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## **Critically Reviewing the Theory and Practice of Secured By Design (SBD) for Residential New-Build in Britain.**

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### **Abstract**

The Government has projected a need for some 4.1 million homes by 2021 (DETR, 1999a) and a stated policy objective of achieving 60% of new-build housing on 'brownfield' sites (DETR, 1999b). The government is clearly committed to 'designing out crime' (DOE, 1994, CDA, 1998) and this paper explores Secured By Design scheme (SBD), one of the most important community safety initiatives available to planners to assist in achieving these complex aims. The rise in premises' liability cases (Hanson, 1998) and the Human Rights Act, (HRA, 1998) illustrate the increasing importance of tackling such issues. A critical review of both the theory and practice of SBD is presented as it applies to the new-build residential environment in the British city. The implications of reviewing SBD's theoretical basis and its application are discussed.

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## **Critically Reviewing the Theory and Practice of Secured By Design (SBD) for Residential New-Build in Britain.**

### **Introduction**

Crime and nuisance are omnipresent in modern urban society. Indeed, according to the Home Office, recorded crime has increased on average by 5.1% every year since 1918 with property crime representing 91% of all recorded offences in 1997 (Home Office, 1999). However, this official measurement of crime may not be as robust as it might at first appear. Indeed, the British Crime Survey's (BCS) findings indicated that between 1999 and 2000 crime had reduced by approximately 12% (Kershaw *et al.*, 2001). Despite such variations in measuring crime it is nevertheless consistently reported to be one of the most important concerns for the general population in terms of quality of life (Social Exclusion Unit, 1998; Devon County Council, 1998; DETR, 1999c; Rogerson, 2000).

The increasing social, economic and political importance of crime is reflected by government responses that seek to tackle both crime and the underlying causes of crime. Such initiatives include the Crime and Disorder Act 1998 (CDA, 1998), the Police Reform Act (2002) the Crime Reduction Programme, the Social Exclusion Unit, the Urban Regeneration Programme, New Deal, the Urban and Rural White Papers, forthcoming legislation focusing on such as anti social behaviour and the ongoing review of the government's Planning Out Crime Circular 5/94 (DOE, 1994).

In the light of the government's household projections, a policy objective of developing 60% of new-build housing on brownfield and predominantly urban, inner city locations has emerged within a broader policy framework for safer, sustainable and more liveable housing (DOE, 1994; CDA, 1998; DETR, 1998a; DETR, 1998b, Social Exclusion Unit, 1998, DETR, 1999b; DETR, 1999c; DETR 2000). Significantly, there has been an increase in the number of premises' liability court cases in America (Gordon and Brill, 1996; Hanson, 1998) – where failure to provide 'reasonable' security and appropriately designed built environments has resulted in litigation. Gordon and Brill (1996, p3) observe how the emerging discipline of designing out crime "has done much to establish the reasonableness of certain crime prevention approaches and, thus, the unreasonableness of property owners who fail to take widely accepted steps".

Some lawyers have suggested that such ideas may soon be adopted in the UK (Infield, 2000). Indeed in the British context Moss and Pease (1999) cite various 'designing out crime' studies and concluded; "there are thus many circumstances in which an individual citizen, a business or a residents' group could plausibly argue that a local authority had breached section 17[CDA 1998]". Furthermore, within the Human Rights Act 1998 (HRA, 1998) Article 1 concerns the right to peaceful enjoyment of possessions, while Article 8 details the right to enjoy family and home life. How such articles within the Act are interpreted in relation to crime and the fear of crime will provide interesting precedents. Indeed, Parker (2001, p6) claims that the HRA 1998 "has raised concerns about the future of planning becoming increasingly litigious"

The new-build housing debate however, has largely focused on where such new-build developments should take place. This paper explores the issue of the design of new-build housing rather than its potential location. Indeed, the possibility of evaluating the criminogenic capacity of housing design in new-build developments has been examined (Cozens *et al.*, 1999a, 1999b). As one of the major government initiatives for designing out crime, SBD is discussed and critically reviewed and its potential for providing residential environments which are ‘safer’, less vulnerable to crime and promote the quality of urban living is investigated.

### **Design and Crime**

One useful starting point in understanding the relationship between housing design and crime is to analyse the available crime statistics. Home Office recorded crime statistics are available for each of the forty-three police force areas (Home Office, 2000) and potentially provide a consistent, if limited database in terms of housing design at the micro level of analysis. However, gaining access to such detailed data is restricted.

The British Crime Survey (BCS) was developed in the 1980s and provides self-reported data from a sample of around 40,000 respondents concerning their experiences of crime and attempts to provide a more realistic assessment of the totality of crime. The BCS estimated that Home Office recorded crime statistics may only represent some 24% of actual crime (Home Office, 1999). Moreover, the remaining 76%, often referred to as the ‘dark figure’ of crime (unreported and unrecorded crime), may well be located where, according to the official statistics crime is low. Indeed, such statistics may systematically and routinely underestimate crime levels and create false impressions of where (and when) crime takes place. However, whilst acknowledging such shortcomings, the findings from the BCS provide an opportunity to gain some limited insights (see Table 1).

