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Safety, Crime, Vulnerability and Design - A Proposed Agenda of Study

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ABSTRACT

This first working paper from the Environment and Safety Group puts forward a new multi faceted research agenda arising from the interface between different disciplines. The paper explores the linkages between crime and environment and the assumptions made in the designing out crime debate.

The authors re-examine basic concepts such as what is crime and what do we understand by vulnerability. The paper argues that given the complex nature of our relationship to streetscape and landscape, a simplistic approach to "designing out crime" cannot hope to succeed. The paper concludes by setting out a future research agenda for the group.

The Environment and Safety Group is a research group formed in 1994 bringing together a number of different academic perspectives on crime and perceptions of vulnerability. The group intends to further its intellectual interests by theoretical explorations informed by empirical research.

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Introduction

Crime and personal safety continue to be issues for public concern. Last year, approximately 5.5 million crimes were recorded by the police, although the British Crime Survey suggests that the 'true' crime rate will be very much in excess of this figure. In response to this, there has often been demands for research to be carried out in the area of crime prevention. In recent months, attention has once again been focused upon crime prevention through design. A recent government circular, Planning Out Crime[1], states that

> *Successful crime prevention often depends on a wide range of measures.... and involves several agencies. The planning system is one, but only one, important factor in a successful crime prevention strategy.*

In particular, the report considers the linkage between crime, safety and the environment:

> *The causes of crime and vandalism are complex but it is widely accepted that environmental factors can play a part. Desolate, sterile and featureless surroundings can engender feelings of hostility, anonymity and alienation.*

However, despite the prescriptive tone of this circular, understanding of the linkages between crime and the environment is not at all clear.

In this first paper from the Environment and Safety Research Group we set out to explore these linkages and to question the assumptions made in the designing out crime debate.

Before any study of crime or personal safety can begin, it is important to clarify some of the terminology used. After exploring concepts of crime and vulnerability the paper will look at the relationship between space and behaviour and will then examine the design concepts put forward by the designing out crime lobby.

[1] Planning Out Crime, Circular 5/94 (DoE)

What is crime?

Part of the increasing concern over crime is due to the rising crime figures, but what are we to understand from these statistics? To what extent are crime figures distorted by official definitions of crime? To what extent are rising figures due to increased reporting of crimes or increased efficiency in police detection rates? This section examines some of these questions.

One definition of crime is to see it as a legally defined threat to society. This is further distinguished from other threats that the mainstream of society may fear but try to control and internalise rather than outlaw. The way a specific behaviour is criminalized is a sensitive issue and varies in different institutional settings. For example, in some countries "suicide" and "insult to public officials" are regarded as crime (Giritoglu et al, 1994), whereas in others these could be considered as manifestations of psychological or political problems. Another example is the debates in Britain about criminalizing racist behaviour or decriminalizing some forms of drug abuse.

Another view would be to see the current definition of crime as being essentially gendered in its construction such that the incivilities suffered regularly by women are not treated as crimes by the police and criminal justice system. These incivilities such as being followed; being kerb crawled; being intimately touched by strangers; being called after in a sexually aggressive way create feelings of victimization such that women are forced to make changes to the pattern of their lives. For feminists a crime might be any act which is non concensual and creates feelings of victimization.

Turning to the reporting of crime, there are many reasons why a crime may not be reported to the police. Walker (1983) identified six main scenarios in which a victim would not report a crime. Two of these of particular relevance here are listed below:

In the case of sex offences, the victim may be unwilling to give evidence to the police or appear in court at a future date.

While the police have made considerable changes to sensitize their handling of victims of rape and sexual assault the criminal justice process still requires the victim to face her attacker in open court and to discuss the attack under cross examination. The sentences given to rapists still gives powerful messages to women that the crime is not a serious one in the eyes of the law. In the United States rapists receive life sentences while most convicted rapists here will have custodial sentences of less than ten years. Remarks from the bench and questioning of how a woman was dressed at the time also send out messages to women that in some way they were culpable too.

