor needed to be protective in nature and non-aggressive. This work is continuing with further design and brand testing both with the automotive consumers and manufacturers.

At present this glass product is used in both the BMW 7 Series and the Mercedes S Class Vehicles. Neil Bates believes that in time this product will migrate down from these high-end vehicles to be included as standard in most vehicles. According to Bates, the Police see the benefits of this product, and is in agreement with both Creactive and Pilkington that this product should be fitted as standard.

This role of a design team in this case was not the design of the vehicle but rather to utilise their broad knowledge of user issues combined with an effective knowledge of design to market an emerging technology and translate into a tool to combat automotive crime.

4.3.4 Design for manufacturers



DCA Design Consultancy has worked extensively in the automotive sector on a broad range of projects for companies such as Jaguar, Rolls Royce, Rover and Volvo, concentrating mainly on interior detailing and accessories. As Design Director John Daily explains:

“We are not an automotive styling team. In fact most automotive projects are in house anyway. The manufacturers are coming to consultants to look at specific areas.”

There is often a variation in the brief given to DCA. In some projects the designers are presented with a very detailed design brief where the client has undertaken all the research and all the marketing. This results in a brief which is so specific that it becomes a very targeted project. For example to design a storage container or storage box made out of a particular set of materials, which is designed to be stored in the boot of a car. The manufacturer in such circumstances may have manufacturing facilities whether it is vacuum forming or injection moulding and therefore would specify the exact materials. Also the range of cars would be identified which the product would be suitable for.

Other briefs may be much broader, such as one that DCA is currently working on is for a manufacturer. The brief is based around a scenario of a family with small children who can only afford a small car with little room for luggage. The consultancy's job is to work on storage concepts to be fitted to the exterior of the car. As Daily explains:

'With such a starting point.. the conceptual thinking is so broad that worrying about theft and crime really doesn't come into it. That would only come into it the project once a concept has been identified and you are getting into the detail of the product... The ideas are still very much at a conceptual level but I have to say that crime hasn't been on the list of considerations as yet... Crime is never high on the list of priorities. However I think that that may just be a reflection of the kind of project we have been working on'.

Once a concept has been identified the design team will begin a more detailed consideration of issues such as choice of materials, suitability of manufacturing processes, selection of mechanical fixings, how it will be stored when it is not being used, etc. In Daily's view, crime issues are considered at this point in the design process:

"Well I think that the number one consideration is preventing the theft of the storage container from the vehicle at any time - whether it is being snatched from the vehicle when it is sat at traffic lights or whether it is overnight in a car park. You don't want people to steal the product but secondly you don't want people to steal whatever is within it. They are two key issues that have to be considered".

In this project Daily believes the client is aware of the crime issue, but he does not believe it is a high priority to them. He feels that a product which is novel, having unique selling points is the major issue to the client:

'I don't think crime is an issue at the point of sale. It's an issue once the guy has bought it. Yeah if they have been stung once before then they will be very aware of it but I think it is a low priority for most people at the point of purchase. The same as a mobile phone; I suspect that people don't spend much time when they are buying a phone to check what security features they have got. They are bought on design. That is what the fashion statement is'.

This example of DCA design work in the automotive sector illustrates the different parameters the designers have to work within. John Daily identifies that although crime is a consideration, it is not a high priority in the mind of the designer, the client and the customer during the design to market process of automotive accessories or interiors.

4.3.4 Key issues

- Design teams are faced with a series of trade-offs in terms of security. The issue of safety combined with commercial pressures can often limit the effectiveness of security measures.
- Designers can use their knowledge to access user opinion and identify how they can design to solve unique consumer needs with regard to crime.
- The use of design can elevate public perception and awareness of automotive security products, and the issue of security itself.

- Designers perceive that the issue of security is not a high priority in the mind of the consumer, comparison with function and product styling.

4.4 Packaging Design

4.4.1 Introduction

There are numerous examples within packaging design which to a certain extent, already incorporated security features into the design. Packaging design is often, rightly or wrongly, considered to be a subset of graphic design. In this case it is considered as a discipline in its own right. Graphic design does have a key role in crime reduction, in particular to communicate messages of awareness of crime reduction. Recent examples of this include posters raising awareness about the dangers of vandalism and trespassing on railway lines³⁵ or signage warning of property being protected by a certain security system.³⁶ For packaging design crime reduction takes the form of technical features which, in the majority of cases, have resulted from retrospective modifications of previous designs on products which have encountered security related problems. For the purposes of this research project, packaging design has been the focus, and interviews have been conducted with packaging designers, packaging technologists and manufacturers, and brand owners. Trade press articles and company information brochures have provided additional material.

Within the packaging industry, steps have already been taken to overcome crime problems relating to packaged goods, namely in retail crime, protection from tampering of products and counterfeiting. Numerous articles relating to tamper evident packaging methods and product tagging have been covered in the packaging trade press over recent years, and this appears to have become a standard requirement for many packaged goods manufacturers, to ensure product integrity and promote customer confidence in brands. The likelihood of being included in the design brief for fast moving consumer goods (fmcg) packaging, in particular food packaging, has increased significantly over recent years.

Counterfeiting is a major problem amongst many premium brand goods, and whilst the client may want security features to be included into the packaging, it is rarely specified explicitly within the design brief. Professional bodies within the industry include the Institute of Packaging and Pira, a research association specialising in technical aspects of packaging, paper and print. Both of these organisations have expressed interest in counterfeiting and brand protection, making security the focus of recent and forthcoming conferences.

The packaging industry has recognised the importance of introducing crime reduction features into packaging, and this is addressed regularly within the packaging trade press. Most packaging design consultancies will receive the main packaging magazines, and therefore would have the opportunity to see articles relating to security, although it would appear that this has had little impact on their work.

³⁵ Design Week. (2000) "HSE to stay off the rails." *Design Week*, 15(4) 5 Feb.

³⁶ Rook, D.W. (1987). *Modern hex signs and symbols of security. Marketing and semiotics: new directions in the study of signs for sale*. Mouton de Gruyter

4.4.2 Crime Issues

In the case of packaging, the crime issues which can be affected include theft, including both shoplifting and pilfering, product tampering and contamination for extortion, and counterfeiting. For graphic design, while there is the opportunity for raising awareness of crime reduction issues, there are also issues relating to vandalism.

Theft of packaged products from retail outlets can be reduced through a number of packaging design considerations. The inclusion of electronic tags within packaging allows product tracking throughout the distribution chain, and when activated, alerts store staff to shoplifting attempts. Shoplifting attempts can also be hampered through designing large packs for small products, making them more difficult to conceal.

Product contamination and product tampering, described as "a major social problem of our time"³⁷ became a significant issue following the Tylenol incident in 1982 in which 7 people died following the deliberate contamination of the pharmaceutical product with cyanide.³⁸ This led to the widespread introduction of tamper evident packaging for pharmaceutical and food products. Use of tamper evident packaging also increased following glass contamination of baby foods in the UK in the late 1980's, with the manufacturers developing quick design solutions which they could add to their packaging without having to redesign the complete product. As the use of tamper evident packaging has become more widespread, it has become an integral part of the packaging in many cases.

Fraud and counterfeiting are major world wide problems with a global market value of \$250 billion³⁹, covering a wide variety of industries, in addition to government related documents. It is recognised as one of the fastest growing areas of crime. Many technologies have been developed to overcome problems of counterfeiting and fraud, and this is an area in which the effect use of the technology through design could help reduce the incidence of counterfeiting.

Products which are commonly affected by counterfeiting include auto parts, aircraft parts, baby formula, clothing, cosmetics, consumer drugs & medicine, software, food products. This has public health and safety implications - examples have been given of deaths caused by counterfeit brake linings in cars⁴⁰; fake medicines (cough medicines diluted with industrial solvents, outdated drugs repackaged, with the risk of inert or imperfect drugs being more common than poisoning - the World Health Organisation estimates that 10% of the world's supply of branded medicines are counterfeit⁴¹); and spirits (£7 billion lost annually in the distilling industry through counterfeit spirits⁴²). To counteract this, brand authentication can be achieved through techniques such as holograms, source tagging and 2- and 3-D symbology, which are increasingly being incorporated into packaging.

4.4.3 Awareness

³⁷ Abbott, R. (1996). "Foiling the Villain." *Packaging Today*. 18(3): 22-24.

³⁸ Erlichman, J. (1989). "Product tampering began with seven cyanide deaths." *The Guardian* 27 Apr: 4.

³⁹ Gormally, R. (1997). The Twilight Zone. *Packaging Today*. 19(7): 22-26.

⁴⁰ <http://www.lpconline.com>

⁴¹ Product & Image Security Newsletter (1998) "Counterfeit medicines cause concern in the UK." *Product & Image Security Newsletter* no 26 Sept: 5.

⁴² *Packaging Today* (1998) "A marriage ends in a secure label." *Packaging Today*. 20(9): 25.

Despite the activity in this area by the packaging industry in general, the interest in security through packaging does not appear to have reached packaging designers as yet. This is the opinion of both the designers themselves, and of packaging manufacturers. The suggestion of incorporating design against crime, although generating much interest, did not appear to be immediately relevant to one packaging designer.

“It’s interesting, design and crime [but] the two areas don’t really marry up very easily.”

The designer did not consider crime reduction to be a design problem as such – it was thought that manufacturers or retailers should bear the responsibility.

“... manufacturers who use packaging are probably more interested in shifting the stuff off the shelf. [Crime] is not perceived as their problem, they just want to sell into the operation. The crime element is further down the scale. It’s geared up to what the shop keepers want.”

Packaging manufacturers commented of designers with whom they had worked showed very little awareness and understanding of crime or the technology available to reduce it. This was demonstrated in two areas. Holograms are being used more frequently as a method of demonstrating brand authentication, and it was noted that there was a marked difference working with those using holograms primarily for security, and those using them for pack decoration. According to Astrid Mitchell, the Marketing Director at Applied Holographics, most designers “have no awareness of holographics for security [and] don’t understand the technology.”⁴³

Packaging designers tend to be reactive to their clients requirements, rather than proactive, when it comes to incorporating security features into packaging. This was reiterated by the Sales Director of Decorative Sleeves, which is developing shrink sleeves that incorporate security features. He was asked about his experience in working with designers, and the extent of their knowledge about crime and which security features are available within packaging.

“They know nothing about it. Very rarely does a designer actually identify it as an issue that they should be concerned or worried about. They would certainly never say to the customer this might be of benefit, or we know we can incorporate this. Designers are unaware that there is a problem. Designers design something for the aesthetic appearance predominantly, and functionality of the product, and not to avoid it being copied or counterfeited in the future, or put to illegal use.”

Jon Cowan, Sales Director, Decorative Sleeves

Designing in crime resistant features should be seen as adding value to a product, and something that the designer should be able to offer to a client.

“If the designer understands what’s available, I’m sure the customer would be delighted if they said for example if you say if you incorporate this design feature and this design feature, and use the EAS strip for instance which is an integral part of the package, just it’s hidden inside the sleeve, and you add design benefit to it. I’m sure the customer will go for it in a big way.”

Jon Cowan, Sales Director, Decorative Sleeves

“It’s a case of making it an attractive part of the pack or scheme it in somehow to give it a branding benefit”

⁴³ Interview with Astrid Mitchell 8-11-99

4.4.4 Design Against Crime

There are various techniques and technologies which can be introduced into packaging design to help reduce the crime associated with packaged products.

Almost without exception, the packaging designers questioned initially about their awareness and contribution to design against crime said that it was not relevant to their work, and that most had never come across anything relating to this. When questioned further about the categories mentioned, there was the overall reaction that these were “obvious” and not really to do with designing out crime. However, numerous examples were given where packaging design has played a part in reducing crime.

4.4.4.1 Tamper Evident Packaging

Designing packaging to include tamper evidence is a form of target hardening - making the target of crime less accessible, and providing easier detection that a crime has taken place. The aim of tamper evident packaging is to deter theft, to pinpoint where any theft or tampering has occurred and to ensure customers of the product integrity.⁴⁴

Numerous technologies are available to the packaging designer to incorporate into their designs, depending on the level of security required.⁴⁵ Many have become standard for particular products, and others are inherently tamper evident, such as ring pulls on beverage cans and crown closures on bottles. It is seen as an area being led by technology rather than design, with one article stating that, “the war against tampering of packaged goods, whether friendly or aggressive has still to be won, but leading edge technology is playing a major role in solving the problem.”⁴⁶

Tamper evidence in packs does not always discourage people who are determined to find a way of beating the security features.

“Some people do take it as a challenge if you bring out a tamper evident non-fillable closure for bottles. People work hard to try and penetrate it to show you that it doesn't work.”

Susan Ward-Geddes, Director of Risk Management, UDV

Many of the crime reduction features which can be incorporated into packaging tend not to be specified in the initial design brief⁴⁷. In the case of tamper evident packaging, a brief may specify that packaging is to be tamper evident, but not indicate which form to use. According to Barry Jones, Principal of The Packaging Development Company, the main influence for this decision, if

⁴⁴ *Tamper Evident Packaging* (<http://www.tamperevident.com>)

⁴⁵ *Packaging Today* (1998). “A marriage ends in a secure label”. *Packaging Today*. 20(9): 25.

⁴⁶ Abbott, R. (1996). “Foiling the Villain.” *Packaging Today*. 18(3): 22-24.

⁴⁷ Interview with Barry Jones, Chairman, Packaging Solutions Advice Group. 19-10-99

left to the designer, is "... aesthetics, how it looks. One of the important things is that the tamper evident feature mustn't look really horrible and nasty, really stick out and detract from the design."

In the view of Sean Fortune, head of structural design at Siebert Head, tamper evidence is considered as an issue for the technologists rather than the designer.

"People tend to see the application of tamper evident features as a mandatory requirement. This is then applied as part of the packaging process or technology solution in isolation of the brand proposition. They should be looking at the application of any tamper evident feature as an opportunity to enhance the brand proposition, creating a greater differentiation and a stronger three dimensional brand essence. They should communicate not only the brand's point of difference visually but also through the consumers interaction with the pack." ⁴⁸

4.4.4.2 Electronic Article Surveillance

A number of different technologies allowing electronic article surveillance, or product tagging, have been adopted by different retail sectors to reduce theft from retail outlets.⁴⁹ The retail trade spends £450m per year on security devices, including security staff, anti theft equipment and cash collection.⁵⁰ Crime reduction through product tagging is currently considered to be the responsibility of the retail industry with the electronic tags generally being applied within the retail environment. Source tagging, applying the tag within the product or packaging manufacturing process is not being addressed to any great extent by designers, packaging manufacturers or brand owners at the moment, although it is recognised that there may be some benefits in acting on this. The British Retail Consortium has defined one of its goals in reducing retail crime to be the widespread adoption of source tagging by suppliers.⁵¹ Some forms of product tagging can be incorporated into labels directly by the packaging manufacturer, within labels or shrink sleeves.⁵² This would overcome the problems of detracting from the design of the branded product.

"... to be quite honest having seen the way they apply the tags in store, I think that we should get in there. We go to all this trouble of designing this premium brand and this nicely packaged product and they stick this great big white label on, so I think there is some merit in us getting involved."

Susan Ward-Geddes, Director of Risk Management, UDV

There are problems associated with getting involved in this as there are a number of different EAS systems in use and incorporating one technology into their packaging design will not meet the needs of all their customers. Technical problems also remain to be solved.

⁴⁸ Rea, D. (2000). "Earn the seal of approval." *Packaging Today*, 22(1): 28-32; Rea, D. (2000). "A Global Problem: parallel trading - is there a price to pay?" *Packaging Today*, 22(1): 5.

⁴⁹ Edwards, A.-M. (1997). "To catch a thief." *Packaging Today*. 19(11): 36-38.

⁵⁰ MacDonald, G. (1998). "The soft target? Criminals seek opportunity." *Retail Week*: 15-16.

⁵¹ British Retail Consortium (1999). *Retail Crime Survey 1998* March: 19

⁵² Porter, J. and Clements, A. (1998). "Prevention at source." *Retail Week* 15 May: 16-17.

“One of the problems is getting the retailers to agree on the tagging. There are so many different types of systems available now. It’s just like bar coding all those years ago. And it’s also being able to apply them on our high speed lines.”

Susan Ward-Geddes, Director of Risk Management, UDV

As packaging technology develops, incorporating tagging into packaging will become another design issue, although it is rarely addressed at present.

4.4.4.3 Packaging for small goods

Another area of crime reduction which has been addressed by packaging design is the theft of small goods. Due to their size, small retail goods can be easily concealed and removed undetected. This has been overcome to some extent through the use of large blister packs, for example, to which the products are attached and are difficult to remove, therefore reducing the opportunity to conceal the product. The use of large header cards, behind blister packs, also provides a larger area for graphic design, providing more opportunity for product promotion.

The use of large packaging to help reduce theft has been adopted for a number of years. Richard Seymour described a packaging project he was involved in during the mid 1980’s, as an example of how he saw crime being an issue which design could influence.

“One of the first things that Seymour Powell ever designed was packaging for a torch ... the brief had many different challenging requirements, but they wanted to make something that would be more difficult for someone to pocket the thing. It was an injection moulded piece of packaging, with a graphics area at the top, which you needed to know the trick of removing, before you could remove the torch. So the casual untrained person would not be able to pocket this object, because he wouldn’t be able to remove the packaging, it was an inconvenient shape to pocket, and it wouldn’t be easy to conceal. That was a very, very interesting project. It was made from the scrap plastic from the torch, so effectively the packaging was free. Very clever. Most of all, that [the crime issue] formed part of the brief.”

Richard Seymour, Seymour Powell

4.4.4.4 Anti-fraud and anti-counterfeiting measures

Counterfeiting of products, while presenting major problems for product manufacturers, is a crime which the police do not act upon as a priority, and the penalties for being caught are relatively lenient. Design is seen as providing the answer.

“The police are saying counterfeiting is business crime, and business crime doesn’t really interest them in the same way. So we’ve got to really go back to designing out the opportunity to do this.”

Mike Schuck, Assistant Director, Retail Crime, British Retail Consortium

However, manufacturers may be unwilling to specify crime resistant features within their products or packaging, as this is tantamount to admitting that they are experiencing problems. One packaging manufacturer described the situation in the pharmaceutical industry, saying, “pharmaceutical companies will be the last to use holograms to prevent counterfeiting, as this would in effect be admitting they have a problem with it.” On occasions where packaging design has incorporated anti counterfeiting features, the main incentive was seen as being “to protect profits rather than due to any concern for the users.”

There may be little point in designing in features which are difficult to counterfeit if the consumer is unaware of what these features are. This presents the dilemma of how to promote security features without admitting that there is a problem.

“... if the customer’s not aware of the security features then it’s not much use. The education of the consumer is quite crucial, because if the consumer doesn’t know what to look for, if he doesn’t know that Smirnoff has a coat of arms embossed in the glass, it should have a long cap, what hope is there? So for security there are some very expensive remedies. ...[But] a lot of the time you don’t want to educate the consumer about counterfeiting. It undermines the brand. ... So you’re left with these dilemmas sometimes.”

Ross Aylott, Business Protection Support Manager, UDV

4.4.5 Case Study – Smirnoff Vodka

To illustrate how one aspect of packaging design being used to reduce crime, the case of Smirnoff Vodka is considered. The case demonstrates how the problem counterfeiting and product tampering has been addressed through design.