**Table 1            The British Crime Survey - Burglary by Dwelling Type.**

<u>Dwelling type</u>	<u>Burglary rates per 1000 dwellings</u>
Detached houses/bungalows	23
Semi-detached house/bungalow	32
Terraced housing	39
Purpose-built flat/maisonette	45

Source: adapted from Kershaw *et al.*, 2001, p56.

Clearly, certain types of housing appear to be significantly more vulnerable to burglary. However, the varying levels of maintenance and the overall condition of each dwelling is not considered within the survey data and the crucial influence of ‘image’ is also not incorporated. Another example would be houses in multiple occupancy (e.g. houses typically converted into flats or bed-sits) which are not included in the above categories but are seen by many to be one of the most vulnerable of property types. The aggregation of the survey data relating to burglary of the dwelling, therefore, arguably obscures the reality that exists at both the national and the localised level. The BCS also provides some disaggregated data concerning burglary rates and various aspects of housing, households and location. Indeed, as Table 2 clearly illustrates, understanding burglary is certainly

considerably more complex than just analysing housing design in isolation.

**Table 2. The British Crime Survey - The Context of Burglary.**

<u>Context</u>	<u>Burglary rates per 1000 dwellings.</u>
Average in England and Wales	34
Flats	45
Inner city areas	54
Council estates areas	60
Head of household unemployed	70
Head of household 16-24	76
Areas with high levels of physical disorder	79

Source: adapted from Kershaw *et al.*, 2001, p25.

Crucially, the BCS is also limited by the fact that it is currently based upon a sample survey and therefore is restricted in terms of its appropriateness for more locationally-specific spatial comparisons. Clearly, our understanding of housing design and crime requires more critical multi-variable analysis than that provided by using the Home Office's recorded crime statistics and BCS survey data in isolation, or in combination.

The Crime and Disorder Act 1998 requires every local authority and police partnership in England and Wales to prepare local strategies to address crime and the fear of crime based on crime audits of their areas<sup>2</sup>. Furthermore, various reports have highlighted the need for improved urban design (DETR, 1998a; DETR, 1998b, Social Exclusion Unit, 1998, DETR, 1999b; DETR, 1999c) to reduce migration to the countryside (DETR, 1999b) and to create safer, more liveable cities for the increasing number of projected households in the future (DETR, 1999a). The capacity to 'design out crime' from the built environment has therefore become a recent crime prevention initiative that offers a pro-active approach to resolving the ubiquitous problem of crime and in delivering sustainable urban communities (Cozens, 2002, Knights *et al.*, 2002). The government's 'Planning Out Crime Circular 5/94' (DOE, 1994, p1) states "crime prevention is capable of being a material consideration when planning applications are considered" and specifically recommends SBD as best practice. However, this document is currently being reviewed and updated to reflect changes in theory, practice and policy during the last decade.

SBD is theoretically underpinned by the work of Jacobs, (1961) and Jeffery (1971) and particularly, Newman (1973) (Steventon, 1996; Pascoe and Topping, 1998; Armitage, 1999). Newman's theory of Defensible Space (1973) was based on research conducted in American cities and asserts that the physical environment has the potential to create *perceived* zones of territorial influence and surveillance opportunities. The urban environment could also influence the perception of

<sup>2</sup> Crime audits provide a potential reservoir of localised information that if organised at a national level would enable crime analyses to be far more detailed and focused.

uniqueness, isolation and stigma and the citizen's sense of security in the wider environment. For Newman (1973, p3), defensible space is defined as: "a surrogate term for a range of mechanisms – real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance – that combine to bring an environment under the control of its residents". Crucially, such ideas (and SBD) rely on the assumption that the offender is involved in some form of rational decision-making process in forming a judgement to offend at a specific time or place and that the design of the physical environment can influence this decision.

### **Secured By Design (SBD) - Background and Theory**

SBD was launched in 1989 "by police forces in the South East of England to counter household burglary" (Pascoe and Topping, 1998). It is defined by the Association of Chief Police Officers (ACPO, 1999, p1) as: "a police initiative to encourage the industry to adopt crime prevention measures in development design to assist in reducing the opportunity for crime and the fear of crime, creating a safer and more secure environment" SBD is a broad-based initiative and is applicable to new-build housing, multi-storey dwellings, sheltered-accommodation, commercial buildings and refurbishments. Further developments to the scheme include Secure Stations and Secured Car Parks. However, this paper focuses on SBD as it specifically relates to new-build urban residential developments.