The victim may fear repercussion if they report the crime. This may be due to threats on the part of the offender.

In the last few years some local authorities have introduced "professional witnesses" who will give evidence against perpetrators of crime usually on local authority estates. This is a step taken in recognition of the reluctance of many tenants to come forward against perpetrators of crime because of fear of retaliation.

Even when an incident is reported to the police, there are other processes which may prevent a reported crime entering the official statistics. When an event is reported to the police it is merely an *incident*. To be recorded as a *crime* further action must be taken. This may not occur for several reasons. Most importantly, the incident must be viewed as a crime by the recording officer. In many cases, local or force-wide policies in dealing with certain types of incident (domestic violence, for example) may result in failing to record these as crimes, having a notable effect on official statistics. It would seem that to gain a better understanding of the relationship between landscape design and safety, it is necessary to consider a broader range of human deviant behaviour than that officially defined as 'criminal'.

It appears, then, that direct consideration of official figures is not likely to identify all of the problems associated with actual crime occurrence. However, to more fully understand the relationships between the landscape and fear of crime, it is necessary to have some notion of 'true' problem levels. This may be thought of more loosely as an objective measure of 'quality of life' or 'size of problem' rather than a rigidly defined index of crime incidence. This would allow us to address the problems of threatening - but not criminal - behaviour, non-reportal of crimes and other pitfalls associated with the official figures. For the remainder of this report, such a measure will be termed 'vulnerability'.

Concepts of vulnerability

A clear distinction between vulnerability and the official figures is that the former is an idealised quantity, whereas the latter is an empirical observation. A perfect empirical measure of vulnerability is unlikely to be achieved. However, measuring vulnerability may be thought of more as a goal which we may attempt to move towards. For example, official crime statistics are *per se* an attempt to measure vulnerability, but have several shortcomings. Problems of non-reporting, or of the exclusion of non-criminal events, can be thought of as errors in the measurement process. In a later section, some techniques will be put forward to address some of these difficulties, hopefully resulting in a less flawed methodology for measuring vulnerability.

At this point, the nature of vulnerability needs to be considered in greater depth. For the purposes of this study, vulnerability may be considered to be spatial in nature. There are greater risks associated with some areas than others. If this were not the case, there would be little point in studying linkages between vulnerability and environmental design. This suggests that vulnerability may be visualised cartographically, and that diagrammatic techniques may be used to investigate such linkages.

A further important characteristic is the probabilistic nature of vulnerability. There may be high risks of assault when crossing a particular piece of land or using a subway, but this does not *guarantee* that an incident will happen every time a person is present. It may be thought more usefully that there is a relatively high *probability* of assault associated with a particular feature of the landscape. This has implications for the statistical techniques used to measure vulnerability. Essentially these will be concerned with measuring probabilities, and their variation over land.

It should also be noted that vulnerability does not only vary according to the location, but is likely to differ for individuals for example in relation to gang warfare, members of one gang are more vulnerable when intruding on a rival gang's territory. It seems likely that each individual will have their own 'vulnerability map'. However, it is also possible, and sometimes necessary, to consider aggregate vulnerabilities for various sections of the population. For example, it may be that police resources may be allocated geographically on a 'need' basis - an attempt at preventative policing by placing officers in areas where crime rates are highest. This would be based on a perception of aggregate vulnerability for the population as a whole. It may sometimes be useful to compare different aggregate vulnerabilities, for instance looking at differing vulnerability maps for men and women, against a backdrop of features of the landscape. Also, comparisons of this sort may raise questions of inequality. For instance, if a policing policy based on population aggregate vulnerability is applied, it may be that an area of high aggregate vulnerability to an ethnic minority group is inadequately policed on the grounds that this area does not propose a great threat to the population viewed as a whole. Vulnerability maps needs therefore to be used in conjunction with fine grain group studies.