United Distillers and Vintners (UDV) was formed in December 1997 through the merger of United Distillers and International Distillers and Vintners, and is one of the world’s largest spirits and wines company. It owns 19 of the world’s top 100 premium spirits brands,⁵³ with the brand portfolio including Smirnoff, Johnnie Walker, Gordon’s and Bell’s. In common with other brand owners, one of the problems faced by the company is that of product counterfeiting, a major problem throughout the world.

Different markets present different counterfeiting issues and secure packaging design can provide the route for brand owners to overcome the problem. Many of the security features now designed into spirit bottles have resulted from years of incremental changes to the original designs as problems in specific markets have become apparent. These include features such as embossed glass, full colour printing, the use of gold blocking, and incorporating anti refill features into the tops of bottles.

One market which faced a particularly high incidence of counterfeiting was vodka in Russia and the Ukraine. The sale of counterfeit vodka results in the deaths of 40 000 people each year through poisoning.⁵⁴ The problem was explained.

⁵³ Diageo plc web site http://www.diageo.com/m_udv.htm

⁵⁴ Rea, D. (1998). “Life Savers.” *Packaging Today*, 20(6): 7

“In Russia, the counterfeit vodka market is enormous, and they will take any bottle of anything, and pour spirit in and sell it as vodka ... some of the things that come through are truly poisonous. So the branding people have been working to stop the counterfeiters producing forged products.”

Jon Cowan, Sales Director, Decorative Sleeves

At UDV, the Smirnoff brand owners accepted the problem in the Ukraine warranted particular attention, and reassessed the packaging design to find other ways of adding brand authentication and building customer confidence in their brand. Two packaging manufacturers, Decorative Sleeves and De La Rue collaborated with UDV to find a solution to the problem. The solution was a shrink sleeve fitted over the closure, which incorporated a number of security features including a full colour holographic tear strip, and designs using thermochromic ink, which provided a covert way of checking stock in retail outlets. The Smirnoff branding was included over the whole of the sleeve, and within the hologram.

“This was developed with De La Rue, so it incorporates a hologram, when you open it, it de-laminates, so that’s one thing. Holograms are difficult to reproduce so if you can stop 70 or 80% of producers who can’t reproduce it, then that’s a significant amount, and the number of people poisoned will be reduced by that amount. So we’ve put this in with unique Smirnoff branding on it, so that provides a degree of authenticity and it makes it more difficult to counterfeit. We also include on here thermochromic brand protection, so a Smirnoff representative can go into a retailer and know whether it’s counterfeit or not.”

Jon Cowan, Sales Director, Decorative Sleeves

The original design brief was set by the marketing department at Smirnoff, from which a UK design consultancy produced the design concepts, branding and the graphics to be used on the packaging. The design concept then went back into UDV where the in-house packaging technologists worked with packaging manufacturers to turn the designs into a practical output.

“Smirnoff actually came up with the design for the band, as part of the overall concepts, so you’re selling a secure product to your customer, and because of its Russian heritage they wanted to get some Russian text onto the design. I haven’t got a clue what it says, but it’s an integral part of the package. We designed the capsule, the bit that you actually put onto the bottle, to be easier to dispense automatically in that format. The actual design of what that says, and how do we get the branding on this, that was actually designed by Smirnoff, and the crowns as well was agreed between ourselves and the Smirnoff designer. We put in these other features and presented it to the client.”

Jon Cowan, Sales Director, Decorative Sleeves



Figure 4.3 Secure Packaging for Smirnoff Vodka

This packaging solution is unique to the former Soviet market, designed in response to particular crime problems being faced by that market. Whilst the design met many of the security requirements, there was still room for improvement. The main problem was that the sleeve was white, meaning that the tamper evident closure was not visible under the sleeve.

“... had someone from risk management or brand protection got involved, then they would have pointed out this is a drawback, this is a disadvantage of the design, the fact that this was opaque. But it was something that they wanted to do quickly to distinguish the genuine from the counterfeit.”

Susan Ward-Geddes, Director of Risk Management, UDV

Any security features which are designed into the packaging must be in keeping with the overall established image of the brand. The final approval for any design is given by the International Brand Director.

“... there are certain rules that you have to follow for our major brands which have to be signed off by the International Brand Director. As a rule, the Brand Director is responsible for the brand image, and there's things you can do, and things that are a complete no-no.”

Susan Ward-Geddes, Director of Risk Management, UDV

The role of the designer in this case was to create a design solution in response to a brief to overcome a particular crime problem, using a specified technology. The shrink sleeve had to fit in with the overall brand image already established for the brand.

4.4.6 Key points

In the case study presented, the security element of the design was specified in the brief, along with the technology to be adopted to provide the security. The actual graphic design was the responsibility of the design consultancy.

It would appear that while the packaging industry is becoming more aware of the problems of brand counterfeiting, and addressing the problem by developing their technologies, the designers themselves are still not aware of the impact of their designs on reducing crime, and the technologies available to accomplish this. Their main consideration for design is the aesthetics.

In the examples described, crime reduction features are considered only when they are specifically defined in the design brief. There appear to be few cases of the designer suggesting to their client that crime reduction should feature in the design. Designers are not currently proactive in using crime reduction features in packaging design, although this would be welcomed by brand owners who have experienced problems with counterfeiting.

The issues which have been raised through this section of the research are summarised below:

- Crime resistant features are often not specified in the design brief
- Crime reduction technologies are incorporated at later stages of the packaging development process by packaging technologists rather than designers
- Where crime related issues are incorporated, they are addressed at the later stages of the design process, not at the beginning
- Crime reduction features cannot be seen to add cost to a design, as they do not add value to the product or encourage products sales.
- Taking responsibility - shoplifting is not seen as a packaging design problem, or that of the packaging industry, rather it is seen as being solely the retailer's problem. Technologies are available now which can be incorporated into packaging design, but there is a lack of willingness to take responsibility to pay for it amongst brand owners, retailers or packaging designers & manufacturers.
- Crime reduction solutions are seen as a technologist/manufacturers problem, not a design problem – need to overcome barriers between design and technology
- Application of tags after production spoils designs for which brand owners invest a lot of money – this could be avoided if the tags were designed into the original packaging, which would necessitate further collaboration between retailers and packaging designers and manufacturers.
- Need better communication regarding the whole design process within brand owner companies, between marketing and security or risk management departments.
- Information needs – there seems to be little direct contact between the materials manufacturers and technologists who are developing the security technologies, and the designers themselves. Contact tends to be made through the client company, and so there is little opportunity for the designers to find out about new technologies.
- Feedback from clients to designers takes the form of looking for design solutions to particular market problems. Initiatives are not introduced across the board, it is a piecemeal approach to individual problems in individual markets. Designers would not be aware of the effectiveness of their designs in reducing counterfeiting or preventing product tampering, unless they are involved in subsequent iterative design work on products.
- Clients are obviously concerned about counterfeiting - they need to be educated to see that this is a problem which has implications for design, and specify it in the design brief rather than leaving it to the technologists and manufacturers. Need to build better links between the security industry and design industry for this to be effective.

4.5 Environmental design

4.5.1 Introduction

Environmental design is the field of design which has received considerable attention in terms of crime reduction. This subject covers urban design and city planning, or design of the 'built

environment', building design and architecture, and interior design. Situational crime prevention is an asset of environmental design.

Clarke describes situational crime prevention as comprising of opportunity-reducing measures which involve the "management, design or manipulation of the immediate environment in as systematic and permanent as possible"⁵⁵. It follows on from work arising in the 1970's by Oscar Newman⁵⁶ on 'defensible space', which looked at crime reduction through improved architectural design which allowed improved natural surveillance. The defensible space concept was extended with the CPTED principle - Crime Prevention Through Environmental Design. This encourages the effective design and use of a building and its surroundings leading to a reduction in crime and improvement in quality of life. It revolves around three strategies: natural opportunities for access control, surveillance and territorial reinforcement.⁵⁷ Situational crime prevention has a wider focus than defensible space and CPTED, which focus on the built environment. Numerous case studies and reports are available indicating the effectiveness of situational crime prevention.⁵⁸ These include areas such as reducing motor vehicle theft through the inclusion of steering locks in car design; strategies for curbing prostitution; the effect of improved street lighting; crime reduction on public transport and stations; effectiveness of CCTV in crime reduction; and reduction in vandalism through design. Various newspaper articles have also described cases of changes in environmental design reducing crime levels and public perceptions of crime⁵⁹.

Initiatives such as the Safer Cities programme, established in 1988, had three primary aims: to reduce crime, to reduce the fear of crime, and to establish safer cities to allow improvements in economic enterprise and community life. This has focused on crime prevention schemes in selected cities, through adapting the built environment. Reports indicate the scheme has been successful in many areas.⁶⁰

Environmental design however accesses a broad range of design activities, and in order to consider how design against crime can be addressed in such situations, this section has identified, design in public transport and retail interiors

4.5.2 Public transport design

55 Clarke, R. V., Ed. (1997). *Situational crime prevention - successful case studies*. Albany, NY: Harrow and Heston

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

57 Want to deter crime? Think CPTED <http://www.peelpolice.on.ca/cpted.html>

58 Webb, B. and Laycock, G. (1992). *Tackling car crime: the nature and extent of the problem*. London: Home Office Crime Prevention Unit; Clarke, R. and Mayhew, P. (1980). *Designing out crime*. Oxford: Home Office Research Unit Publications; Clarke, R. V., Ed. (1997). *Situational crime prevention - successful case studies*. Albany, NY: Harrow and Heston; Matthews, R. (1993). *Kerb crawling, prostitution and multi agency policing*. London: Home Office, Police Research Unit; Baker, M. and Bridgeman C. (1994). *Preventing vandalism: what works?* London: Home Office, Police Research Group.

59 For example, Arnot, C. (1998). "Crime prevention: Living Space." *The Guardian* 4 Mar: 6; Meikle, J. (1995). "Estate revamp 'fails to cut crime'." *The Guardian* 30 Jun:7 Tredre, R. (1995). "Crime falls as city's gangs hold their fire." *The Observer* 14 May:8.

60 Tilley, N. (1993). *The prevention of crime against small businesses: the safer cities experience*. London, Home Office, Police Research Group; Travis, A. (1994). "Crime Prevention: concern for the future." *The Guardian* 2 Nov: 29.

4.5.1.1 Introduction

Travelling by public transport is an environment in which the consumer often feels vulnerable to crime and where the designer can not only address the consumer concerns but also those of the operator and maintenance specialists. However most of the design literature in this field, covering rail and bus networks, urban tram and underground systems, air and sea travel is concerned with design issues such as styling. There is very little reference to the designer's role with regard to crime and security within the transport sector.⁶¹

The rail industry press does make reference to crime and indeed the sector as a whole reflects on crime related issues, for instance 6th Railway Safety Congress 1999⁶² included on its agenda 'Combat Crime on the Rail Network'. Yet design is not specifically identified as a major factor in combating crime. London Underground, for instance undertook three pilot studies in 1986 which concluded that crime prevention should be an integrated part of the operational management of the Underground system. The study recommended several measures that should be put in place to address specific crime problems and locations. These included improving the CCTV coverage, improving the visibility of staff on both trains and station platforms, and the radio communications for both staff and police, installing passenger alarms on stations, and maximising the effectiveness of passenger information systems. This provided a combination of improved passenger service supported with security measures. Obviously the role of the designer would be crucial to implementing some of those recommendations.

Designers working in this sector include architects, product, industrial, interior and transport designers as well as graphic and information designers. They should all have an awareness that public perceptions of crime in the transport environment have as great an impact on the decision to travel as the actual incidence of crime. Perceived threats of violence, robbery, and vandalism in addition to unclean environments, unreliable late running services and expensive fares are all issues that deter the user from choosing public transport above the car. The designer must consider all these issues when answering any transport design brief.

The general opinion of designers interviewed in this field was that the designer should inform the client of crime related design solutions where appropriate, highlighting the need to consider crime within the design brief.

The following two case studies demonstrate the benefits which the industrial designer can provide in the development of new trains, the design process that is followed and the designers perception of the extent to which crime impacts on the creation of new trains. Train design is covered from the wider perspective of the whole product development process in section one of this report.

4.5.1.2 Case study: The London Underground refurbishment

This case study addresses the issue of the designer acting as part of a team to integrate crime reduction features into train design, and the design of the environment within which the train operates. One of the major challenges in public transport is the 'seamless journey', encompassing the total experience of the passenger from the station ticket machine to the exit barrier. The time spent on the actual train is only part of that journey. From a design point of view, the designer is an essential part of the delivery of that journey. The consumer will not use a train even with the best interior design unless the train is reliable and seen as a crime free environment.

⁶¹ Cohen, B. (1989) "BR flights crime through design" *Design Week* 4 (10)

⁶² 6th Annual Railway Safety Congress, 6-9 Sept 1999, London

The success of designing a new train depends on it working for everyone, with the train operator, the maintainer and the customer having equal importance. Creative Design, a consultancy specialising in engineering and industrial design, were brought in to answer the design brief. Neil Bates, a partner at Creative, provided an insight into the issues of design against crime which were addressed in the project.

The design brief

The brief for the refurbishment of London Underground trains was to develop a design to be used as a refurbishment benchmark for the manufacturers to use as a basis for their technical and commercial decisions. The project aspired to improve maintenance, cleaning, reliability, issues of safety, personal safety and generally to improve the environment for customers in the whole vehicle. Essentially this broke down into two key issues:

- Achieve maximum impact with minimum money. (Refurbishing trains costs a third of the cost of buying new ones).
- Safety. (Creative's work for London Underground has since been widely regarded as the best refurbishment from a safety perspective).

Response to the brief

One of the major problems in public transport is that people do not feel in control of their environment. This is especially true for passengers travelling at night. This issue was a primary area for design focus when considering design aspects such as seating. The existing trains had compartmentalised seating areas, consisting of eight seats, four seats either side of an aisle. The designers analysed this arrangement and discovered that it could cause passenger unease, due to restricted fields of view, resulting in feelings that each compartment was essentially isolated from other passengers. The example was given where a passenger travelling alone may feel threatened by another passenger sitting the same compartment, given that there was no opportunity for natural surveillance by passengers in adjacent seating areas.

The difference between the way men and women travel became a major issue for the designers, with Neil Bates commenting that:

"I as a male travel in a very different way to a female. Females have different values when they are travelling. We needed to understand that".

By taking this issue into consideration, the designers radically changed the interior layout of the train. The new layout was much more open, allowing greater fields of view along the whole carriage rather than restricting this to one compartment, providing improved opportunity for natural surveillance. It also allowed better demarcation of personal space.



Figure 4.4 The new interior

This new environment was found to help all late-night passengers feel more in control of their environment. In addition, the use of light in the interior was been greatly improved. The existing lighting system was retained, however in changing the interior layout the designers were able to utilise light to greater effect. Using glass panels at the end of each seating arrangement resulted in there being no concealed areas where people could be concealed. Windows were placed at the ends of the cars to enable passengers to both see and be seen. In effect passengers can now see throughout the whole carriage and well into the adjoining carriages. Finally CCTV cameras were placed in each carriage, which are linked to the driver.

4.5.1.3 Case study: Chiltern Railways

Creactive Design have also been involved in other train design projects. A more recent project involved the design of a new commuter vehicle for Chiltern Railways. This case study describes the design process followed, identifying the design decisions which would take crime reduction into account.

Neil Bates provided an analogy for the design process in this industry:

'The analogy I would use for building a new train is it is like digging a hole in a field. The customers will tell you where to dig the hole. We as designers tell you how deep and what shape. And that is the best analogy I can give you. That holds up for everything that we do whether it is security led or financially driven, or commercially driven from a passenger perspective'.

The design brief

Having been appointed to design the new train, the design team received a research report compiled by the train operating company (TOC). This includes technical specifications together with consumer research. Within this report there is a summary of the important interior design measures, including both consumer driven requests and maintenance driven specification, with the main issues being primarily about seating. Crime and security did not feature on the list, so Creactive liaised with the British Transport Police to discover what the main crime issues were on Chiltern Trains. These were theft and opportunist removal of goods, with no violence, very little vandalism, and very little crime in general.

'As a commuter vehicle it probably is very low on their priorities because the types of crime are the ones that appear anyway, where there is crowd, you have pick pocketing. Crimes of violence, there are just too many people around'.

Idea generation and concept design

The design process starts with a floor plan to give the design team a space frame within which to work. In terms of concept generation the designers move very quickly from paper based initial ideas onto computer-generated models and produce real-time walk through animations of the train interior. Utilising this technology allows for potential problems to be identified almost immediately without the expense of building a full size mock-up. The designers can quickly develop the interior through design team / client modification.

Concept development and detailed design

On completion of the concept development, the work then focuses on detailed design proposal, which considers the material finishes and different class layouts etc. The manufacturers use the computer generated models from the design team to create a range of near perfect representations of the designer's visions. In working in this way the designer can define every component and detail of the interior. At this stage they can check the crime prevention issues with regard to durability, materials and surfaces.

"We are using very low cost manufacturing solutions. So we are taking advantage of these processes to produce a solution that is cheap, effective, durable, safe and good for all user needs.... in a way that gives the industrial designer control and not the engineer. This is design led engineering."

The designs are always taken to the full size mock up stage. Even though the computer can produce such accurate representations, there will always be aspects of the design that can only be evaluated in reality, and again crime reduction issues can be analysed at full mock up stage.

An inherent part of any design process is that compromises will have to be reached, such as meeting specific client wishes, or taking into account restrictions imposed by manufacturing capabilities. Those decisions may alter the design in a way that may detract the effectiveness of that design in terms of crime prevention, and the designer must be aware of the possible consequences of those decisions.

Neil Bates strongly believes that design against crime has to be considered throughout the whole process.

"And if your client is to looking to get it wrong, lets say if they don't want to take on a CCTV, you have to stand up and say 'I'm sorry I think you are deadly wrong here, this is going to cost'! In terms of public transport now LCC, Life Cycle Cost, is extremely important and Life Cycle Cost means replacing broken glass, replacing broken telephones, replacing broken so on and so forth. The designer has to consider this LCC throughout the entire design process, which means that crime resistance must play a significant role in that process."

4.5.1.4 Discussion

Designers working in the public transport environment can have a major role to play both on the physical aspects of crime prevention such as space, light, material etc, and the psychological factors making the customer feel safe. The cases describe above highlight the following points:

- The designer working in environments such as trains have an influential role on that environment and therefore cannot ignore the issues crime presents.
- The designer must challenge the design brief and that through good project management can educate the client in the need for designing against crime.
- The train's design has to consider all stakeholders, the operator, the maintainer and the customer and the designer must integrate and consider their needs with equal importance.

4.5.3 Interior Design

Although Interior design has received less attention than that of the wider built environment, it appeared to be a major issue during discussion with the Crime Prevention Officer in Sheffield, especially for pubs and clubs. Several anecdotal examples were given of simple changes in design of public buildings, which could reduce specific crimes, and also of the lack of consultation which occurs when new developments are being undertaken. The Portman Group report, entitled *Keeping the Peace*⁶³ 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, lay out to minimise potential for jostling and allowing adequate monitoring and surveillance.