Finally, together with the notion of vulnerability goes the related notion of *perceived vulnerability*. Whereas vulnerability is defined in terms of an objective level of risk, perceived vulnerability is based on an individuals subjective view of their own risk. Again, it may be seen as spatial in nature, and probabilistic. A person may feel that they are *likely* to be attacked in a certain alleyway, but they could not state that this would *certainly* happen. Again, it is possible to conceptualise aggregating this quantity, in a similar manner to that proposed for objective vulnerabilities. It is also hoped that the two aspects of vulnerability can be measured on the same scale, allowing direct comparisons. In this way it would be possible not only to map areas of perceived and actual vulnerability, but to identify areas of *unwarranted* high levels of perceived vulnerability - adding a spatial dimension to the analysis of fear of crime. Possibly through the use of a GIS or CAD system this could be linked with the design of an area.

As with actual vulnerability, the measurement of perceived vulnerability may be a difficult task, and perhaps should also be viewed as a target to aim at rather than something that may be immediately achieved. The main problems here are the elicitation of spatial perceptions from individuals, and the conversion of these into a form commensurate with that of actual vulnerability.

In order to draw maps, or create tabular summaries of vulnerability it must exist in numeric form. A useful paradigm would be to express vulnerability as a probability - for example the vulnerability of a certain place with respect to assault would be the probability that an individual would be assaulted were they visiting that place.

The fact that there are already mathematical laws for combining probabilities conveniently provides a framework for combining vulnerabilities. This is useful when considering aggregates. In the above example, the vulnerability for women as a whole would just be the probability that a women would be attacked if visiting the place in question. The laws of probability relating to compound events provide a connection between the likelihoods of assault at individual and aggregate levels.

However, although this provides a framework for manipulating quantities, it does not address the basic problem of estimating them in the first place. In the rest of this section a possible methodology for this will be outlined.

It is often necessary to estimate aggregate vulnerabilities rather than individual ones. This may be more easily achieved by measuring the aggregate quantity directly, rather than synthesizing this from estimates of individual vulnerabilities. As stated earlier, official crime statistics can be viewed as a crude attempt to measure population aggregate vulnerability. They are given as absolute *numbers* of crimes over a series of regions. However, they may be converted into probabilities by dividing each individual crime zone's number of crime by the total of all zones.

$$\Pr(\text{zone } X) = N(\text{zone } x)/\_\ N(\text{zone } i)$$

This may be interpreted as the probability that a member of the public will be a victim crime in zone x *given that they are a victim at all*. In other words, it reflects

the proportion of all crime that takes place in zone x, giving a measure of relative risk. However, at this point the calculation is based entirely on the official crime statistics, and subject to all of the distortions discussed earlier in the paper. However, it is possible to improve upon this by considering the problem of non-reportal and attempting to improve the estimate of vulnerability by accounting for this in some way.

Consider, for example the estimation of vulnerability to household burglary. In most instances, it is a requirement of insurance companies that burglaries are reported to the police before a claim may be made. However, if the victim was not insured, it is less likely that they will report the crime. Thus, there is a certain probability of non-reportal. Returning to the official figures, it is likely that not all burglaries will be reported in each zone. Assuming that zone i has a probability of non-reportal for all of its resident victims of pn(zone i), then on average, the true number of household burglaries in zone i, nt(zone i), will be

$$nt(\text{zone i}) = n(\text{zone i}) / (1 - pn(\text{zone i}))$$

and a less biased estimate of the vulnerabilities can be obtained from these. Now, the probability of non-reportal for given zones is not readily available, and so must be estimated in some way. Remembering that victims without insurance policies are most likely to be non-reporters, it may be possible to estimate pn(zone i) on the basis of the proportion of uninsured houses in that zone. Calibration of the linkage between non-insurance and non-reportal could possibly be derived from the British Crime Survey's victim survey information. If information about insurance is not directly available, it is possible to look at proxy variables, such as employment status, home ownership, age of residents and others to attempt to estimate the likelihood of non-reportal. Given the tendency for these quantities to vary notably between zones, it is expected that the levels of adjustment to each zone's crime counts will vary notably, making marked changes to the patterns of vulnerability obtained by the crude, official figures only based approach.