The design of retail outlets is another related area which 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 open, attractiveness of retail environment and requirements of security, as explained at the Retail Innovations Conference April 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"⁶⁴. Other examples of crime reduction through changes in interior design include the retrospective of a classic design project - the re-design of the DSS benefit offices by Lloyd Northover in 1989 was described as a "benchmark in public sector design that changed public attitudes and behaviour"⁶⁵.

Retail design plays a significant part in the work of interior designers interviewed, and the retail industry attracts a large amount of interest from the design industry. Design Week publishes an annual supplement about the retail industry detailing many of the factors about retail design⁶⁶. Crime reduction is never mentioned as a factor within this.

4.5.3.1 Crime issues

The crime issues on which interior design could have an impact are numerous, depending on the purpose for which the building in question is being used. For retail design, which has formed the focus of this area of study, there are issues surrounding both shoplifting and after hours security. After hours security deals with risks including burglary and criminal damage. This tends to be less of a concern for the interior designer, and more associated with the architects.

Crime reduction spending by the retail industry continues to increase, the main areas being on electronic tagging, security staff and equipment maintenance⁶⁷. Security installations such as burglar alarms and CCTV are now widely used as standard, these are now included more commonly in the initial store design, allowing for greater flexibility in changing the positions of fixtures.

⁶³ The Portman Group (1993) *Keeping the peace: a guide to the prevention of alcohol related disorder*. Oxford: The Portman Group

⁶⁴ Design Week (1997). "Thieves say design helps them." *Design Week* 18 Apr: 4

⁶⁵ Sweet, F. (1995) "Reaping the benefits of design" *Design Spring*: 46-51

⁶⁶ Dowdy, C. (1999) "The big picture - Retail" *Design Week (supplement)* Jun

⁶⁷ British Retail Consortium (1999) *Retail Crime Survey 1998* London: British Retail Consortium. March: 19

Shoplifting is a major problem, including theft by both customers and staff. Store design can be used effectively to enhance visibility throughout the store, thus acting as a deterrent. Product display is a major part of retail design, and for more expensive items, frequently involves some form of product tagging. As electronic product tagging becomes more common, from a design perspective, both the application of tags and the detector system must be incorporated into the overall design.

Staff safety was frequently mentioned as being of paramount importance. The incidence of violent crimes against staff remains high, with 67% of attacks being caused by staff preventing customer theft. Designing in crime reduction deters potential thieves from entering the shop to commit the crime, thus reducing the potential for violence against staff.

4.5.3.2 Awareness

Environmental design, for both interiors and exteriors has attracted some interest in crime related issues. This tends to be more pronounced the nearer the architectural end, that purely aesthetic interior design. Within architectural practices, they receive direct mailings from the security industry, and also there are adverts and occasional articles and editorials about crime issues⁶⁸. These tended to concentrate on retail design

Awareness about crime issues appears to vary widely amongst design consultancies. Three consultancies were approached during this research, one was very knowledgeable about crime issues, the second was aware that it must be taken into account, and had a considerable contribution to the overall design concepts. The third was only concerned with the aesthetics, and had not considered crime issues in design work carried out. Again, as for other design disciplines, this varies on a project by project basis, depending on what is specified by the client in the design brief.

None of the designers questioned had personal experience of having design against crime included within their design education. However one designer, Sandra Weerasinghe from Creative Action, was aware of crime related issues within design, and pursued this theme through her final year dissertation. This was entitled 'Fear of the Free City',⁶⁹ which included aspects of design related to public perceptions of crime within the city environment.

4.5.3.3 Design Against Crime

Various aspects of store design can have an effect on the level of crime experienced in the retail environment. These include the overall store layout, including the entrance to the store, design within changing rooms for clothes retailers, and product display. Research carried out has

⁶⁸ Trousdale, M. (1994) "Minimising risk by design." *the architects journal*, **199**: 27-28; Burns-Howells, T. (1994). "Security with a friendly face." *the architects journal*, **199**: 28; Cain, B. (1994). "No opportunity means no crime." *the architects journal*, **199**: 29; Blyth, A. (1994). "Making the best use of CCTV." *the architects journal*, **199**: 32-33; Blyth, A. (1994). "Fighting crime with design." *the architects journal*, **199**: 20-21

⁶⁹ Weerasinghe, S. (1994) *Fear of the Free City* Final Year Dissertation London: University of North London

focused on smaller individual stores, either independent or part of national chains. Interviews have been carried out with retail designers, retail owners and the British Retail Consortium.

Store Layout

Store layout can have an effect on the level of shoplifting, mainly through minimising the opportunity for crimes to be committed. An open environment, allowing staff good visibility of all areas of the retail space, will discourage opportunist shoplifters due to the increased risk of being observed. Paul Bentley, head of security at Moss Bros. explained that to maximise the surveillance of the retail space by staff, “Ideally we want to avoid building in blind spots.” This, however invariably leads to “image clashes with the retailer, designer and architects” involved.

Both the retailers and designers agree that clear visibility is important for both business and security.

“... any effective retail space should be visually legible. So when the customer walks in it should be as obvious as possible where they’re supposed to go, where they’re not supposed to go. We want to give them very easy visual messages. If it’s very confusing, the customer will just walk out we have a central belief about the ease of retailing is about good visibility and good visibility is also very good for security”

Hugo Tugman, partner, The Tugman Partnership

Previous experience working in the retail industry gave one designer an insight into the problems faced through lack of opportunity for staff surveillance.

“I was working in a showroom designing kitchens. And even though it was continually staffed all day, because of the way it was laid out, you would have little areas of displays and you would come back and you’d notice things like bread bins missing”

Sandra Weerasinghe, designer, Creative Action

Security Installations

Compromises have to be reached between all the different parties involved with trying to influence the final design of the store, making sure that regulations regarding fire and safety are met, and that adequate security measures are in place.

“Usually the security company will work with us, and we sometimes have a bit of an argument with them because we don’t want their sensor in the middle of our beautiful white wall.”

Hugo Tugman, partner, The Tugman Partnership

The retailer's security department will usually have differing ideas from those of the designer as to the positioning of certain features.

"...all the major store groups have heads of security who will have a say in new store design or store revamps. Most stores will look at things like sight lines, heights of gondolas. You're looking at the design of the till, till guards, lighting, cameras, and in some cases you've got conflicting requirements within the store. You might want the till point in the middle of the room, but the head of security might want it next to the door. At the end of the day, where it goes is a matter of what the compromise is that you've reached ... some form of compromise is going to have to be made in design."

Mike Schuck, Assistant Director, Retail Crime, British Retail Consortium

The best solutions result from the designer and contractor agreeing to negotiate. Working together, and having a certain level of understanding about the work of others involved assists the process.

"The problem is that the designer or the architects have to try and think about everything, and all the specialists, whether they're air conditioning specialists, or burglar alarm specialists, fire alarm specialists or lighting specialists, they only care about their own areas. So the burglar alarm man comes along and says the best place for the burglar alarm sensors are here, here, here and here. The architect says well I don't want it there. The burglar alarm guy doesn't care about the other things that the architect cares about, the architect cares about the whole thing. The burglar alarm man has absolutely no consideration or interest in what the shop looks like, he just wants his sensors in the best place. Now the good burglar alarm people and the good architects are the ones who get together at a reasonably early stage and try and understand each others position. So the architects understand the principals behind the alarm system, understands that every area has to be served, and the burglar alarm man is prepared to try and accommodate what the architect wants visually. And they can do it"

Hugo Tugman, partner, The Tugman Partnership

Compromise has to be found in other areas. While this is more the remit of architects than designers, it is still an area which causes problems. The district surveyor (DS) must give approval that fire regulations for buildings within their area are being met – some allow a certain level of flexibility, others are less accommodating to other requirements.

"The DS has got no responsibility with regards to security so he will try to get his criteria met even if it means other criteria are ignored. And that's one of the problems we have to deal with. It's persuading the DS that something that is secure enough for the client is acceptable, or vice versa, persuading the client that he's simply not going to let this project get done with the security measures that he wants."

Hugo Tugman, partner, The Tugman Partnership

The whole retail environment in which a store is situated affects the design decisions made about a store and the crime reduction features which can be incorporated. Inclusion of shutters in windows, and installation of ram raid bollards is met with opposition from town planners if this does not fit in with the overall town environment.

“... we have a problem with what retailers want and what planners will allow. the council had paid out a lot of money paving it, putting street furniture in and all sorts, and they were actually refusing retailers permission to put anti ram raid bollards up. Because it didn't fit in aesthetically.”

Hugo Tugman, partner, The Tugman Partnership

Changing Rooms

For clothes retailers, the changing rooms represent the only area where customers are not being observed, and a number of incidents were reported of tags being removed from items and hidden to avoid detection. The design had to take account of customers' imaginative methods of concealing tags, which included behind skirting boards and on top of loose ceiling tiles.

“We did this design for [a fashion retailer], in which mirrors were held off the wall so we could put fluorescent lights behind it, and the light would be like a halo which was very effective lighting, really quite flattering in that situation. Because there was a ledge behind the mirror, it provided a ledge for people to put the tag that they'd taken off the clothes. And so we then redesigned it so that they were all sloping at an angle of 45° so you couldn't put anything down on it.”

Hugo Tugman, partner, The Tugman Partnership

Product Display

For small, valuable items, retailers are faced with the problem of allowing legitimate customers the freedom to browse the products on sale, while making sure they remain secure.

“It's point of sale, and lockable storage, but also display. There's [a watch retailer], down on Carnaby Street, which is very visual. They wanted clear looking design, and watches, because they're a small nickable item, we have to put them in a display case. I think that because the way the store is designed, it actually works with the visual experience. You've got little pods on the wall, and they've got a little bit of blue sky behind it. It's surreal. And you've got these watches inside so obviously when you're trying on jewellery or small items you're going to have to ask for someone to get it out. And that again creates another level of security, you've got to make it a bit more personal when you're actually trying them on.”

Sandra Weerasinghe, designer, Creative Action

Tagging

Product tagging, as part of product display, resulted in several different opinions being voiced by designers involved in retail design. The tags themselves, which were considered to be “a design

feature,” were the subject of much debate, as to whether they should be covert or an overt deterrent. Visible tags act as a deterrent, in stopping attempts at shoplifting, and therefore avoiding confrontation with staff. Source tagging, where tags are applied within the packaging or product itself will potentially reduce the incidence of staff theft, and will alert staff to attempted theft, but will not have the same deterrent effect. Other stores opt not to employ tags at all. For one chain of stores three reasons were given for this. First of all, it was suggested that it is a pointless exercise because “basically if someone comes up with an idea which will actually prevent shoplifting, someone else will come up with another idea to overcome that barrier.” The second reason given was that if there is no visible tagging system in use, shoplifters may consider that there “must be something more sophisticated further down.” Thirdly, profits on legitimately sold stock cover the losses from shoplifting. “If someone does walk away with a shirt worth £24, then fair enough, they’ve made enough from a selling point to actually overcome that shortfall.”

Balancing the importance of profit levels and cost of security affects the displaying of products and security systems used.

“... its one of those compromises between cost and benefit, how much do we lose, if we can afford to lose 1%, 1½% to keep our losses down to the level it is, we’re still doing alright. So you’re not going to invest £1000 to save £100. The answer is we’re against crime but only where it pays ... we’re still making a profit, so don’t worry too much about it, That’s the more cavalier end of the market. The other end is that you don’t put it on display on the shelves, but no one will come in your store to buy it. Competition drives. So design is one of the issues.”

Mike Schuck, Assistant Director, Retail Crime, British Retail Consortium

Choosing the tagging system to use depends on a number of factors, including cost, the technology involved in detection, and from a design viewpoint, the design of the tag itself, and of the detector system in use, which must be in keeping with the overall image which the store is trying to portray.

“There’s one company that really is the most predominant. And in my experience they have been very, very difficult, very disinterested in what we’re trying to do. They also have reduced and reduced and reduced the options they offer, and they say you can have this or have this or have this and that’s it. They like to use a pedestal system, they have two pedestals inside the doorway, and the pedestal systems they use are all repulsively ugly. Now that’s fine if it doesn’t have to be in keeping with the store’s image, it is a visible deterrent, but if you’re doing work for someone like Cerruti or Jigsaw you don’t want repulsively ugly pedestals either side of the door, because people don’t expect this, they have a certain reputation they want to keep up, and they don’t want these horrible things. What we try and do, we try and choose systems that are as near as possible invisible at the doorway, so that has the least impact on the architectural stance, and yeah you do need a certain amount of deterrence, but if every item on display is tagged, and visibly tagged, then the deterrent is apparent.”

Hugo Tugman, partner, The Tugman Partnership

4.5.3.4 Case Study - Blazer

As with other design disciplines, retail designers need to devise design solutions which provide an acceptable compromise between many different design considerations. This case study demonstrates how the conflicting needs of the client can be successfully resolved through having a thorough understanding of the problems which exist, and available technologies which can be utilised.

The Bluewater shopping centre near Dartford opened in March 1999. It is the largest retail and leisure complex in Europe housing over 320 shops and restaurants in over 15000m² of retail space. The whole development has been based on an “integrated, innovative design policy”⁷⁰ with the design team for Bluewater having some influence over the interior design of all the retail outlets. Of the 320 outlets, 200 designed new concept or flagship stores for the development⁷¹. Included amongst the retailers is the Moss Bros. chain of menswear stores, which opened three outlets within Bluewater, Blazer, Savoy Taylors Guild and Cecil Gee. The interior design for the Blazer store, was assigned to the Tugman Partnership, directed by partner Hugo Tugman. The Tugman Partnership is a small multi disciplinary architecture and design consultancy, formed in 1992, which currently employs 5 people. Approximately 60% of their work is concerned with retail design, with clients including the fashion retailers Kookai, Jigsaw and Cerruti.



Figure 4.5 Blazer at Bluewater Shopping Centre

⁷⁰ Cole, C. (1999) “The big blue” *Design Week*, **14**: 22-23

⁷¹ Hyams, J. (1999) “The big blue” *Design Week*, **14**: 23-27

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 “implement the rebranded Blazer image in a long thin unit within this high profile new shopping centre.”⁷²

Initial requirements for the project was to come up with design concepts which were appropriate to the overall image of Blazer. There was no formal design brief for the security features other than indicating that as part of the security for the store, CCTV and a tagging system 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.

While the crime reduction features had not been an official part of the original design brief, concern was raised at this stage about the features that had been included. 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 concurred with the designers about the tagging system to be installed. All Moss Bros. stores had previously adopted a tagging system which 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 entrance to the store would be wider than 1.7m, the maximum distance allowed for separation of the pedestal detectors in the system previously used by Moss Bros. There would then have been 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 adopting a loop system instead which could be incorporated easily into the aesthetic design. While the designers and visual display department wanted to adopt a system which was 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.

Since the completion of Blazer at Bluewater, Moss Bros. have 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 since then. Initial design concepts presented by the Tugman partnership for other Blazer stores included many security features which needed to be amended in the Bluewater project.

4.5.3.5 Discussion

This research undertaken into interior design finds a number of issues:

- There is some awareness amongst retail designers of crime issues, although this is sometimes on a superficial level
- The level of awareness depends on the involvement with the overall building design – architects have greater awareness than interior designers.

⁷² Case studies from the Tugman Partnership website
(www.thetugmanpartnership.com/pastdoc2.html)

- Crime reduction factors are often not specified in detail in the original design brief – in the case of Blazer, the security elements were discussed at an on site meeting once the design concepts had been presented.
- The designer's role in this case was important in finding a compromise between the aesthetic needs of the visual display department, which set the original design brief, and the requirements of the security department. Understanding the security requirements at the start of the process allowed the design and development process to progress much quicker with subsequent projects.
- There are few incentives to incorporate more crime reduction spending than necessary. Certain amount of acceptance of crime in the retail environment, accept that there will be some shrinkage. Prices charged to customers are high enough to cover losses, therefore no point over spending of crime reduction.

4.5 New Media Design

4.5.1 Introduction

New media, is a term that encompasses many aspects of communication in business and society. Digital design, multi media, and the development of communication channels such as the World Wide Web are forecast to dominate every aspect of life. As this the digital revolution accelerates, and we interact in new ways, it is important to understand how will we become exposed to issues that affect us in the real world. For instance how will crime appear in this virtual society and what do we need to do to combat it? There are over 750 million web-sites in existence and more and more organisations are looking at the logistics of e-commerce.

It is estimated ⁷³ that 35% of the population now have Internet connections, and spend on average 400 minutes a month online. With the inclusion of Internet and e-commerce access via digital television, this number is set to increase significantly. Its capabilities are being exposed to a wider age and socio economic groups. Open, the interactive television service controlled by BSkyB and British Telecom has said that it has already signed up 200,000 users to its e-mail service, distributed through Sky Digital. It has also attracted 73,000 users to the on-line banking service provided by HSBC, while 60,000 users have experimented with interactive games.

The research company Verdict forecast that on-line sales among UK consumers will soar from £406m in 1998, to more than £6.1bn in 2003. ⁷⁴ Verdict predicts that on line shopping through the internet and digital television will account for 3% of the entire retail sales⁷⁵, compared to just 0.3% today. Books, computer software, music and video will increasingly move to online sales, but they predict the most valuable sector to be food.

As the potential effects of this revolution emerge, more focus is being placed on the possible opportunities for crime. A national police crime squad is to be set up to address the growing issue of computer and Internet related crime⁷⁶. The squad expected to called the 'High Tech Crime Unit' will have 'cells' or specialist sectors to deal with the different types of cyber-crime. They will include fraud, pornography, paedophile activity, spreading race hatred, counterfeiting,

⁷³ Arthur, C. (1999) "We're all snared by the web" *The Independent*, 31 Dec

⁷⁴ Verdict on Electronic Shopping 1999

⁷⁵ Arthur, C. (1999) "Net shopping will be worth £2.3bn in four years" *The Independent*, 6 Dec

⁷⁶ Bennetto, J. (1999) "Police launch a cyber squad to combat growth of internet crime" *The Independent*, 26 Oct

gambling, hacking and theft of information, software piracy, money laundering and sabotage involving computer viruses. A National Crime Intelligence Service spokesman was recently quoted saying; 'The picture is becoming clearer, but no one yet knows the full scale of the problem'. David Phillips, the Chief Constable of Kent and head of the Association of Chief Police officers crime committee argues that without a specialist team means that 'at present we are almost blind'. He said 'we recently had discussions with computer experts from the USA who told us they were dealing with millions of pounds of criminal transactions. They are just mind-boggling levels of crime'.

With increasing opportunities for crime within this area it is important to understand the role of the creators of new media products and how they approach crime prevention. New media designers are responsible for many of the products used on the Internet. New media design is the creative use of digital technologies in areas ranging from web and CD-ROM design, to digital music, television and film. The following case study focuses on a senior designer working within the new media industry and highlights issues and attitudes towards crime within that design industry.

4.5.2 Case Study: Design at AMX Studios

Background

AMX Studios describes itself as a total interactive communications company, working in interactive and screen based media. It was recently listed as number 5 in the Top 100 new media design consultancies in the U.K. Their diverse range of clients include corporate businesses, technology based companies and the television, film and music industries. Richard Holley is a senior designer with AMX.

An emerging industry

New media design is still in its infancy as a profession compared to the more established forms of design of architecture, graphics and product design. Design disciplines have traditionally developed through incremental growth, however with the growth in new media the demand for designers in this field has been extensive in a relatively short timescale of ten years. The exciting nature of the discipline has attracted designers and personnel from many backgrounds such as graphic design, product design and other disciplines such as computing and information technology. There are now specific courses in design education aimed at new media designers such as creative technology and digital design.

As the software in media has become increasingly user friendly, there has been diverse group of disciplines working in new media, as a result, as Richard Holley explains, the roles and responsibilities are still being defined and there is still a degree of learning to be established with regard to such social issues as crime and crime reduction.

"As a designer in multimedia it can be very cloudy, and people are still trying to find where their responsibilities lie.We are still learning. It is still a very naive industry. From the client side of things as well, really that's where it can be very naive. And they are perhaps not aware of these [crime] issues, it is definitely the role of the designer to advise them and guide them and make them aware of these issues as well."

New media design perspectives on crime

Security issues on the internet vary, Richard believes that:

“New media is exposed to every element and aspect of corporate culture essentially; and because of this wide acceptance, there are many different types of crime throughout the whole industry.”

However he goes onto explain that:

“a lot of the time the product doesn’t have to have any security it is the system that sits in front, that holds that product. You [the designer] are doing a very small web-site and they [the client] already have a site and this product is just a small aspect of it. There really would be no security issues that you would have to consider. Security only becomes an issue when you are hosting the site.”

Despite well-publicised examples of internet crime such as attacks on sites, fraud and industrial espionage, Richard still believes that opinion within the design industry is mixed and that often people are not concerned with new media crime until they become a victim. However it is his own opinion that as a designer within the industry it is essential to have an awareness of security issues.

“I think what I am most aware of is that the information that I am designing with can be very, very sensitive and if it was to get into the wrong hands, the implications are massive... Its not as if every web site you do is constantly under attack. It’s going to be quite rare. But you can never be too safe....I think there has been about four or five incidents on web-sites that I have worked on or indirectly on which have come under a security attack.”

Richard believes that it is definitely worth being aware of the issues and implications. How those issues translate into the design process is dependent on the type project, and on the role of the designer during the product development process.

“Some designers in new media design will have nothing to do with the production, actually in making the product. They will concentrate purely on the visual aspect of the design. But perhaps it is really only once you become involved in the coding of the product and the building and construction of the product, that is where the actual security issues lie.”

The Design Process

Currently there is no definitive new media design process and no definitive solution to crime reduction or prevention. Essentially the design process in new media harnesses the skills of the

graphical designer and the IT designer. In more traditional practice the graphic designer would be solely responsible for the way the information is displayed on screen with the IT designer providing the background mechanism to facilitate this. Whilst the roles of the graphic and IT designer are very different, in new media there is an increasing trend for there to be a crossover allowing the graphic designer to become more involved in the construction of the product. As with most design disciplines the work then is generally a team process, and the responsibility for product security rests with the whole team.

The brief and concept design

The design process in new media begins with the brief - a discussion between the design team and the client in which the parameters of the product are identified. It is here that the design team can identify the nature of the product and where the security implications lie. On formalisation of these design parameters the concept generation process begins. This mainly involves concepts for the purely visual aspects of the product and not its construction.

Programming and construction

The stage of the process where crime becomes a concern is in the programming or construction of the product, where the more complex the solution, the more important the level of security. This is often related to the budget, as Richard explains:

“There are different ways of achieving the same product. It can look exactly the same to the end user. But one product could cost £5,000 and the other could cost £500,000. It depends how much money is budgeted to ensure that the security measures are in place.”

It is during this construction phase that the designer’s knowledge and experience from past projects can be employed to make the product more secure.

Testing

The programming stage is closely linked to a test and evaluation stage where the issues such as product use and security are examined. This is a key phase of the project in terms of security. Testing is carried out either within the consultancy by people not directly involved in the project, or by external personnel where budget levels permit.

On completion of the product, it is put on line. At this stage it will be housed either on the clients site or hosted by the design consultancy. In both scenarios it is important for the host to be vigilant in monitoring the internal security of the server.

The Server

A server allows direct communication between the web site and the user, and responds to web requests from users, returning the appropriate files from the file system. It needs to be secure, facilitating the communication link without allowing a third party to intercept transmitted information, and access the system. The designer can implement measures to prevent unsolicited access, known as firewalls. Richard explains that this is an aspect of design which needs considering:

““Most of the crimes are more to do with the server, essentially. Storing data, preventing access to it. ... Firewalls makes sure that people aren't able to take information off your server or get through into other areas of your network inside your company.”

Obviously the role of the server in financial transactions is crucial. If such transactions take place then it is most likely to be on a secure server. There can also be a third party involved in secure transactions. This third party is known as a clearinghouse, and its purpose is to authorise the credit card transaction (shown in the model below). This can be a potential weak link in the chain, and if sufficient information is not gathered at this stage, the potential for fraudulent transactions increases.

Passwords, voice recognition, eye scanners and finger print scanners are all ways in which the designer can incorporate security. Apart from designing in measures to prevent criminal activity there is also the method of analysis. By monitoring transactions and information coming in and out of the server it is relatively easy for the host to control security.

“although we [AMX] have not had any problems we certainly have questioned things. I mean if someone has placed an order for several thousand pounds of certain items, then you would be stupid not to question. Even if it turned out to be an innocent purchase, you do have to be vigilant.”

4.5.3 The role of the designer in other aspects of new media crime

Hacking

Hacking is a very large security risk for which designers can not plan. For instance Hotmail was recently hacked in early 1999 and there was the potential to view the details of hundreds of thousands of users. Crimes of this nature are in the remit of organisations such as IBM and Microsoft. However, the collection of data is one of the issues of site management and as Richard points out:

“If we are collecting data for a client and we have, for example 50,000 e-mail addresses. If their competitors were to have access to that, the amount of damage they could do is phenomenal.”

A new media design consultancy hosting such a site must be aware and vigilant with regard to such criminal activity. By being vigilant the designer can actually learn from someone hacking in. There have been instances in the past where people have tried to hack systems of sites that AMX have been managing. Richard maintains:

“The key to this is to catch the offender at the beginning and patch up that hole. It is sometimes the case that it is not until someone has actually hacked in that a problem can be identified. There is no way you can guarantee that something is 100% secure necessarily. So obviously once you have got your system in place the thing to do is not to assume that it 100% secure, you do have to vet who is coming into the site. If you assume it is 100% safe then someone could be in there and changing things all the time.”

Emerging Crimes

There are emerging crimes related to the purely visual aspects of design in new media, for instance the use of licensed software or typeface design. It may be that a designer distributes software to the client to support elements of a new media product, or internet site or the designer includes certain fonts (typefaces) that come under licences and such licenses have not been procured, the designer will be committing a crime.

Other crimes such as Denial –of –Service are emerging, for instance Yahoo.com and Amazon.com on the 10th of February 2000 along with others were bombarded with information making it impossible for legitimate users to get through. In addition are other issues of criminal activity such people being stalked and receiving threatening e-mails, blackmail, race hate campaign sites, pornography, and the collection confidential information on users are all arising. New media designers need to understand such problems, however there is still a question as to how much influence the new media designer can have in such situations.

User Confidence

It is important for the industry to maintain user confidence in the internet system. This again is where the designers have a role but also have the potential to mislead as Richard suggests;

“Something like the internet has equally got a way of convincing people it is 100% safe. You could make a web page or web-site, look very convincing and yet be the front of a massive counterfeit ring or something.”

In addition when transactions are made there are legal implications, consumer rights and terms and conditions etc. On the internet, due to the methods used of on-screen display, consumers tend to ignore information contracts and legal terms and conditions, as they want to get straight into the visual side of the site. The potential exists of the user being misled and agreeing to conditions of which they are unaware. Designers could have a role in this situation;

“You do tend to cover these things up. Your not hiding them away, it is important that they click to buy, but legally there has to be a terms and conditions on that page or a link to it that is obvious. Personally as a designer I wouldn't want anyone to have to scroll through an enormous amount of text. It is a compromise. I think all

you need is a word terms and conditions and if people are interested in finding out what is legal or binding about that purchase, then they can click on it."

User confidence is something that cannot be controlled by a designer. Once you have designed a product and it is in use the designer can not govern that use. At that stage of the process the designer has done all they can, it is then down to education of the user.

Information sources for the designers

In this rapidly expanding area there are changes both in technology, design and use, it is therefore important for designers to keep up to date with such changes. A popular means of keeping in touch with new developments in new media are news groups. Most news is about software rather than crime or security, but if there is a security flaw, (as there tends to be when a new piece of software is released) this is communicated rapidly via such news groups. Richard suggests that

"Essentially as long as you are kept up to date and informed about the software you are using then you should know if there are any security issues or not."

Design Education

As this field and discipline is developing there is a lack of focus on security issues. Richard points out that:

"Security was never something that was addressed on a graphic design/multimedia courses at all. It does definitely fall much more under the remit of the IT area. Perhaps if you were building and maintaining networks then security there is a premium issue. I doubt it is going to be part of a new media course."

Discussion

Richard, as an experienced new media designer, has a high level understanding and awareness of the security issues within his field. However he is quick to highlight that although crime issues are important there are many other complex issues facing new media designers, commercially and creatively.

"It is quite complex, but if you get bogged down in all this (crime) then you will never get anything done. It does come down to common sense. You just have to realise the potential for danger and make sure that the potential for crime is covered."

A number of issues can be drawn from the experiences described in this case study, as summarised below:

- Cost is a major factor in determining the level of security which can be designed into new media design projects
- There are differences of opinion across the industry as to the relevance of crime to new media design, and the role of the designer in dealing with this.
- It is a new, rapidly developing field, which is constantly facing emerging crime issues.
- Understanding crime reduction and security design features, and the ability to implement them result from prior experience in the field rather than from formal training.

4.5.3 New media - key points

- This industry is changing so rapidly that is difficult for the designers to maintain vigilance with regard to security and crime. However this is essential and channels need to be available to ensure crime and New Media knowledge is built up and maintained.
- The crime related opportunities for New Media are not yet fully understood, nor has the design process been defined to address how and when crime considerations and interventions should be addressed
- Due to the cross-disciplinary nature of the designers in new media, the role and responsibility for considering crime-related issues has not been allocated to any one profession.
- There is a need in New Media to become pro-active in regard to crime rather than reactive. The New Media Designer has a responsibility to forge a secure working practice to ensure security on the internet
- Design education in graphics and new media has not been exposed to crime related curricula
- However emerging courses such as Digital Design and Creative Technology offer the opportunity for a more consistent approach to introducing crime prevention/resistance issues into the design process and design curriculum

4.6 Design practice - conclusion

This section has addressed the role of the design practitioner in designing against crime. The wide ranging nature of designers in practice has meant that this study has only been able to touch upon the many aspects and disciplines within design practice. However the case studies have been able to identify the contribution the designer can make, and how such designer can work with all stakeholders to address crime related issues. It does however also illustrate that most designers are not aware of the issue and those who are do not believe that designing out crime is a total solution. To summarise the main issues arising from the case studies are as follows:

- Design against crime awareness is not common amongst designer
- Design against crime is not usually high on the initial agenda at the onset of a project for the designer, client or manufacturer.
- Design briefs frequently do not refer to crime prevention resistance
- Security and crime related issues are often not brought into a project until late in the development programme
- There is often little incentive to include crime resistance into a product or environment and frequently little return on investment perceived for the client.
- Designers are always faced with a trade-off between designing against crime and other functional or aesthetic factors
- The problems of crime prevention are often seen as somebody else's responsibility.
- Designers have a significant and influential role to play in:
 - Accessing all stakeholder opinion including the user/consumer through a focussed requirements capture process at the onset of a project
 - Elevating the clients awareness of crime related issues
 - Challenging the design brief to ensure it covers crime prevention crime resistance
 - Integrating all the stakeholders throughout the product development process to focus on crime related issues
 - Using visualisation tools to enable the stakeholder to see crime related issues and solutions more effectively during the new product development process
 - Influencing the design of products and the product/environment to be both crime resistant and to change the user perception of the product/environment
- Crime and security issues need to be considered at the onset of a project and monitored throughout the entire product development process
- There will always be situations when the design will become less resistance and therefore designing against crime is one of continuous improvement

- Designers will need to build up awareness through Continual Professional Development

These factors obviously raise issues for the industry but mainly for the training and development of designers who clearly have a major role to play in designing against crime. This will be discussed in a later section of the report.

5 Design Education

5.1 Introduction

This chapter examines the extent to which crime issues are addressed within design education and the potential for building further on current practice. Given the distinctive nature of teaching and learning strategies in design, and its disciplinary diversity, it is necessary to begin by briefly describing the background and nature of design education in Britain, and some relevant recent changes within it. Following this we report on the result of a postal survey conducted to establish the current state of educational practice with regard to teaching design against crime. While it is currently a marginal issue tackled on design courses, there are some notable examples of effective practice, three of which we detail in our section of case studies. Finally, the chapter discusses prospects for embedding crime into design education drawing upon the experience of other issues areas in design, such as design management and ecology. We conclude by summarising the key points of our discussion.

5.2 The nature of British design education

Design Education in the U.K has to a very large degree followed the needs of industry. Until the mid sixties and early seventies, most design skills were developed in colleges of art and design through a model of vocational training. Developing skills and being studio based, the learning derived through the atelier teaching method, i.e. a small group of students working on design tasks being tutored by a designer. This practice continued when colleges were subsumed into Polytechnics in the late sixties. During the eighties there was a growth in higher education numbers and in order to respond to this new situation a change in teaching and learning methods was required. This approach involved more emphasis on the theoretical and historical perspectives on design. Therefore, there has been an underlying trend to develop a contextual and theoretical body of knowledge for use by design education.

Graduates have never been accredited with the professional status that has been attributed to architects or engineers. This lack of professional status may be the result of the disparate manner in which the profession has represented itself. Designers have been characterised not only by their discipline specific skill, but also the sectors in which they operate. There are also a plethora of groups and associations, and although the Chartered Society of Designers offers Chartered Status to designers, it does not offer the level of professional accreditation recognised by other bodies such as the RIBA (Royal Institute for British Architects).

The design courses offered today do have different orientations, there are studio based craft courses, where the emphasis is on designing and making, such as glass, ceramics, jewellery and silversmithing. There are courses whose predominant orientation is design from an industry and professional stance which focus on developing design skills and relating them to industry i.e.

solving product or graphic design problems. The theoretical courses tend to consider the history and contextual aspects of design as well as an understanding of the subject itself.

There are clearly a great number of design disciplines and differing typologies to assist in categorising them. For the purposes of this research we have used the following categorisations. These are not wholly inclusive in terms of the full range of design disciplines, but they embrace those most relevant to crime issues, and were used in the postal survey described in the following section:

Design category	Description	Specific disciplines
Visual communications	Two dimensional design concerned with a range of communication needs and media.	Graphic design, typography, electronic multimedia, illustration, etc.
Architecture	Three dimensional disciplines concerned with the built environment	Architecture, urban design, environmental design
Fashion	Two and three dimensional design concerned with clothing and furnishings	Fashion design, textile design, surface pattern design, knitted textiles, carpet and rug design
Product and industrial	Three dimensional design ranging across industrial systems and products to design for batch and one-off production	Industrial design, product design, furniture, ceramics, jewellery, glass, etc.

Table 5.1 Typology of design disciplines

On examination of the topics or subjects offered in the UK there are a multitude of subjects covered in both breadth and depth. Some of which are very vocational and practically orientated some more theoretical. The design curriculum is influenced both by professional practice, market demands, environmental changes and changes in the educational system. A key question for this inquiry is the extent to which crime has found a place within the curriculum.

5.3 Teaching design against crime survey

In order to gain an overview of UK education practice with regard to teaching design against crime, a postal questionnaire survey was conducted in October 1999. The aim was to identify the extent to which crime-related issues are included in the current design curriculum.

The sample was chosen from 1999 entry prospectuses from all UK institutions offering design courses at undergraduate and postgraduate level. A total of 501 questionnaires were distributed to course leaders. This resulted in 79 completed questionnaire being returned from 36 different institutions – a response rate of 16%. Responses according to groups of design disciplines were as follows:

- **Visual Communications** - 15 completed questionnaires from visual communications, graphic design, typography, illustration and advertising related courses
- **Architecture** - 14 questionnaires from architecture and urban design courses
- **Fashion** - 12 from fashion and textile courses
- **Product/Industrial** - 11 from industrial, product and furniture design courses

Additional responses were gained from specialist or theoretical courses such as photography, design studies and museum design.

5.3.1 Crime reduction, prevention and awareness within design

41% of the respondents reported that crime reduction and prevention was not relevant to their design discipline, 34% said it was, while the remainder was undecided. 71% of architecture respondents thought that crime reduction and prevention was an aspect of their discipline, while product/industrial respondents were in general undecided, with a minority agreeing there was a role for them. The majority of fashion respondents did not perceive that there was a role in crime prevention for them.