This discussion serves to illustrate the principle of using vulnerability measurement as a goal toward which incremental steps may be made. In this case, the official statistics were adjusted to take into account a certain reason for non-reportal, hopefully leading to an improved measure of vulnerability. It may be possible to take into account other factors which may also influence the likelihood that household burglaries are reported.

It should also be noted that steps toward better measures of vulnerability may not always be as mathematical as this one. For example, measuring vulnerability to harassment could be improved by organising a survey of experiences of harassment, and taking into account incidences of, say, being followed which would not be classed as a crime but certainly contributes to the 'level of problem' notion of vulnerability put forward initially in this paper. Thus, by carrying out survey work and obtaining more relevant information than that given in a secondary data source, the measurement of vulnerability has been improved.

Let us move on and consider by focusing briefly on women, what particular environmental features may create anxiety and to what effect.

There are easily identifiable features which might be termed "fear generators" : poor lighting; low visibility; an illegible environment. Feelings of vulnerability enforced by the creation of places loaded with fear generators inevitably lead to women constantly negotiating their safety and choosing coping tactics ranging from physical defence strategies to environmental response strategies such as walking more quickly and avoiding places perceived to be particularly dangerous through to time avoidance strategies which avoid threat by not going out alone or at all (Valentine 1992). Feminists argue that the power relationship between men and women has been recreated in the built environment which then reinforces feelings of powerlessness and vulnerability. This argument can be extended to include the whole range of minority groups in society.

Having considered the impact of fear on people's lives we move on to think more broadly of the relationship between space and safety.

Examining relationships

A number of questions should be put forward in relating space to safety. In what ways is the social geography of an environment related to its criminal geography? What *forms of crime* can be associated with space and therefore mapped, or prevented by new organizations of space? Is for example burglary more space-based than drug-abuse? It should be possible to separate different forms of crime, map them separately, and analyse their correlation in space and time. Similarly, it should be possible to map the patterns of incidence of, and vulnerability to, crime and analyse their socio-spatial dimensions. Depending on the form of crime and/or the patterns of incidence and vulnerability, design as spatial management can be brought into the equation.

The design dimension can be looked at in its relation to the questions of *order and control*, as a manifestation of the power relationships. What is the relationship between control and safety? What forms of control and by whom can ensure safety, and to what extent? Would control over space give safety to those with the power of control? Do the more democratic forms of governance necessarily lead to more security? Are the formal ways of control, as institutionalized through legal procedures and policing, more effective than informal forms of control through public participation, as exemplified by resident groups? Can home ownership, which is legally the ultimate form of control over space, ensure safety and reduce vulnerability?

In what ways does design of space contribute towards establishing and perpetuating a desirable form of social order? In what ways does the incidence of crime threaten this socio-spatial arrangement? A debate may arise between secure versus democratic space, between concerns for controlling crime through design and a restricted access and therefore a less democratic space which reduces the range of choices. Should design offer more possibilities and choices, as many modern examples have aimed for (Milton Keynes Development Corporation, 1976; Bentley et al, 1985). Or should it reduce these choices in the name of safety, by introducing barriers and gates as in the case of the walled neighbourhoods of Los Angeles or the medieval Mediterranean towns (Davies,1992; Vance,1977). In other words, should design contribute to further social and spatial segregation to ensure safety and security or should it attempt to work against the forces of polarization by reintegrating groups and spaces? In making these decisions, which side of the equation should the designer identify with? With order and rational organization of space or with spontaneity and allowance for emotions?

Urban form has been defined as a combination of land use pattern, street pattern, and building form. It is possible to relate these dimensions of urban form to the question of safety and vulnerability. Has the strict segregation of land use, which was introduced after the second world war, created safer spaces or areas which become abandoned and frightening after the working hours? Has the disintegration and redevelopment of the old street patterns contributed to the development of safe environments or created vast open spaces in which fear rules, especially in the dark? Has the celebrated modernist building form of high rise structures on pilotis added to the safety of the urban areas or to the alienation and vulnerability?