Of those respondents who defined a role for their discipline in crime prevention, it was in terms of the following aspects:

The visual communications role

- as an information provider
- to promote awareness of crime prevention using communication techniques
- to increase visual awareness of crime and its effects on victims by raising public awareness
- to achieve this role through advertising campaigns, editorial and digital media

The architecture role

- combating vandalism
- designing features of buildings that allow supervision and natural surveillance of common areas and housing areas through the organisation of the spatial structure and layout of private/public spaces, and through an understanding of lighting, and the choice of materials

- through the use of plants at the location of entrances to and facilities within public open space
- construction and the user attitude to the equipment offered

The fashion role

- in anti-theft technology, the traceability of products, tracking devices
- personal security, through visibility and safety
- for many in the fashion group, it was difficult to see a role for their discipline in crime prevention and awareness, some indicated that they had not thought about it until completing the questionnaire

The product/industrial role

- creating awareness and respect for property and surroundings
- domestic security
- activities which engage people so they do not turn to petty crime
- the design of crime resistant products
- defining the 'user experience' through explicit contextualising of products

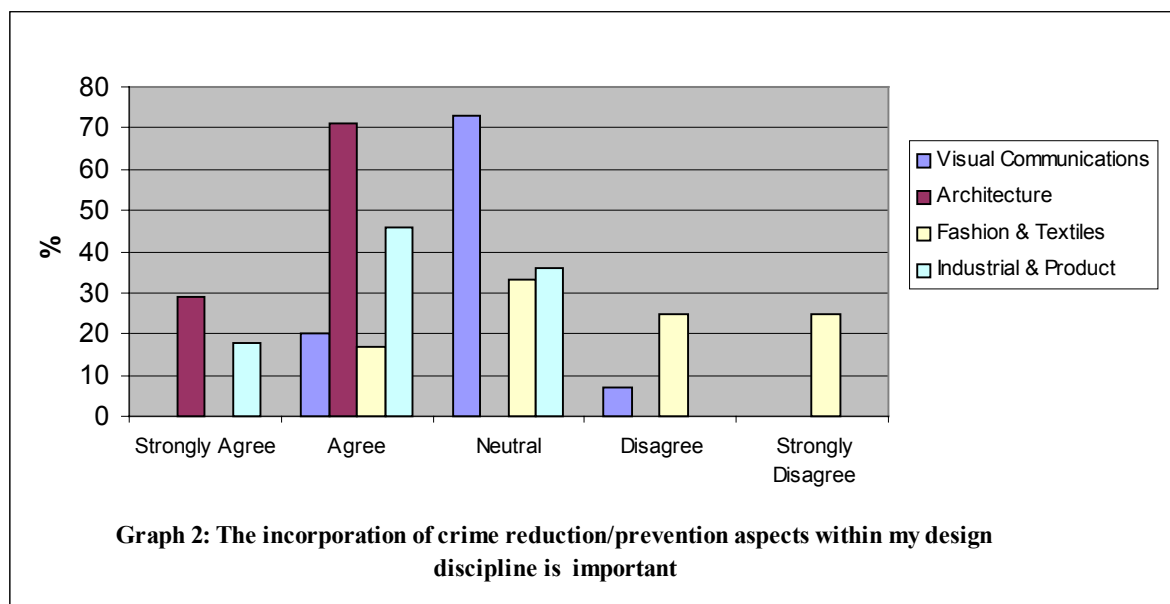
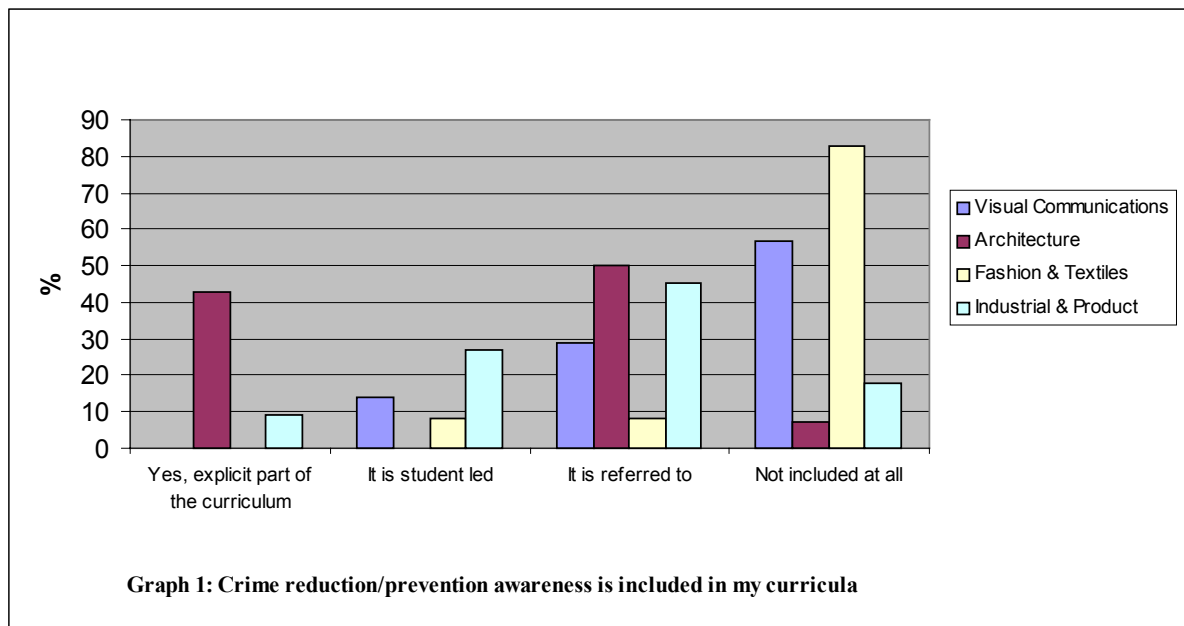
The designer's role in general

- security of premises: urban design with particular reference to inner city living and public realm works
- web/email security
- designing crime prevention into museum and commercial exhibits
- consideration of internal spatial arrangements in retailing, hotels and restaurants to minimise theft
- the selection of appropriate materials and technology to reduce the crime threat
- awareness of security and of the attitudes and perception of the public to physical design and spaces
- to make students aware of how good design can reduce crime: providing information, a framework and an understanding within which design disciplines can approach crime reduction issues
- through television and film - short film segments which highlight crime, publicity through exhibitions on crime prevention

5.3.2 The inclusion of crime reduction, prevention and awareness within the curricula

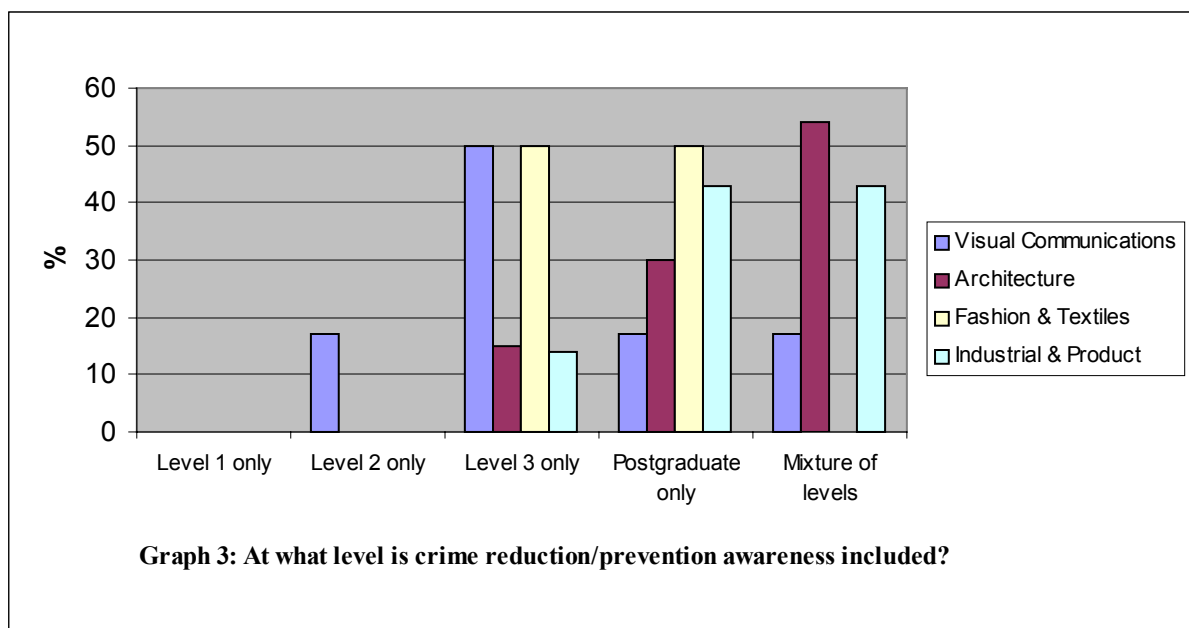
For the majority of courses, crime reduction and prevention awareness was not included in the curricula at all. It was merely referred to in one third of courses.

As Graph 1 illustrates, crime was most likely to be an explicit part of the curricula in Architecture courses. This is in contrast to Fashion in which most stated that it was not included in the curriculum at all. It was also likely to be not included in Visual Communications courses, and only referred to in Product/Industrial.



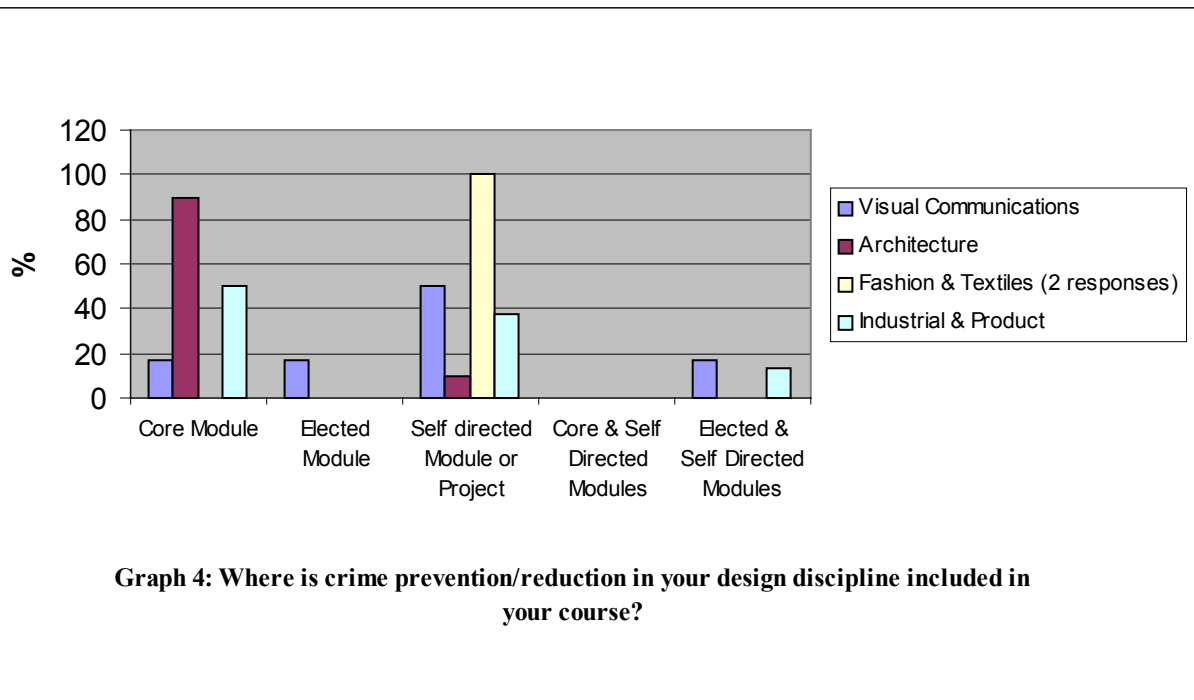
However, despite its general exclusion from the curricula, over half of respondents believed that the incorporation of crime reduction and prevention within their discipline was important, with only very few believing that it was not (Graph 2, on the previous page). Visual communications were generally undecided on this, compared to half of fashion who believe it to be unimportant, whilst all of those from architecture consider that it is important. The product/industrial group believe it to be important or were undecided.

Graph 3 below illustrates the level at which crime was included in the curricula. For courses in which crime was a part of the curricula, it was most likely to be included at either *postgraduate level* or *level three* only. Only one course, in architecture, provided it at all levels (including foundation). It was most likely to be provided at level three only in Visual communications. Only two fashion courses included it at all, one at level three, one at postgraduate. Crime tended to be taught at postgraduate level only on product/industrial courses.



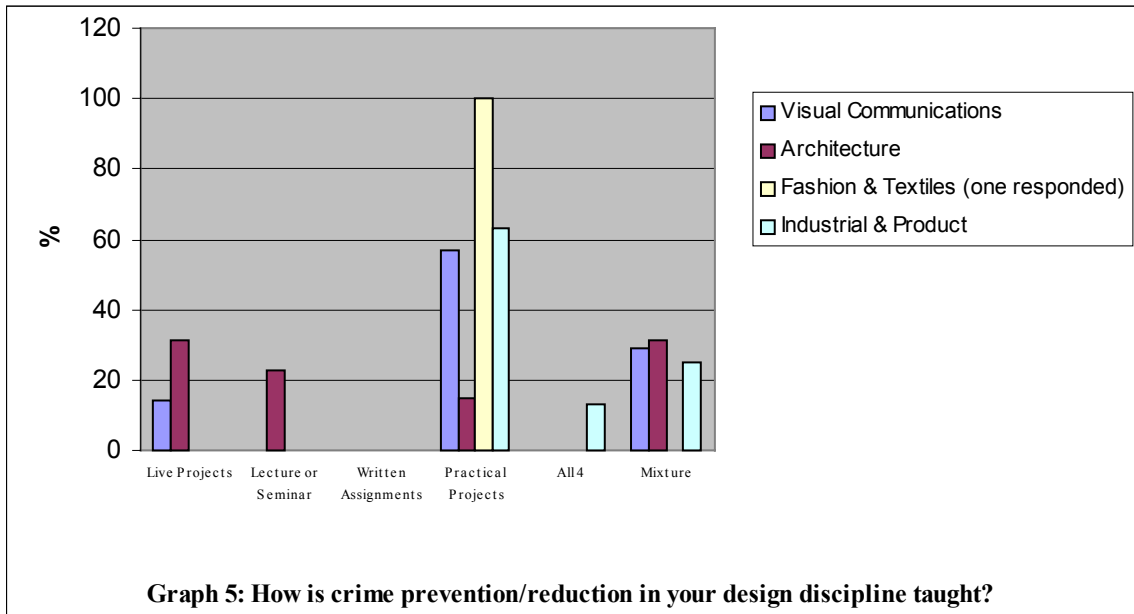
When included within the curriculum, it was likely to take the form of a *core module* for over half responding courses. It was a self directed (student led) module or project for one third, and an elected module for only 5%. For a further few it was offered as both core and self directed modules, or as both elected and self directed modules.

For visual communications, it tended to be mainly offered as a self directed module or project, as shown in graph 4. For architecture courses, it was mainly a core module. For both of the fashion courses which included it, it was as a self directed module. Industrial/product respondents indicated that it was offered as either core or self directed modules.

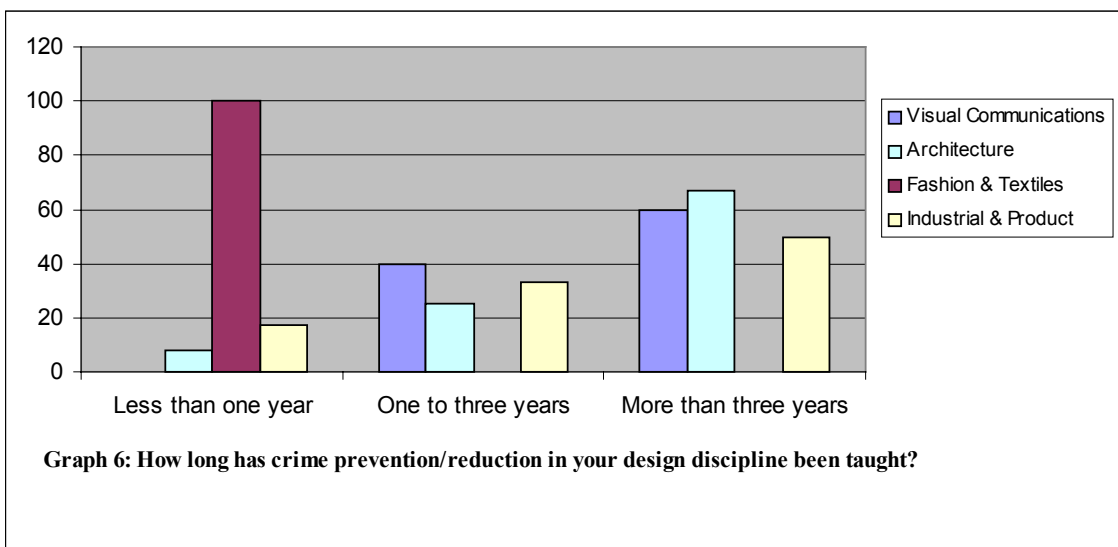


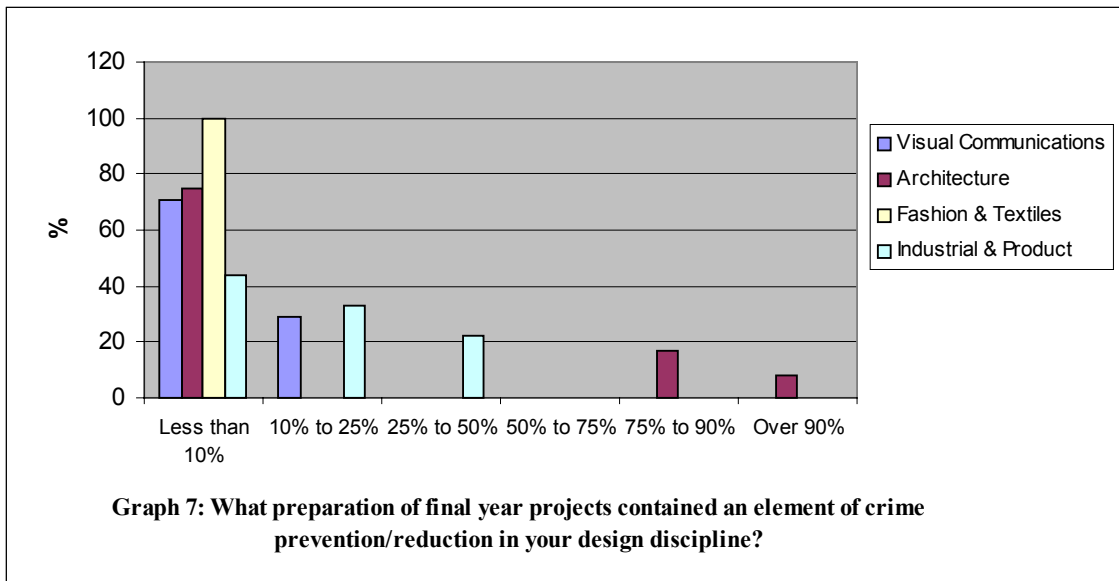
Crime prevention and reduction was taught mainly within *practical projects*. On over half of the courses which included crime prevention, it was taught only as a practical project, and only as either a live project or lecture/seminar in 19% and 7% of courses respectively. No course taught it solely as a written assignment, although a few did include it as written assignments in conjunction with lectures, or included it in all four forms.

As Graph 5 indicates, within visual communications, crime prevention was taught mainly as a practical project, or as a live project. In architecture, it was most likely a mixture of delivery. Only one from fashion group reported it being taught as a practical project. In the product/industrial group, it was a practical project for over half, for the remainder, it was a practical project combined with either lectures or live projects (see Graph 5 below).



Graph 6 illustrates the length of time for which crime reduction and prevention was taught. On over half of the courses that taught crime reduction and prevention, it had been taught for at least three years. For instance, it has been taught for over three years by three-quarters of those from Architecture. The one Fashion respondent who answered this question stated that it had been taught for less than one year.





5.3.3 Final year student projects

Graph 7 above shows that for over half of the courses surveyed, less than one in ten of final year student projects contained an element of crime prevention or reduction. For a further quarter, crime was included in between 10% and 25% of projects, and for one respondent, in architecture, it was included in over 90% of projects. Crime was included in fewer than one in ten of all fashion student projects, in less than one quarter of all visual communications projects, and in less than half of all industrial/product projects.

The respondents were asked to provide examples of final year student project work. These have been categorised into the discipline areas as follows:

Visual Communications projects

- editorial issue based illustration
- neighbourhood watch campaigns
- anti-drugs campaigns
- motoring: road awareness, young drivers, and speed reduction campaigns in conjunction the local police force; drink driving campaigns
- personal safety: campaigns relating to child abuse prevention, violence against women, sexual harassment and rape
- project with the local police force to improve awareness and dialogue between teenagers and the police

Architecture projects

- urban analysis and housing related assignments
- planning exercises in conjunction the local council
- park design
- urban renewal
- local estate issues and solutions, in conjunction with the local police force

Fashion projects

- tracking devices
- electro textiles
- the future importance of mobile phones

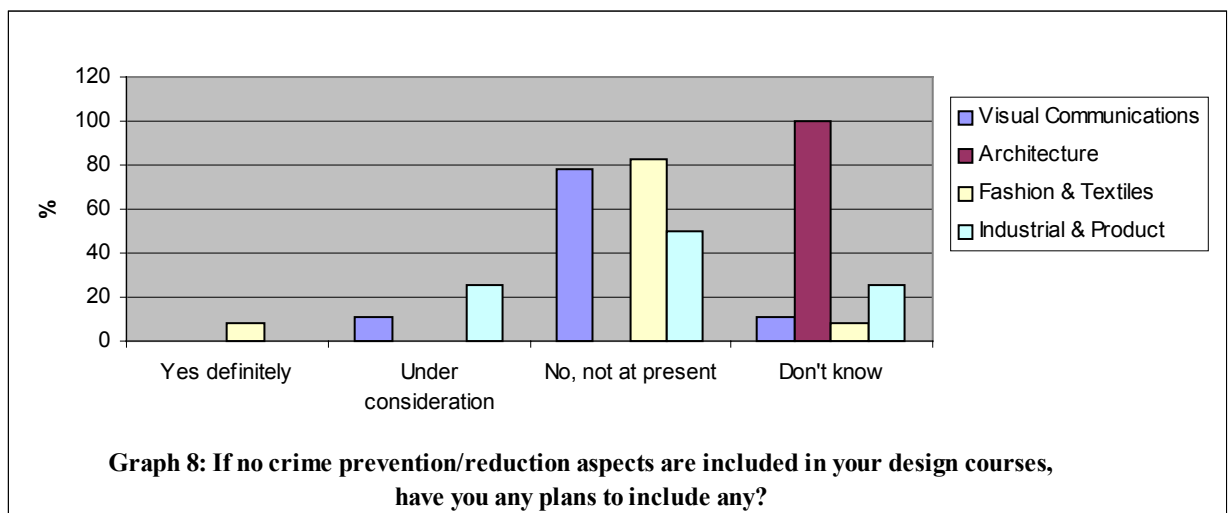
Product/Industrial projects

- bicycles: safety enclosures to cover cycles, cycle safety and tracking systems, cycle stands
- outdoor roadworks cones
- computer security systems
- bus information terminals
- personal safety; personal alarm devices; 'Techno Bra' that monitors heart rate and connects via GPS to security organisations when triggered; garments which include sensitive material which hardens when hit to protect from injuries
- car, boat and domestic door security
- shelters for homeless
- urban 'refuge'/communications post, in collaboration with the police
- security and vandalism in the provision of museum and gallery cloakroom facilities for visiting schools parties, in collaboration with local galleries and museums
- vandalism reduction in a children's play area
- load carrying for wheelchair users for the security of goods and shopping

Design projects in general

- the linking of GIS data to crime location for data analysis
- small scale hotel alarms for guests
- the weapon as fashion and jewellery
- home security through psychological manipulation eg 'the scary garden'
- simple password security on the web
- the sustainability and design of a new civic square

Graph 8 illustrates that for courses which included no aspects of crime prevention or reduction, most (nearly two thirds) had no plans to include it, whilst one in six did not know whether any plans existed, and a further one in six said that such plans were under consideration. Only two respondents indicated such plans to include crime were definite.

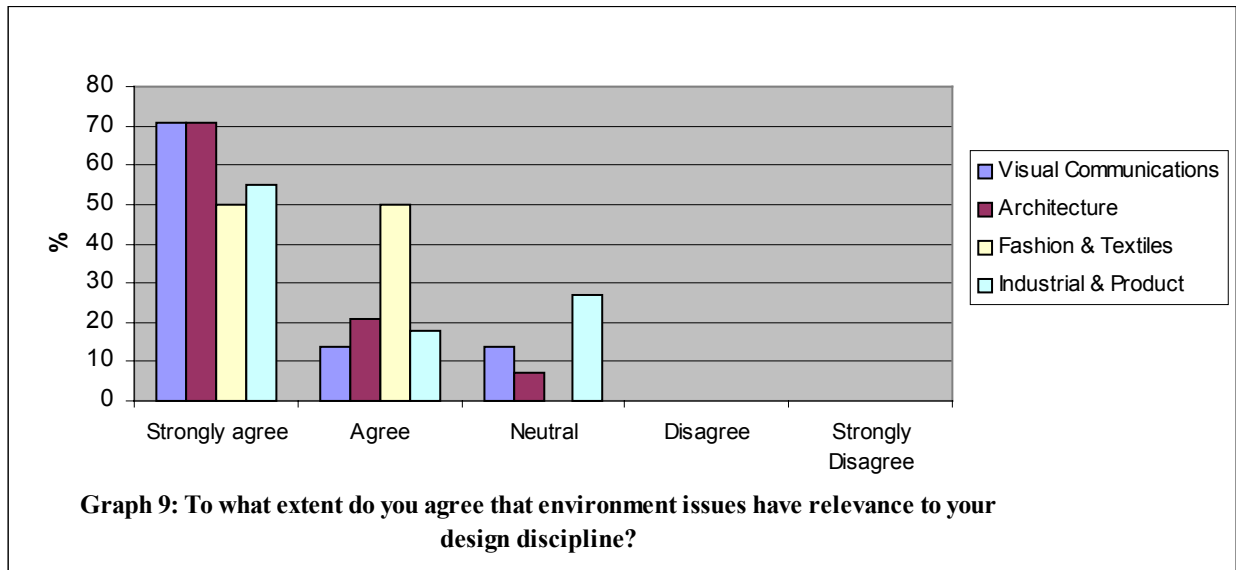


5.3.4 Issues within design disciplines

Respondents were asked to what extent they agreed that environmental issues, demographics, disability and crime had relevance to their discipline, and for how long they had been included in their curricula (if included at all).

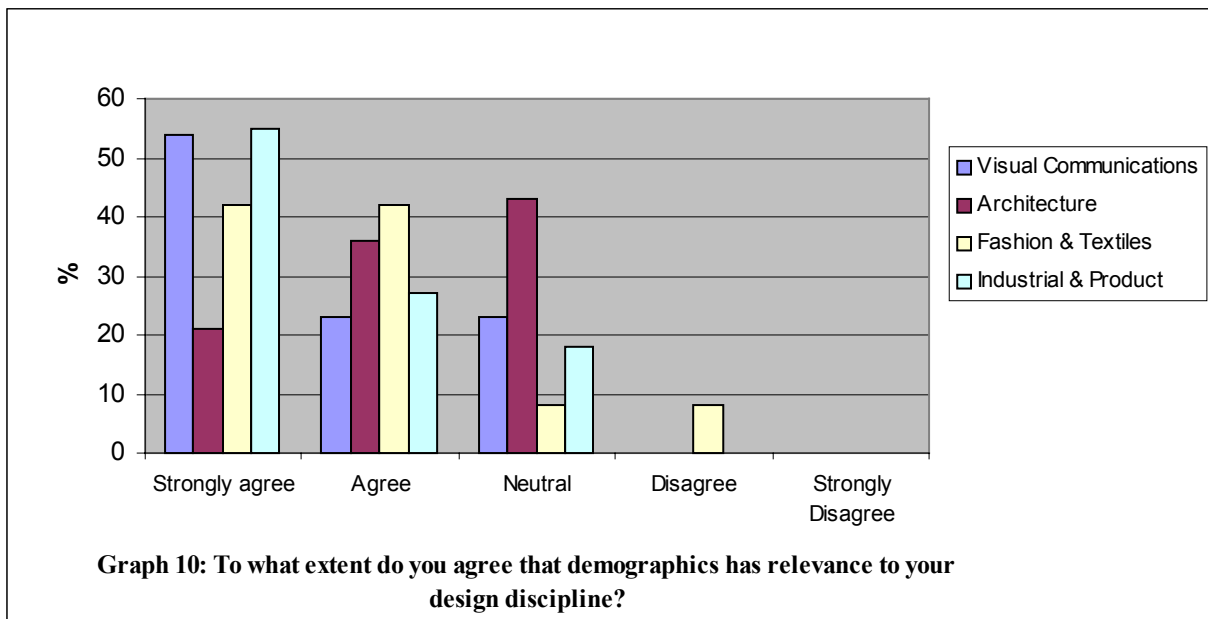
5.3.4.1 Environmental issues

All respondents who answered this question either agreed (two-thirds strongly agreed, one quarter agreed) that environmental issues had relevance to their discipline, or were undecided on its relevance (Graph 9). For courses in which environmental issues had already been introduced into the curriculum, it had on been introduced more than three years ago for almost half. Typically this was on architecture or industrial/product design courses.



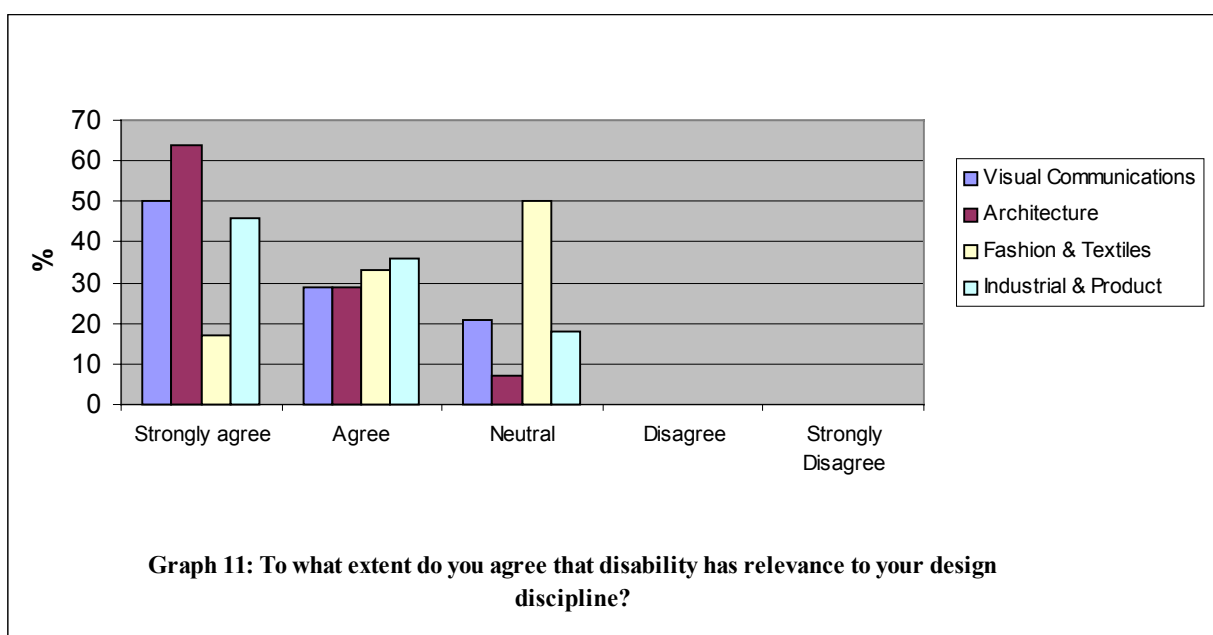
5.3.4.2 Demographics

As with environmental issues, most respondents agreed that demographics had relevance to their discipline. Only two respondents said that it did not (fashion and crafts). The level of perceived relevance was however less strong overall than it was for environmental issues (see Graph 10). Demographics was not included in the curriculum for one quarter of the courses surveyed. It was most likely to be excluded from architecture courses (half excluded it), least likely from product/industrial courses.



5.3.4.3 Disability

Again, most respondents agreed that this area had relevance to their discipline, only one respondent disagreed (from a crafts course). Architecture was most in agreement as to the relevance of disability, followed by visual communications and then product/industrial (see Graph 11).



Overall, one quarter of courses did not include disability as part of their curriculum. Of those which did, most had included it for over three years, one quarter for one to three years. Most likely to exclude disability from their curriculum were fashion courses. Least likely to exclude it were product/industrial and architecture.

5.3.5 Key issues from the survey

- Crime reduction, prevention and awareness are generally not considered as aspects of design, although (with the exception of those from the fashion group) most believe that their discipline has a role to play in crime prevention/reduction.
- Crime is either not included or just referred to in most curricula, if not included, there are in most cases no plans to include it. Crime is most likely to be included and to be viewed as relevant by those in architecture, and has least inclusion and relevance in fashion. Despite its exclusion, most believed that its incorporation within their discipline is important.
- When crime is a part of the curriculum, it is most commonly included at either Level Three or at a Postgraduate level; it takes the form of a core module, is taught within practical projects, and has been taught for over three years.
- Crime is an aspect of less than 10% of final year student projects on most courses. It has its greatest inclusion in projects of Architecture students, lowest in fashion projects.
- Environmental, disability and demographics issues are perceived as of greater relevance to design than crime.
- Considering that most of those course leaders who responded to this survey believe that design does have a role to play in crime prevention, it is perhaps surprising that there should be such a lack of inclusion of the topic in the design curricula. Interestingly many of the respondents made requests for more information and literature, and made comments about not previously having thought about the matter. This leads us to consider that raising the awareness and disseminating information about crime reduction and prevention in relation to design would encourage more course leaders to include some aspects of crime into their curricula as they have with environmental and social issues.

5.4 Case studies

A major focus of the research was to investigate the level of inclusion of crime issues into design education at present, the methods employed and its significance to the overall educational culture of courses. Courses at three institutions were identified as having an active interest in design against crime, and course leaders were interviewed to ascertain how the topic was addressed, how it came to be part of the course, problems encountered in dealing with the subject, and examples of student and other research work which incorporated this.

5.4.1 Case study 1: Central Saint Martins College of Art and Design

5.4.1.1 The educational context

Central Saint Martins College of Art and Design, a part of the London Institute, has been working in the area design against crime for over two and a half years. Their interest in designing against crime started with an approach through Safer Cities. The Safer Cities Programme, established in 1988, had three primary aims: to reduce crime, to reduce the fear of crime, and to establish safer cities to allow improvements in economic enterprise and community life. This has focused on crime prevention schemes in selected cities, through adapting the built environment. Reports indicate the scheme has been successful in many areas.⁷⁷

Safer Cities wanted to include some design input into its work with police and crime reduction, and so undergraduate and postgraduate students from Product Design, Graphic Design and Communication Design courses completed a six-week project looking at handbag and luggage theft. These projects involved staff training, poster campaigns, and aspects of interior design, which could help prevent crime in the first instance or build up crime prevention awareness. Safer Cities was pleased with the outcome, both in terms of the breadth of ideas, and the number of ideas, many of which were implemented immediately as a two-week exhibition and a series of informal talks resulted, achieving funding from P&O.

5.4.1.2 The Capital Route project

In 1997 many of the participants in Safer Cities became involved with the Capital Route Partnership. The Capital Route Partnership objective was to look at crime in the linear route through Westminster from Piccadilly Circus, through Leicester Square to Covent Garden - dubbed the 'capital route'. Between Easter 1997 and Summer 1998, Central Saint Martins students became involved, collaborating with a number of the Capital Route Partnership's working parties which linked local authorities, transportation and policing, and included

⁷⁷ Tilley, N. (1993). The prevention of crime against small businesses: the safer cities experience. London, Home Office, Police Research Group; Travis, A. (1994). Crime Prevention: concern for the future. *The Guardian*: p29.

academics from Product, Communication and Industrial Design courses, later expanding to include their new multi-discipline course, BA Arts and Design. On this new course, there are three pathways - Spatial Design (which includes the Built Environment and Architecture), Media, and Artefact (which includes new technologies and making processes). Students on this course focus on an area after completing the first year. This course brings in psychologists, anthropologists, and arts in the environment - all of these different influences gradually feeding into the broad curriculum. Such a course was an ideal location for crime-related issues to be developed.

Central Saint Martins drew up plans for a three-year study looking at the evaluation of the 'capital route' in Westminster, and applying it to other major European cities. Despite being unable to get funding for the study, they did take an exhibition of student work to Malmö, Sweden, where they worked with the Mayor of Malmö, city architects, planners, and companies, and set up a five week exhibition there. They also held a one-week business seminar programme with the industries in the city about future re-developments of the city. Following this successful collaboration CSM has developed links with Utrecht and Barcelona.

The Capital Route Partnership (now Capital Link Partnership), has remained a significant element in Central Saint Martins work. Despite the Product, Communications and Industrial Design courses recently loosening their formal ties with the Partnership the College is still being approached by companies involved in product security, CCTV, furniture, and lighting companies with requests for students and staff to undertake projects. Therefore students can now pursue these individually depending on their own area of interest, but this activity is not a core course activity. Interesting crime reduction and security issues have featured recently in a number of major final year design projects. Areas that have been covered in the projects include violence against the person, reducing vulnerability and fear of crime, bicycle security, vandalism, considerations of street furniture design, awareness of crime through graphic design and road rage. Whilst crime reduction is being considered in a number of projects, there still remains some difficulty in encouraging the majority of students to consider the issues within their work.

Unlike the other courses, BA Arts and Design continues to work with the Partnership. Together with Capital Link it has obtained further funding of £25,000 for a Cranbourne Street Pilot study, which looked at the Leicester Square tube station and the street opposite (Cranbourne Street). The pilot study was completed with the City of Westminster in March/April 1999, and was presented at the House of Commons as an exhibition/public consultation. This exhibition linked into some research on lighting and crime, which CSM was working on. These projects involved around twenty separate studies by students, and is culminating in a detailed planning application.

5.4.1.3 Methodology and recent developments

The design and research method which Central Saint Martins uses is to look at the environment of the city - the space between the buildings and what happens there. Their process is called the 'Hard City/Soft City'. The Hard City is the current situation where the city is seeking to control itself, policing itself and the traffic controls flow, and use CCTV surveillance. The Soft City version is understanding the mechanisms within the city, whilst it needs a degree of control and overseeing, perhaps the natural forces that flow through the city (pedestrian and traffic flow) could work with them rather than against them. They are looking at street furniture, lighting, and the landscaping of spaces, and linking this to the buildings.

From September 1999, CSM established a new enterprise called Design Laboratory, which will utilise the design against crime research in a graduate student research and consultancy centre.

5.4.1.4 Issues arising from the case study

Through relationships with local groups, Central Saint Martins has been able to involve students in crime reduction/prevention programmes. However, continued involvement is sporadic and further involvement will require either funding or some other form of motivation for both students and course leaders. Alternatively the development of a specialist postgraduate research and consultancy such as the Design Laboratory will offer a more focused and formal introduction of crime related issues into the design education domain.

5.4.2 Case study 2: Nottingham Trent University

5.4.2.1 The educational context

The Design Department at Nottingham Trent University (NTU) runs a number of undergraduate and postgraduate courses covering a wide range of design disciplines. The Design Studies course, which attracts between 50 and 60 students each year, provides an overview of the design process across the spectrum of design disciplines, and aims to develop competence in design management. A compulsory part of the course is Communication in Context, taught by staff from the Social Science Department, which addresses the role of social science in design, and the social context within which design operates. This makes up one sixth of the course during the first two years of study.

The first year of the course explores a range of issues where social science and design cross over, seen as being relevant to the students own lives. Second year work is geared more towards design projects having a social science component. Teaching and learning methods in the first and second years include illustrated lectures, workshops, student led seminars, “show and tell” sessions and student presentations. In the third year students are mostly involved in self initiated projects, with self generated research, which could include aspects of the communications in context course, such as ‘lifestyle and new technology’, and ‘lifestyle and social responsibility.’ Further information is provided on design and crime on a web site which was set up, after students experienced difficulty in accessing relevant information.⁷⁸

5.4.2.2 The design and crime taught component

Design and crime is taught as part of the course by Hugh Miller, a lecturer in the psychology division of Social Science, whose interest in design and crime stemmed from previous involvement in the Crime and Social Research Unit at NTU. Crime is mentioned in a number of areas throughout the course, with one week spent specifically on design and crime during the second semester in the first year. The course begins by looking at the criminology point of view, defining what is meant by crime, victims and criminals. Crime statistics and crime reporting are mentioned, and how this affects people perceptions of crime. Crime is introduced as something which affects all social backgrounds, and as a factor which keeps the economy going, from looking at the distribution chain of stolen goods, to fraud and white collar crime. Two main

⁷⁸ <http://www.ntu.ac.uk/soc/psych/miller/crime.htm>

design strands are covered in the course, with a 50/50 split between the design of manufactured products and the architectural side.