The question of safety in space can be analysed in relation to the *public and private* organization of space. It would be interesting to see how the patterns of public vs private relationships in space relate to the patterns of legally acceptable vs criminal behaviour. How certain forms of behaviour are allowed in private and not in public, as these are seen as against the public interest/morality. Is the public space associated with safety, as if the presence of the other people could reduce the degree of vulnerability? Has the modernist urban form disintegrated the public spaces in which intersubjective communication offered a degree of safety? How safe are the semi-private and private spaces? Can domestic violence and crime in public space be indications of the absence of such a divide in the patterns of safety and vulnerability?

Turning from the built environment it appears that certain types of vulnerability to crime may be linked to external spaces with particular characteristics. The links between this vulnerability and the structural elements of the landscape, particularly vegetation, are not clear. This is because of the many roles which vegetation plays:

- Structural - definition of spaces
- Ornamental
- Cultural association and meaning - the mythical tree, instant recognition/familiarity
- Natural association and green issues = cleaner environment/health
- General well-being - state of mind, out in the open, greenery, 'softening' the hard city edges.
- Setting - economic acceptability

It is not just the visual perception of vegetation, but many other perceived elements which affect the way vegetation is treated or regarded. This has important effects on the links with the association of crime and vegetation.

It is not only the composition of parks which is of concern, but the 'incidental' green space and vegetation in urban and suburban areas which is associated with areas of crime and which is most likely to be a person's daily contact with anything living apart from humans and pets. Many urban and urban fringe open spaces are regarded as derelict even if they are not classified as such. The associations which 'dereliction' holds provides an (often) irrational fear or feeling of vulnerability in much of the urban population. However, in some groups, e.g. small boys, such areas hold an excitement and mystery which provides the perfect adventure playground. These somewhat contrasting feelings of excitement and fear (aka crime) appear to be closely related in relation to the landscape. Recreation studies have revealed some interesting conclusions concerning perception of landscape. In a study undertaken in Colorado, Knopf (1983) concluded that people who were most likely to be victimised by home burglary were more inclined to state that recreation away from their immediate neighbourhood provided them with an opportunity to experience a secure, trustful social environment. This was supported by a study by Catton (*in* Knopf 1983) who summated that a major motivation for participating in outdoor recreation may be to experience a *"morally, socially, dependable world"*. How can such a world be recreated on the doorstep?

Lynch (1960) linked the perception of landscape to cultural familiarity: "*The environment is an integral part of primitive cultures; the people work, create and play in harmony with their landscape. Most often, they feel completely identified with it, are loath to leave it; it stands for continuity and stability in an uncertain world*". In essence, our reactions to landscape depend upon our individual experience of it and of associations with it which have developed through learning - usually from parents. People also vary in their perception of the landscape according to age, class, sex and economic situation. It is likely that perception is also altered according to whether a person is essentially an urban or rural dweller. Is this feeling of vulnerability in green space engendered by its strangeness, and would a greater familiarity of plants and ecological processes reduce this fear? Are those who are closer to the land (nature) or more familiar with the processes of nature less likely to be afraid of vegetation or vice-versa? If people are unable to read or identify their surroundings a feeling of fear and or excitement is often engendered.

How far can this apparent fear of vegetation be attributed to an intrinsic fear, to fear by association or fear by learning? Has the upsurge in green issues and environmental conservation had a corresponding effect of public perceptions of vulnerability in relation to green spaces, and if so what is the effect? Are the designers of ecological landscapes misplaced in their assumption that more ecologically healthy areas for plants and animals provide more environmentally sound areas for the urban human ecosystem? Have we in Britain been conditioned for too long to accept the unnatural Capability Brown paradigm for parks and urban landscapes - Nature under control in the guise of an untouched landscape?