For manufactured products, the idea is introduced that people in some situations are more vulnerable to crime, for example, students going to university may expect their property to be stolen, and moderate their behaviour to accommodate this. From this point of view, “crime becomes an aspect of consumer choice, and security becomes a design issue in itself”. The importance of designing in security rather than having add-on features is discussed, and also what makes products vulnerable to crime, explaining that “the most theft resistant thing is something that can’t be sold on.” The problem for designers is designing something that is desirable to the consumer, but not to thieves. Benefits to insurance companies, manufacturers (providing replacement goods) and designers are also mentioned within the course.

The other area of design which is studied is building and estate design, which stems originally from working with the Crime Prevention Officer in Nottinghamshire Police involved in the Secured by Design initiative. Information and examples provided by the CPO are used in lectures to demonstrate how environmental design can affect the opportunity for crime. For example, designing in climbing aids to get over walls - one 8ft wall had the corner finished with bricks which were overlapping rather than flush, which looked attractive, but “made a nice little ladder”. Time is spent discussing the small details which had been designed in with little thought to the consequences in terms of crime. Other aspects considered include louvered windows, lock and hinge positions on doors cul-de-sacs, providing easy access and escape routes, secluded paths, and ideas about defensible space. Increasing privacy also leads to an increase in vulnerability.

In addition to this, urbanism is covered by other staff members during the first 3-4 weeks of the second semester. Crime related issues make up about 10% of this course. This involves a neighbourhood study of different areas of Nottingham, to look at the design aspects in areas with different social mixes, and comparison of residential and commercial areas. The aim is to look at designed objects in the environment, and the effect design has on different neighbourhoods.

Areas studied include poorer areas where signs of crime are apparent, and wealthier areas, where “crime comes in round the edges” - there are more overt signs of crime prevention measures being taken by residents in those areas. The example was given of one area where the residents closed themselves in, with high fences marking property and people protecting their property with dogs and using communication devices. The students were free to wander round this area, were not approached by anyone questioning what they were doing in the vicinity. Other areas were much more open, with residents having a clear view of surrounding properties - in this situation residents were aware of the students being there, and approached them to find out the purpose of their visit. Other issues that were brought to mind included how the students would feel about leaving their cars in a particular area, and what contributed to their thoughts about assessing the situation.

5.4.2.3 Student projects

Whilst the crime lectures generate some interest amongst the students there is very little follow up in terms of the students introducing crime issues into their own work. Over the lifetime of the course, few essays have been undertaken which had addressed the subject in the second year, and no third year projects have focused on crime and design. All the other areas studied in the Communications in Context module have been actively pursued by students in their third year work, but not crime, and no explanation could be offered as to why this was the case. Some of the research work carried out on design for the elderly has interacted with crime related aspects of design, such as retrofitting security devices for elderly people.

5.4.2.4 Issues arising from the case study

A number of issues arise from this case study, as outlined below:

- Whilst students show interest in the teaching of design against crime at NTU, this is not sustained in self initiated project work.
- Difficulty in accessing information about crime issues relevant to designers led to the development of a web site.
- The course offers the opportunity for crime reduction professionals to work directly in educating designers.

5.4.3 Case Study 3 : University of East London

5.4.3.1 The educational context

The University of East London's (UEL) Department of Industrial Design has been involved in a European Government Funded Study called MIMIC (Mobility and Intermodality and Interchange) which analysed the perceived barriers to people using public transport. This work focused specifically on the critical success factors which govern the demand for advanced public transport interchanges.

There were seven research groups in total: the University of East London, and others including Copenhagen, Rome, Bilbao, Tempura, Warsaw and a group in Germany. Focus was placed on 7 key issues:

- Logistical and Operational
- Psychological
- Institutional and Organisational
- Physical Design
- Local Planning and Land Use
- Economics and Social
- Information

5.4.3.2 The research project

UEL research focused on the interchange at Stratford in East London which, at the time of this study, was under redevelopment. The existing interchange provided an interesting case study due to the high level of crime, poor condition of existing facilities as well as the location itself. Stratford is a diverse community with multi-cultural, mixed-age groups, and a high level of unemployment, particularly amongst young males. The condition of the environment at the

existing Stratford Interchange was causing users to purposely avoid using it and travel to surrounding stations. In effect it was not acting as a public transport interchange but as a disincentive to use public transport.

The research was managed by a steering group which included representation from the Local Authority, London Transport Planning, London Rail Transport Executive Committee and Docklands Forum, which represents the views of the local community and user groups.

Focus groups were undertaken to gauge public opinion as well as interviews of the key stakeholders involved in the organisation, operation, planning and sponsoring of public transport. The focus groups engaged both typical local users and local women's groups who were consulted to discuss their views on crime in relation to gender, which was an important factor.

The research aimed to break down both the perceived and physical barriers. Visual analysis of the interchange attempted to deconstruct the site to determine issues such as how easy it was for users to get from A to B and what problems were faced by users in the process.

One of the major findings was that it was not sufficient to just design the interchange and view security issues as a secondary set of concerns. The interchange has to be designed from a security perspective. The use of CCTV was considered by users to be an 'add on' feature and not a solution in itself. Use of 'safe areas' where the designated space is covered by a CCTV camera, were not felt to be preventive measures. Even though activities in that area are being filmed, recorded and may lead to prosecution, the person can still be attacked, and the victim still has to go through a traumatic ordeal. CCTV and its use of it was seen only as a deterrent and not a cure.

The general feeling was that it was not just the interchange that needed focus but it was the way in which the interchange interacted with the surrounding area. In Stratford, the feeder routes into areas such as the local shopping centre were found to be more threatening to users than the actual interchange itself. It was not enough to design the interchange as an 'oasis of safety' when the area users had to go through to get to it was unsafe. A redesign of the whole surrounding area was needed, making the interchange and the local community seamless.

Another major issue highlighted by the research was that this type of work has to be undertaken from a collaborative perspective with the involvement of all the stakeholders and the local community. During this study there was a large amount of consultation with the London Transport Police (LTP). Research indicated that prior to the study and the design of the new interchange, the LTP did not actively liaise with Architects and Designers of rail environments. The LTP now actively works with Architects and Designers to ensure good Crime Prevention measures are planned prior to the brief of a project being written.

Whilst recognising the efforts made by the Architects in a difficult situation, one of the major criticisms of the Stratford re-development was the way in which the project was put up for tender. The tender was presented as a competition which resulted in the Architects having only having two weeks to design and prepare costings for their proposals. This resulted in the designers driving plans that were fairly unsubstantiated in respect to knowledge of the local community and their needs. Once the design had been selected and a costing had been set, there was a reluctance to change aspects of the design due to the inherent added cost of change. This was found to be a common problem throughout the European Partners.

The research also indicated that operating companies often prefer to have 'off the peg' solutions in regard to crime. The solution for the past ten years has been CCTV. This research indicated that the public require more effective solutions. Issues like crime to be addressed from a holistic perspective. Users felt that they often felt isolated and that there was a need for a busy 'human' environment, with visible staffing and the inclusion of more social areas to encourage well populated areas which in turn would discourage crime. They felt that technology was not assisting the problem. The use of help points, Automated Ticket Machines, and CCTV were diverting the problem somewhere else and that their needs had to be addressed at a local level in a humanistic way.

5.4.3.3 Issues arising from the case study

This case study differs from the previous two in that it is primarily a research project rather than being primarily an educational vehicle. However, it does demonstrate the considerable potential of industrial design as a research discipline to address a range of issues that integrate environmental and industrial design issues, and explore relevant user research methods.

5.5 Embedding crime into design education

5.5.1 Introduction

This section of the report draws on a range of research to suggest how crime awareness and prevention could be embedded within design education. Interviews were conducted with educators who have succeeded in raising the profile of other ‘social issues’ within the design curriculum, namely demographic change and ecology. The involvement of two of the authors in activities such as the CNAA/DTI Managing Design Initiative has also been drawn on. The aim here is to identify lessons that can be learned, and the scope that exists for mutual support in extending the design curriculum.

5.5.2 Design education: incentives for change

We should begin by noting that design disciplines, by their very nature, are in a constant state of change and renewal, perhaps more so than other academic disciplines. As a CNAA inquiry into design education in 1992 observed: “evidence suggests constant revisions in course content from year to year in many institutions”.⁷⁹ This is to ensure the continued relevance of content and the employability of graduates.

Design education is perhaps more visible than other disciplines, providing major incentives to maintain contemporary relevance. In no other disciplines is the work of final year students made public through degree shows, culminating in the high profile ‘New Designers’ show at London’s Business Design Centre. This is as much a showcase for design courses as it is for the graduates themselves. Furthermore, design is unique in the well supported and profiled national awards - including New Designers itself, the Royal Society of Arts bursary scheme, the Starpack student packaging design prizes and many others. Again, this highlights the quality of design thinking, knowledge and relevance that courses equip students with. All of this fosters a sense of competitiveness between courses, as much as between students, encouraging change and content enhancement.

⁷⁹ Council for National Academic Awards, Committee for Art and Design (1992) “Technological change and industrial design education”, p.26

Live projects are an established and common teaching method in design education, which further reinforces pressures towards content relevance and revision, with an employer providing a learning framework for students with the expectation that they bring awareness of contemporary issues, skills and knowledge in design to the project.

Public visibility, close links with industry and the need to maintain educational relevance in a fast changing context are the key forces which promote change in design education. Below we examine three cases of specific change in design education from which some lessons on the dynamics of change, particularly in terms of course content, can be drawn.

5.5.3 Design into business - business into design

In 1984, a joint CNAA/DTI report was published setting out a proposed curriculum for introducing design awareness into postgraduate management courses.⁸⁰ This initiative was launched following a number of studies which identified industry's failure to understand and management design as a critical factor in Britain's poor competitive position. A related strand of this initiative was support to extend the teaching of design management into undergraduate business studies programmes and, via business awareness programmes, into courses delivered at design schools. Research at the time suggested that business and management skills were poorly integrated into design courses and that there was significant scope for strengthening this part of the curriculum.

Following the report, six institutions were funded to develop pilot schemes and teaching materials for design management courses, in which the HE institution was paired with an employer. Two authors of this report were involved in the pilot project which paired Staffordshire Polytechnic with GKN Technology. The authors also adapted some of the teaching material for use on undergraduate design courses. This pilot scheme can be viewed in many ways as a defining moment for design management education in Britain, connecting design educators with the training needs of managers, and supporting the development of teaching material in design management which simply did not exist until then.

By 1990, some 3,500 students were estimated to have completed courses which had benefited from the CNAA/DTI initiative. Its longer term impact has not been assessed, but should perhaps be viewed as catalytic in transforming design management education from a highly peripheral and small field of management training into an educational discipline with the following features:

- MBA programmes in Design Management offered at three UK Universities.
- MA programmes in Design Management offered at eight UK Universities.
- Large undergraduate programmes at Staffordshire and DeMontfort universities and West Surrey Institute of Art and Design.
- BT as main sponsor of the annual Design Management award at the New Designers exhibition in London, together with RSA Design Management bursaries.
- Business studies and design management now integrated within most undergraduate design courses, linked to entrepreneurial education.
- An increasing range of teaching materials and case studies provided by the US-based Design Management Institute.

⁸⁰ Council for National Academic Awards (1984). "Managing design: an initiative in management education" *the 'blue pinstripe' report*).

A related development in the 1990s has been the emergence of Design Studies which draws on design management, design practice and cultural studies in design to develop broad based degree programmes. These are in evidence at Goldsmiths College together with the Universities of Salford, Nottingham Trent and London Guildhall.

Courses in design management and design studies themselves provide excellent opportunities for addressing issues of crime prevention and awareness, as one recent study has suggested: “The curriculum at design-school level is beginning to explore a broader range of social, cultural and ethical issues in relation to design management and is less obsessed with the behaviour of the corporate organisation.”⁸¹

The example of design management education provides us with the following lessons:

- Design education’s ability to adapt and apply new disciplinary approaches within its core curriculum over a relatively short period.
- The significance of the CNAA/DTI project as a catalyst for more widespread change.
- The new opportunities provided for *design against crime* teaching within design management and design studies.

5.5.4 Design and the environment

At the time the CNAA/DTI pilot projects were seeking to test new methods of teaching design management, another issue was edging its way towards the design curriculum. Within a decade eco-design would be part of the core curriculum of most design courses, driven in part by legislation, such as the 1995 Environment Act.

Environmental issues find their way into design courses in a variety of ways. On a packaging design course, for example, the tightening legislative context is an issue that must inform the design process. Across packaging and industrial design courses, new methodologies such as lifecycle analysis are introduced to students as a means of design addressing all the requirements of the product lifecycle. In craft disciplines, the use of recycled and found materials has led to new creative and aesthetic directions and, according to the Financial Times at least, one of the most successful craft exhibitions of recent years.⁸²

A critical challenge that faced educators in the early 1990s, as the environment became more important and captured the creative imaginations of students, was the paucity of teaching material, as one of the authors of this report has argued elsewhere.⁸³ There is perhaps a misunderstanding that design education, as a predominantly project-based form of learning, can simply embrace any new issue or subject with ease. As one head of department has explained: “A project is a vehicle to apply and test knowledge, not a vehicle to acquire knowledge from scratch”.⁸⁴

⁸¹ Morris, L. , Rabinowitz, J. and Myerson, J. (1998) “No more heroes: from controllers to collaborators.” *Design Management Journal* 9(2): 22-25

⁸² Crafts Council (1996). “Recycling: forms for the next century”, *exhibition at the Crafts Council Gallery*, London, Feb-April.

⁸³ Press, M. (1996). “Research for eco-design: the challenges for design education.” conference paper, *Material World II: ecological textile design conference*, Textile Environmental Network, Birmingham Institute of Art & Design, 12 Nov

⁸⁴ Council for National Academic Awards, Committee for Art and Design (1992). “Technological change and industrial design education.” p.39

There was a need for texts, case studies, exhibitions, video material and research data that could be used for teaching. And, of course, there was an important need for staff development in the form of conferences, networks and publications so that tutors could make use of the increasing material. Perhaps one development that accelerated its integration into design courses has been the internet, and access to dedicated eco-design sites by tutors and students.

Despite considerable progress by courses and their staff, it is perhaps still the case that students have a higher awareness of eco-design issues than their tutors. This is the view of Emma Dewberry of Goldsmiths College, which runs one of the country's few dedicated degree courses in eco-design.⁸⁵ The course has been running since 1996, with an average of 12-15 students on the course each year. Dewberry is part of a team promoting the integration of eco-design into the whole design curriculum rather than having it as a separate module or course.

According to Dewberry, award schemes operated by the RSA and D&AD have been useful in raising awareness of the issues, and providing incentives for eco-design to find a place in project work. Inviting key stakeholders and those already expressing an interest to forums to discuss the issues also plays a useful role in creating an educational network which supports and promotes the issue.

The experience of eco-design provides some instructive lessons for *design against crime*:

- The development of teaching materials and staff development support were crucial in shifting eco-design more centre stage in design courses.
- Inspiring exhibitions and content-rich websites have contributed to a rising awareness and involvement by students.
- Awards and competitions both raise awareness and provide an incentive for inclusion.
- Discussion forums and debates with stakeholders and interested educators can prove valuable in creating an educational community and network around the issue.
- The key long term challenge is integration within the core curriculum rather than marginalisation in add-on modules.

5.5.5 Design for ageing

In 1993, at the same time as eco-design was beginning to find a place on design courses, an exhibition and seminar took place at the Royal College of Art (RCA), entitled 'Designing for our future selves'. Its concern was the demographic shift which will, within ten years and for the first time in human history, see the over 50s become the largest age group in the populations of advanced industrial economies. This is set to have a profound impact on all areas of design. With support from the UK Government, the Royal Society of Arts, the Helen Hamlyn Foundation and various industrial sponsors, the exhibition and an accompanying publication provided a vivid and powerful message of the need to embrace this change on the part of professionals and educators.

Seven years later, the RCA-based Helen Hamlyn Research Centre spearheads research in this field, disseminating research and teaching materials to practitioners and educators through conferences and a comprehensive website. A number of projects have been undertaken within the Centre which incorporate crime reduction features, as the elderly are often more vulnerable to crime, or perceived as being more vulnerable.

⁸⁵ Interview, 24 November 1999

Jeremy Myerson, Director of the Centre, attributes its success to the continuing work with users, and suggested that this may be a good approach to take with the crime research.⁸⁶ Through working with users, their behaviour can be observed, and design adapted to accommodate this.

Design for ageing has been included with increasing frequency in the design education curriculum over recent years, and appeals to the designer having a positive effect of society as a whole, in particular, an ageing population. In an interview for this research, Myerson commented that this enables “the designers to cope with their social conscience.” He accepts that while crime has received very little attention in design, it is a topic which needs to be addressed, and has strong parallels with the design for ageing research, in terms of teaching social awareness to design students, and targeting similar consumers.

With a well visited website, high profile research featuring design project exemplars, and RSA awards that focus on the issue, the Helen Hamlyn Research Centre has succeeded in developing a vigorous community of educators around the country that have embedded ageing within design curricula and empowered their students to tackle the issues involved. Some of the specific lessons we can draw from this include:

- Ageing is a design issue with strong parallels and some similar concerns to *design against crime*, suggesting strong potential for collaboration and mutual support.
- The need for design exemplars, networking activities and on-line resources is further reinforced.
- An approach based on user research could be explored further.

5.5.6 Prospects for teaching design against crime

In the preceding sections we have examined how three ‘new issues’ have found places in design education. What is notable is that they emerged and were embraced in a relatively short, but similar period of time - superficially, then, an impressive achievement. But in assessing design education’s openness to change and new directions, the following developments since 1985 should also be taken into account:

- The emergence and development of CAD systems and methodologies effectively reshaping all design disciplines, requiring radically new skills and knowledge, and now fully integrated into the mainstream of design education.
- The introduction of new specialist design courses in electronic multimedia.
- Rapid advances in material science and manufacturing systems which have been integrated within design courses.
- Shortened development cycles and the associated introduction of multidisciplinary team working in professional design, which has required a wholly new emphasis on team working and communication skills in education.
- Widespread introduction of entrepreneurial projects in design education to equip students with the skills needed for flexible patterns of employment and ‘portfolio’ working.
- A fundamental shift in teaching methods to deal with increased student numbers and to enable student centred learning.

⁸⁶ Interview, 22 November 1999

- The introduction of a new research culture into design education and its adaptation to the requirements of a range of disparate disciplines.

There can be few other disciplines that have had to adapt to such a radically fast changing context, and which have done so quite so readily and effectively. We make this point simply because it demonstrates design education's ability to constantly adapt, renew, and meet new challenges. This suggests that initiatives to strengthen crime awareness in design education have strong prospects for adoption, to promote change and to further policy objectives.

5.6 Key issues and conclusions

- Design education provides diverse and relevant study and research opportunities that could offer great scope for addressing crime issues, thereby enhancing our research base in this field and providing essential awareness of issues and approaches for future designers.
- A survey undertaken for this research suggests that crime reduction, prevention and awareness are generally not considered as aspects of design, although most educators believe that their discipline has a role to play in crime reduction.
- Crime is either not included or just referred to in most curricula. Crime is most likely to be included and to be viewed as relevant by those in architecture, and has least inclusion and relevance in fashion design. Despite its exclusion, most believed that its incorporation within their discipline is important.
- When crime is a part of the curriculum, it is most commonly included at either Level Three or at a Postgraduate level; it takes the form of a core module, is taught within practical projects, and has been taught for over three years.
- Crime is an aspect of less than 10% of final year student projects on most courses. It has its greatest inclusion in projects of architecture students, and its lowest in fashion projects.
- Currently, environmental, disability and demographics issues are perceived as of greater relevance to design than crime.
- Responses to the survey suggest that raising awareness and disseminating information about crime reduction and prevention in relation to design would encourage more course leaders to include some aspects of crime into their curricula, as they have with environmental and social issues.
- The case of Central Saint Martins College of Art and Design provides one model of how crime can become a part of the design curriculum, motivating and involving students. In this particular case, external funding and a live context for work was an essential feature. The development of a specialist postgraduate research and consultancy centre at the College will offer a more focused and formal introduction of crime related issues into the design education domain.
- At Nottingham Trent University there has been a more formalised introduction of crime into a design course. However, whilst students show interest in the teaching of design against crime at NTU, this is not sustained in self initiated project work. There is also difficulty in accessing information about crime issues relevant to designers.
- Recent years have demonstrated that design education has the ability to adapt and apply new disciplinary approaches within its core curriculum over a relatively short period. External

interventions can be crucial in this, such as the CNAA/DTI managing design project which acted as a catalyst for more widespread change.

- Considering the introduction of eco-design and design for an ageing population into the curriculum, the following observations can be made:
 - The development of teaching materials and staff development support were crucial in shifting eco-design more centre stage in design courses.
 - Inspiring exhibitions together with content-rich websites have contributed to a rising awareness and involvement by students.
 - Awards and competitions both raise awareness and provide an incentive for inclusion.
 - Discussion forums and debates with stakeholders and interested educators can prove valuable in creating an educational community and network around the issue.
 - The key long term challenge is integration within the core curriculum rather than marginalisation in add-on modules.
 - Ageing is a design issue with strong parallels and some similar concerns to *design against crime*, suggesting strong potential for collaboration and mutual support.
 - The need for design exemplars, networking activities and on-line resources is further reinforced.
 - An approach based on user research could be explored further.

6 Key Findings and Recommendations

This final chapter contains the conclusions and recommendations of our inquiry into the current state and future prospects of *teaching design against crime*. Firstly, it summarises the main findings of our research, which focussed on identifying the current level of practice, together with the opportunities and barriers that exist for its future development. Second, it sets out our recommendations which, while concerned primarily with educational issues, go beyond this specific remit in addressing wider issues of design against crime.

6.1 The challenge of knowledge and incentives

We begin our summary by reiterating a point made in Chapter 5.5.6:

“there can be few other disciplines that have had to adapt to such a radically fast changing context, and which have done so quite so readily and effectively. We make this point simply because it demonstrates design education’s ability to constantly adapt, renew, and meet new challenges.”

Our fundamental argument is that while teaching design against crime is currently a highly marginal activity that has yet to capture the imaginations of students, or indeed their tutors, experience shows that with effective support and encouragement, the design curriculum has the flexibility and openness to engage with issues as they arise. Examples include management studies, ecology, demographic change and new technologies. Our research suggests that we need to address shortcomings in the *knowledge system* that underpins and could empower design against crime, and provide stronger incentives for educators, students and others to engage with the issues. This is evident in the case of all stakeholders we have researched.

6.1.1 Crime prevention expertise - distanced from design

Crime prevention officers (CPOs), and other professionals engaged in crime reduction, have specialist insights and understanding of design issues from a crime perspective. This has been demonstrated especially in the case of environmental design. These insights include an understanding of how crime reduction could be linked to customer care and thus provide a competitive advantage for enterprises that actively design against crime.

However, CPOs generally have little opportunity to disseminate their specialist knowledge. They are brought in to most building projects late in the development process, possibly because they are not seen as contributing anything useful to the process, given its relative low priority. Furthermore, they are trained primarily ‘on the job’ and have little formal training other than their 2 day course at the Crime Prevention College.

Within law enforcement professions, crime prevention has a far lower status than crime detection, and has an even lower status and awareness outside these professions. Aside from architectural and some specialist fields of environmental design, there is very little awareness of CPOs and the expertise they could provide to design. There is of course no positive reason or incentive for designers to develop links with CPOs.

There are comprehensive information resources for crime reduction professionals from the Crime Prevention College, Home Office and other sources, but this information is not intended for outside audiences, and is not in a form which is useful or accessible to designers. Similarly, information from security industry is available but also not in a form which designers are likely to come across, or find immediately applicable.

In summary, there exists considerable knowledge and expertise on crime prevention in relation to design issues. Our evidence suggests that it is distanced from designers and the design process by a lack of awareness, low profile and status of the crime prevention profession, and the form in which the knowledge is communicated.

6.1.2 Design practitioners - little knowledge, few incentives

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.

Aside from the proactive examples that our research has revealed, designers generally appear unaware of technological developments that specifically help to counter crime. This was especially the case for packaging design in which many new innovations that provide low cost opportunities to reduce counterfeiting, tampering or theft have not been applied by designers. Product tagging has been identified as a key area for future development in packaging technology, and designers need to be aware of how to incorporate this into their designs. However, it is unclear what mechanisms exist to increase this awareness.

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 which 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.

6.1.3 Design organisations - positive support and some initiatives

Design's representative and support organisations are broadly supportive of this initiative and in some cases have themselves taken positive action to further it themselves. Our interviews with the four lead bodies suggested that there is strong potential to support future work that is targeted at practitioners, educators and students.

There is no single comprehensive source of design related information provided by any one organisation, each having its specific constituency and methods of working. Together they provide opportunities to raise awareness in the professional arena, to cement stronger linkages business, design and relevant public agencies, provide support and encouragement for students and educators, and to improve knowledge flows.

Many of those we interviewed agreed that crime prevention is currently regarded by the design profession in a negative way. The challenge was in getting designers to understand the relevance of design against crime to their own work, providing them with incentives to engage with the issues.

The Royal Society of Arts has introduced design against crime briefs as part of its annual bursary award programme for design students. While there has been a relatively low uptake, linked to poor information availability for students, the intention is to continue again next year. Other activities in this field are also planned.

The Design Business Association has offered to include design against crime as part of Business Breakfast programme, and perhaps as a topic of discussion for the Parliamentary Group for Design and Innovation.

Design against crime is viewed encouragingly by the key representative and support bodies in design, with some already being active in this field, offering good prospects for further initiatives especially in the field of professional development.

6.1.4 Design education - lacking support and a 'cool' image

In the view of most design students, design against crime just isn't cool. As mentioned above, the RSA Design Out Crime brief was tackled by few students, and of these most were from industrial design courses. Generally, there is little interest from students, especially those in craft or fashion areas.

This is not surprising when we examine the extent to which crime is addressed by courses. According to our postal survey, only 13% of courses have explicit reference to crime reduction in their curricula, and most of these are architecture courses. When it is included it is most likely to be at postgraduate level only. Respondents were more likely than not to agree that crime reduction is not relevant to their design discipline.

Informal discussions with students reveal a widely held view that designing against crime, far from tackling a social issue, is only in the interests of insurers and the police. Furthermore, there is the view that it is a 'male' design domain concerned with the design of security locks and devices.

Despite this general picture, there are some positive educational initiatives. Two design colleges were found with explicit reference to design against crime in the curriculum, effective support in

terms of staff expertise and website resources, and demonstrated through student-driven project work and staff research. The Design Age Project at the Royal College of Art had also developed crime-related projects with student designers. All of these developments are relatively recent, but indicate some strong and committed educational practice which could be used as exemplars for others to learn from.

However, one of these courses did describe some difficulty in maintaining student interest, with very little interest on the part of students in pursuing it further after an initial introduction. We would need to research student attitudes more fully to identify the reasons for this. However, we suggest that perhaps there is a cultural acceptance and even endorsement of for some types of crime on the part of students. Allied to this, is a perception that crime is simply not a fashionable design issue (unlike, for example, eco-design). In the absence of exemplars or incentives, there is little prospect that this will change.

The lack of teaching resources is a clear impediment to its uptake elsewhere. The cases of good practice we have identified all involve committed individuals who have used their own doctoral research or general study time to generate teaching materials and case studies. We repeat a quotation used earlier in this report: "A project is a vehicle to apply and test knowledge, not a vehicle to acquire knowledge from scratch". While the high use of project work as a learning vehicle enables design courses to respond flexibly to new issues, there remains a requirement to use other teaching and learning methods to provide students with new knowledge. Increasingly, tutor guided internet resources can provide an applicable method.

The experience of other issue-driven topics in design education, such as eco-design, underlines the need for an integration of new subject matter into general design areas, rather than its marginalisation as a subject for separate study.

The postal survey, while indicating a low and marginalised level of activity, did suggest that there was some interest in increasing this further with requests for information and presentations to groups of students. Much like design management in the 1980s and eco-design in the early 1990s, there is an interest from many educators in addressing the subject in the design curriculum, but what is lacking are the resources to turn this interest into sustainable educational activity. Teaching materials, information sources, documented exhibitions and project case studies are generally absent from this field.

6.2 Imagine this

- British design having a global reputation for its inventiveness, quality, attention to detail, and crime countering features.
- A Design Against Crime 'kitemark' awarded to products, services and environments that consider crime most effectively and creatively in the design process.
- An annual on-line exhibition and conference for designers and students showcasing the best of design against crime and telling the development stories behind them.
- Teams of students from Britain's design schools partnering community development groups and applying design thinking to the problems faced by marginalised communities, such as vandalism and street crime, as a core element of their learning.
- Police authorities offering work placements to design students.
- A design profession that thinks crime first.

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.⁸⁷ 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 this 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. However, there are as yet insufficient researched cases of design against crime projects to advance any rigorous evidence to support this assertion.

6.3 Recommendations

The fundamental challenge is to assemble, advance and champion *Design Against Crime* knowledge - an understanding of issues and approaches that are embedded in the learning and practice of design to ensure that crime reduction is considered by designers as a matter of course. Part of this knowledge must be a research base that develops, tests and applies methodological principles.

We propose three inter-linked policy initiatives to further work in this field. They bring together the various ideas developed through this report, each focussed on specific objectives and constituencies. These three initiatives require further development work to establish new linkages, activities and, where appropriate, continued research. We set out these three initiatives below.

6.3.1 Strategic Design Against Crime Initiative

The aim of this initiative is to foster collaboration between designers, design users, industry and commerce, crime prevention agencies and academic researchers to develop appropriate information flows and a rigorous knowledge base to ensure the widespread commercial and professional adoption of Design Against Crime. The emphasis of the strategic initiative is very much that of developing and applying new knowledge in the field to competitive advantage, in that it strengthens the performance of the British design industry and business users of Design Against Crime. Specific actions within the initiative are as follows:

⁸⁷ Data source: Department of Culture Media and Sport (1998) Creative industries mapping document

- Identifying the specific information and knowledge needs of all stakeholders and implementing new information structures.
- Government to lead by example - ensure that Design Against Crime is embedded within its own design management policies.
- An awareness raising programme targeted at business and the design professions that includes:
 - Articles in relevant trade press to raise awareness amongst practising designers, exploiting interest shown by journalists during this research project.
 - A debate/event based around the theme of design against crime making use of offers provided by the Design Business Association and the involvement of 'big names' in design.
 - Introduction into training courses run by the design organisations, alongside other social issues as appropriate – similar to courses for architects run by RIBA
- An annual Queen's Award for Design Against Crime, perhaps launched to coincide with the awareness programme detailed above.
- Research to be commissioned into analysing the costs and benefits of investment in Design Against Crime.

6.3.2 Urban Design Against Crime Initiative

The aim of this initiative is to develop Design Against Crime initiatives that address issues of social exclusion and the urban environment. In other words, design is not just a business service, but an approach to thinking that can empower communities and promote inclusion.⁸⁸ Specific actions within the initiative are as follows:

- The establishment and testing of pilot projects in which design colleges work with community organisations to tackle crime related design issues.
- Design used as an education tool for marginalised young people and as a tool for creative expression.
- The establishment of urban learning partnerships that link educators, community leaders and crime prevention specialists.
- Information design issues addressed in terms of accessibility to the forces of law and justice.
- Showcase exemplar projects disseminated through exhibitions and the internet.
- The establishment of a charitable foundation, seeking funds from the professional design community to both supplement government funding of such projects, and to involve the profession actively in the initiative.

⁸⁸ In developing this initiative, the research team has drawn inspiration from the New York based World Studio Foundation which uses design industry funding to sponsor design programmes with disenfranchised groups.

6.3.3 Educational Design Against Crime Initiative

This initiative aims to embed Design Against Crime within design curricula at school, degree and professional levels. It aims to provide and promote the development of teaching resources to further this aim, foster a community of informed, committed educators and provide incentives for students to explore crime issues in their project work. The initiative also aims to promote scholarship and educational excellence in this field. Specific actions within the initiative are as follows:

- Develop and pilot a distance learning package for design professionals that can be used as part of the continuing professional development of designers and design managers.
- Develop and pilot a modular learning package combining distance learning, formal teaching and project methods for degree level design students which can be adapted to a variety of design disciplines.
- Develop and pilot a learning pack for school level Design and Technology students.
- Establish an interactive internet learning resource for students, to be launched alongside an exhibition and publication.
- Seek a prominent sponsor for a biennial prize celebrating the best educational initiative by an educator furthering Design Against Crime.
- Co-ordinate activities with those of the Royal Society of Arts and D&AD to promote student awards in this field and extend Design Against Crime briefs to include reducing the fear of crime and enhancing the quality of life through changing people's perceptions of crime.
- The Design Council to co-ordinate a touring staff development seminar focussing on the needs of design educators.
- The Design Council to collaborate with Gower in the publication of a book on Design Against Crime.

Appendix One:

Abbreviations used in the report

ALO	Architectural Liaison Officer
BCS	British Crime Survey
CAD	Computer aided design
CCTV	Closed circuit television
CPO	Crime Prevention Officer
CPTED	Crime prevention through environmental design
CSD	Chartered Society of Designers
CSM	Central Saint Martins College of Art and Design
D&AD	British Design and Art Direction
DBA	Design Business Association
DIBW	Design in Business Week
DIEW	Design in Education Week
DTI	Department of Trade and Industry
FMCG	fast moving consumer goods
IT	information technology
LCC	Life cycle cost
LTP	London Transport Police
NPD	New product development
NTU	Nottingham Trent University
PC	Personal computer
PSAG	Packaging Solutions Advice Group
RCA	Royal College of Art
RSA	Royal Society of Arts
SDA	Student design awards

SHU	Sheffield Hallam University
UDV	United Distillers and Vintners
UEL	University of East London

Appendix Two

Schedule of meetings and interviews

1 Design organisations

1.1 *Design Business Association*

26/10/99 - Colin Porter, Corpbrand (ex chair of DBA, involved in 'Design for Good')

02/11/99 - Lynne Dobney, Interbrand Newell & Sorrell (current chair of DBA)

09/12/99 - Stephanie Smith, Assistant Chief Executive DBA

1.2 *Chartered Society of Designers*

26/11/99 - Brian Priestly, packaging designer & former north east rep of CSD

1.3 *Design Council*

12/10/99 - Lesley Morris, Education and Training Manager

1.4 *Design & Art Directors*

24/11/99 - Claire Fennelow, Education & Training Manager

29/11/99 - Richard Seymour, President

1.5 *Royal Society of Arts*

13/01/00 - Susan Hewer, Head of Design

2 Social issues in design education

2.1 Design For Our Future Selves

26/10/99 - Frank Philippin, Research Associate, Helen Hamlyn Research Centre

02/11/99 - Jeremy Myerson, Director, Helen Hamlyn Research Centre, Royal College of Art

2.2 Eco Design

24/11/99 - Emma Dewberry, Goldsmiths College

2.3 Gender

Erica Matlow, Principal Lecturer in Design, University of Westminster

3 Crime prevention authorities

3.1 Crime Prevention College

23/08/99 - Teaching & information staff at the Crime Prevention College, Easingwold (Martin Milburn, Jeff Lloyd, Gill Archibald)

3.2 Crime Prevention Officers

Regular contact with Eamonn Larkin, Central Sheffield Crime Prevention Officer

Regular contact with Michael Hodge, Principle Architectural Liaison Officer, Greater Manchester Police

3.3 Retailers Against Crime

July 1999 - Sheffield City Centre Retailers Against Crime group

4 Educational bodies

4.1 *Portsmouth University*

19/10/99 - Portsmouth University Institute of Criminal Justice Studies

4.2 *Nottingham Trent University*

21/10/99 - Hugh Miller, Nottingham Trent University

4.3 *Sheffield Hallam University*

General discussion with staff, and following ongoing projects within Hallam.

01/12/99 – Research Forum discussion

4.4 *Central St Martins College*

09/10/99 - Brent Richards, Central St Martins

13/01/00 - Lorraine Gamman, Central St Martins

4.5 *University of East London*

24/10/99 - Roger Sale, University of East London

5 Key stakeholders in design

5.1 *Packaging & Graphic Design*

Lynne Dobney & Colin Porter (DBA - see above)

Brian Priestley (CSD - see above)

26/07/99 – Mark Aartsen, Business Development Manager, Merck

12/10/99 - Barry Jones, Managing Partner, The Packaging Development Company

02/11/99 - Gareth Farmer & Alan Adkins, Managing Directors, Tag Labels

05/11/99 - Jon Cowan, Sales Director, Decorative Sleeves

08/11/99 - Astrid Mitchell, Marketing Director, Applied Holographics

06/01/00 Susan Ward-Geddes, Director of Risk Management , UDV and Ross Aylott, Business Protection Support Manager, UDV

5.2 *Automotive Design*

01/10/99 – Terry Beadman, Certification and Inspection Manager, MIRA

10/12/99 – John Daly, Design Director, DCA Design Consultants

13/01/00 – Neil Bates, Partner, Creactive Design Consultants

5.3 *Product Design*

18/10/99 – Barry Jenkins, Design Director, PSD Associates

07/12/99 – David Cowler, Senior Designer, FM Group

10/12/99 – John Daly, Design Director, DCA Design Consultants

19/10/99 - Kevin Howells, SmartWater Ltd

Richard Seymour (D&AD - see above)

5.4 *Environmental Design (interiors)*

21/09/99 – Nick Lightfoot, LightWork Design

27/10/99 - Hugo Tugman, The Tugman Partnership

09/12/99 - Paul Bentley, Group Security Controller, Moss Bros

02/12/99 – Sandra Weerasinge, Creative Action - interior designers

12/10/99 - Mike Schuck, Assistant Director of Retail Crime, British Retail Consortium

Environmental Design (Public Transport Design)

13/01/00 – Neil Bates, Partner, Creactive Design Consultants

5.5 *Multi Media Design*

07/12/99 – Richard Holley, Senior Designer, AMX Studios

29/11/99 - Malcolm Garrett, Design Director, AMX Studios