Are we perhaps now so far away from our roots that we are afraid of the trees? Perhaps urban humans simply do not know how to experience green space. New agricultural landscapes have also been seen to create a hostile environment for exactly the opposite reason - lack of vegetation. But again, this perception depends very much upon familiarity and this has much to do with familiarity of scale and analogous elements, as well as familiarity of place. Those people who are brought up in the American mid-west would find the wide open space of Newcastle Town Moor less intimidating than the enclosure of Jesmond Dene.

Perceptions of vegetation are heavily influenced by cultural associations and myths which are perpetuated in films, books and by the media. Landscape is often depicted as an aggressor - the wilderness which has to be conquered, humans against the environment. Just as the global environmental crisis is forcing us to re-examine our relationship with nature, on a much more personal and immediate basis we must examine our everyday relationships and contacts with the natural world.

Appleton (1975) examined objective and subjective attitudes towards the landscape in order to determine what it is that people like and why. He identified that what matters in human perception is not the *actual* potential of the environment but its *apparent* potential. Elements of our environment are endowed with attributes which do not actually exist. Appleton's theory states that vegetation may be a means of refuge, of escaping from danger however if it is perceived as providing or hiding danger rather than as environmentally, ecologically and aesthetically beneficial it will create an irrational reaction in the perceiver. Appleton developed his theories in

relation to beauty and aesthetic enjoyment of landscape, but these are also useful for the examination of vulnerability.

There can be no doubt that various types of townscape and landscape engender feelings in us but given the complexity of the relationship between ourselves and the environment what solutions can be posed?

Designing out crime?

In the field of designing housing layouts, Oscar Newman's work *Defensible Space* (1972) which compared crime levels on a low rise development with those of a high storey slab block estate, has been highly influential in suggesting that design may have an indirect ability to encourage informal social control. These concepts have been developed in the 80s in Britain by Alice Coleman to suggest that physical design has a direct impact on the existence of crime opportunities (Coleman, 1985) and various indicators of social breakdown which Coleman terms "social malaise".

Though Coleman's work was criticised on several counts, not least because her statistical methods are claimed to be flawed, (see for example, Hillier 1986/7), perhaps most importantly her worked was based on two local authorities of almost entirely flatted estates, Southwark and Tower Hamlets; this was not a typical situation. When the Priority Estates Programme was set up in 1979, looking at a range of issues on hard to let estates, including high rates of crime, a third of these were pre-war cottage estates (Power, 1987). Coleman's work provides no explanation for high crime rates on this type of estate.

Moreover, where design improvements recommended by Coleman have been carried out, they would not always appear to be popular with residents. A notorious example is that of the Mozart estate, where among other, 'design improvements' walkways were blocked, supposedly to prevent escape routes for muggers, yet these often merely resulted in hugely increased journeys for residents, to and from their flats, (Architects Journal, 1986).

A smaller scale example of designing out crime may be found in recent references to the role that tree and shrub planting has on individual safety. The idea that trees and shrubs in cities can provide succour to criminals has been with us for some time. In May 1981, under the headline "Slimline Trees Fox the Muggers", Paul Johnson told *Guardian* readers about Birmingham City Council's decision to use Norway maple as the mainstay of its inner-city planting policy, on the grounds that its trunk, at less than 150mm in diameter, would be too thin to provide cover for would-be assailants. A Councillor is quoted as knowing of several instances where plants and trees designed to enhance a public place had provided cover for muggers.

In December 1992 *Landscape Design* reported that the murder of Rachel Nickell on Wimbledon Common earlier that year had put the design of public parks under scrutiny, noting in the same article that London's Royal Parks had, in 1991, been the scene of four cases of grievous bodily harm, two rapes, five indecent assaults and seven assaults on police. The article went on to say that the parks' authority in Manchester had started to remove rhododendrons clumps from the city's parks to reduce the risk of mugging. Similarly, at the "Landscapes of Fear" conference (London, May, 1994), DC Bob Knight of the Metropolitan Police suggested that urban woodlands were one of the key landscapes identified (presumably by the police themselves) as proposing a threat to the public.

There is, as yet, no concerted drive to remove trees and bushes from our towns and cities. Indeed, under initiatives like the Urban Programme and City Challenge,

many thousands more have been planted. Yet these occasional rumblings about the dangers of planting worry landscape architects, many of whom seem to possess a missionary zeal about the benefits of greening urban areas. Trees and shrubs, they point out, can provide shelter of shade, define spaces, screen ugly buildings, provide habitats for wildlife and restore the lost relationship between urban humanity and nature.

In the majority of cases in the inner city, however, landscape designers are likely to be the "outside experts", in that they do not live in the areas they are designing for. This may leave them open to the challenge that they are imposing an inappropriate aesthetic upon communities which do not share it.

There is obviously the need for a rational appraisal of the risks as well as the benefits of urban planting. The "evidence" currently available seems to be largely anecdotal, or to consist of bare assertions. Even if it is demonstrated that the public's concern about vegetation is sometimes justified, does this inevitably lead to a policy recommendation for its removal or reduction? The negative values associated with planting could be offset by, or out weighed by, positive values, some of which have already been mentioned above.

The purpose of these arguments is not to assert that crime may not be 'planned out', but that the interaction between local environments and crime/personal safety cannot be encapsulated in a simple set of 'bullet point' recommendations. Similarly the problems of the Mozart estate examined by Coleman may be more complex than a concentration on the purely physical will reveal. In the examination of crime and vulnerability in relation to space, it is important to examine as full a picture as possible and not to concentrate on one aspect of the problem. An understanding of the human-landscape interactions and their implications are essential if shallow interpretations of vulnerability and crime problems which result in management decisions and drastic actions based on misplaced analysis are to be avoided.

Design led solutions can do no more than reduce the opportunity for the criminal to commit crime and can not hope to approach the reasons why that criminal offends in the first place. They, therefore, can not hope to reform criminal activity. Not only this, but by creating difficulties for the offender to offend, patterns of criminal activity may simply be displaced. This displacement need not be simply geographical, however, it may involve temporal and tactical displacement, the results of which being so widely spread, they may be difficult to identify, (Scottish Office, 1991). Much more research needs to be carried out from the offenders point of view, as to what increases the property or person in the environment as a target of attack.

Not only should the view of perpetrators of crime to the built environment be more fully understood, but perhaps even more importantly a greater understanding from those who are vulnerable to crime, needs to be gained. It is now well recognised that only a small proportion of crimes are actually reported to the police. Even more hidden than this, however is the whole range of incivilities which are recorded at all though there is no evidence to suggest that they have any less impact on the victims welfare. Moreover, unlike the problem of burglary or physical attack which may be an infrequent occurrence, victims who suffer abuse because of race, sexual

orientation etc., may have to face daily abuse, verbal attack, stone throwing and so on which the police would powerless to prevent and for which crime/design solutions would have no impact at all.

Conclusions

Crime prevention through urban design (CPTUD), studies, come from a long tradition of empirical-analytical studies of spatial crime. To date, however, they have failed to provide satisfactory, or at least unchallenged evidence as to the exact nature to the links between design in the built environment and crime.

There are undoubtedly clear examples of where CPTUD has failed, in particular where design solutions are imposed on communities without consultation the approach would certainly seem to be doomed to failure. Consultation may reveal, however that design layout may be a low priority, other issues may be of much more concern.

Undoubtedly, one of the failures of CPTUD studies is that they attempt to over-simplify a highly complex situation where influences design may have on behaviour are overlaid with a multiplicity of other factors. Future work in this area need to be more sophisticated.

The greatest failure of CPTUD studies, however is undoubtedly that they have concentrated on the physical environment, almost to the exclusion of perpetrators of crimes, or those vulnerable to it. This may have over emphasised the importance of crimes against property and rarely addresses a whole range of problems those vulnerable to crime and incivility may face, which overall may have a far more devastating effect on their lives. This being the case, most importantly future studies looking at the links between environment and vulnerability, should not simply examine the problems of recorded crime, but address a much wider range of social issues.

An agenda for research

The Environment and Safety Group proposes to carry its work forward in multi faceted research that reflects not only the breadth of our intellectual perspectives but also seeks to address the complexity of the issues.

Our first proposal will explore people's perceptions of their environment. We plan to ask individuals living in the vicinity of a formal park to keep diaries over a given period which details their daily movements. We will ask diarists to detail where they go, why they go; the choice of route or method of transportation; whether they take a companion; whether time of day affects their choices. It is also planned to give diarist one film cameras with which they may take photos of spaces and places that they find safe and those that they approach with care if at all. The diary method throws into prominence the person centred approach with individuals able to make subjective definitions of crime and incidents which make them feel victimised. It is hoped that through this method we will get close to social realities. The resulting material can be analysed according to particular groups: for example, the responses of women, the perceptions of mothers of young children; the views of older women. The time space data can be mapped using CAD and GIS to determine the way certain spaces are used at certain times of day. From this study we can begin to explore issues of who is perceived to be in control of certain spaces and how this effects their use and by whom. Particular spaces identified as problematic can also be analysed for their landscape features to determine whether there are commonalities which are seen as fear generators by particular groups or whether it is the interaction between landscape features and controlling groups which trigger anxiety.

Further planned projects include:

- an investigation into the extent to which citizens are influenced by the media in their perceptions of landscaped areas and safety. the project would analyse newspaper coverage and be informed by interviews with local people.

- a study to determine the impact of crime on the spread of health facilities and thus on local quality of life. A GIS study would map the movement of medical centres and doctors surgeries and with evidence form interviews with medical personnel would consider impacts on local people.

- a fine grain qualitative study to determine whether those women who have suffered domestic violence have a changed perception of their safety in the public sphere. Women would be identified through their residence in women's refuges.

- a study of focus groups to explore their perceptions of safety in woodland. such an investigation will inform the current debates about community forests, their design and management.

References

Appleton, J. (1986). *The Experience of Landscape,* HUP, Hull.

Architects Journal (1986). - "Tenant Revolt over Coleman Masterplan", November 12th.

Coleman, A. (1985). *Utopia on Trial: Vision and reality in planned housing*, Hillary Shipman, London.

Davies, M. (1992). "Fortress Los Angeles, the militarization of urban space" in Sorkin, M. (ed) *Variations on a Theme Park*, Hill and Wang, New York.

Department of the Environment (1994). *Planning Out Crime,* Circular 5/94.

Giritoglu , C., N. Ergun & F.Yirmibesoglu (1994) "Social Change and Crime in the City Centre of Istanbul" presented at *Societies in Transition* conference, Edinburgh College of Art/Heriot-Watt University, Edinburgh .
Hillier, B. (1986). "The Synactic Analysis of Settlements", *Architecture and Behaviour 3*.

Knopf, R. C. (1983). *Recreational Needs and Behavior in Natural Settings,* in Altman, I and Wohill J F (Eds), *Behavior and the Natural Environment,* Human Behavior and Environment Volume 6, Chapter 6, pp205-232, Plenum Press, New York.

Lynch, K. (1960). *Image of the City,* MIT Press, Cambridge, Massachusetts.

Newman, O. (1972). *Defensible Space: Crime prevention through urban design*, Macmillan, New York.

Power, A. (1987). *Property Before People: The management of Twentieth-Century Council Housing*, Allen and Unwin, London.

Scottish Office (1991). *The Impact of Environmental Design upon the Incidence and Type of crime*, 1 Crown Copyright.

Vance J. E (1977) *This scene of Man*, Harper and Row, New York.

Valentine, G. (1992). "Coping with fear of male violence: Women's use of precautionary behaviour in public space", paper presented to the *Anglo German conference, Women and the City*, University of Hamburg.

Walker M.A. (1983) "Some Problems in Interpreting Statistics Relating to Crime" *Journal of the Royal Statistical Society (A)* v146, pp281-293.

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