The scheme is endorsed by ACPO and the Home Office Crime Reduction Unit following consultation with the Office of the Deputy Prime Minister (ODPM). Concomitant with this initiative was the phased introduction of architectural liaison officers (ALOs<sup>3</sup>) within the forty-three police forces of England and Wales. This is a scheme whereby the police offer advice (which it is not obligatory to accept) to housing developers concerning new-build housing projects and where modifications to existing designs are taking place. Relaunched at the Royal Institute of Chartered Surveyors (RICS) in 1999, the scheme is set out in the Secured By Design website<sup>4</sup> and presents the basic principles of SBD, discusses the concept and comments on the marketing of the scheme.

The website presents three pages of guidance on 'the development' of new housing and eight pages on aspects of the 'physical security' of the properties which should be incorporated in order to meet these minimum standards. ACPO (1999) also state "equal weighting should be given to both the environment and physical security".

Summarily, the guidance for 'the development' of new homes recommends:

- Roads and footpaths should be clearly defined and should not undermine defensible space, (which is not explicitly defined).
- Regular maintenance of shrubs and foliage to enhance surveillance.
- BS5489 lighting standards need to be met.
- Public / private space in communal areas should be clearly defined, secured and visible to residents.
- Naming and numbering of dwellings is required to assist residents and emergency services and vandal-resistant locational maps should be considered.
- Clear demarcation of public / private dwelling boundaries.

<sup>3</sup> In some police forces ALOs are designated as Crime Prevention Design Advisors

<sup>4</sup>See <http://www.securedbydesign.com>

- Utility meters should be located outside the home.
- Within curtilage car parking, otherwise vehicles should be visible to residents.

The guidance for 'the physical security' of new homes recommends the use of specific standards set out in the UK Accreditation Service (UKAS) in the following areas:

- The door itself, the door frame, glazing panels, locking systems, hinges, anti-lift devices and recesses for all front, back, side, patio and garage doors. 'Enhanced security' performance standards for doors (BSI PAS 24-1, BSI PAS 23-1) and windows (BS7950) have recently been incorporated.
- Communal entrances (maximum of eight households sharing), consideration of CCTV when this number is exceeded and a requirement for access control systems when four or more flats are served by a common entrance.
- Security lighting should be designed to illuminate external doors and other vulnerable areas (e.g. gardens).
- Intruder alarms (standards for wire and wireless systems) should be installed.

The comprehensive website generally recommends the promotion of busy movement routes through areas but states that these should not undermine defensible space (which is *not* defined). The website also provides information and emphasises such as the creation of unobstructed views of neighbouring properties (without compromising the residents' needs for privacy) and mixed-use dwellings for generating occupation and footfall throughout the day which can provide increased opportunities for natural surveillance, community interaction and environmental control. The website also provides some detail on achieving symbolic barriers (rumble strips, change of road surface, colour or texture, pillars or narrowing of carriageways) in order to give the impression that a development is private and in controlling access since "a key element in the security of any development is to discourage casual intrusion by non-residents through the development" (quoted in Pascoe, 1999, p14).

### **Secured By Design (SBD) – Practice, Policy and Process**

Since 1989, at least 35,000 homes in Britain have been constructed to SBD standards on 3,700 estates involving 630 separate companies (Pascoe and Topping, 1998). Indeed, Schneider and Kitchen (2001, p274) estimate that this represents approximately 2-3% of all new-build housing constructed in the period 1989-1996. Three recent SBD evaluations (Armitage, 1999; Pascoe, 1999 and Brown, 1999) have all reported positive results in terms of reduced levels of crime and fear of crime.

Armitage (1999) utilised Home Office recorded crime statistics and a residents' survey and studied 25 SBD estates and 25 non-SBD estates, comprising some 660 and 522 dwellings respectively. These were matched in terms of location, age, housing tenure and environmental risk factors (estates were selected which scored between 0-2 on Winchester and Jackson's Environmental Index of Risk, 1982). Armitage (1999) found that the SBD sample "experienced a far lower prevalence of crime than... the non-SBD sample". Fewer residents of the SBD properties reported being the victims of crime than non-SBD residents and they also reported feeling less unsafe at night whilst alone and whilst on the streets. On two refurbished

estates where a 'before and after' analysis was available 66% and 50% reductions in crime were recorded. Armitage (2001) also reported that the effectiveness of SBD in reducing crime had increased significantly between 1994 and 1998.

Brown (1999) studied Home Office recorded crime statistics relating to SBD and non-SBD designs (1,682 and 7,491 Housing Association properties respectively) and found that the SBD properties "suffered a burglary and vehicle crime rate of at least a third of that suffered by non-SBD properties and two thirds the rate of criminal damage" (Brown, 1999, p58). The study reported a 40% reduction in burglary from the dwelling and a 25% reduction in vehicle offences for SBD properties. The findings also supported the effectiveness of both surveillance and target hardening in reducing levels of recorded crime.

Pascoe (1999) utilised Home Office recorded crime statistics and data derived from a self-report questionnaire survey of the residents of ten different public sector housing estates across England and Wales. His study found that both residents' perceived levels of crime and recorded crime had been reduced following modifications to SBD standards in 'before and after' comparisons with non-SBD properties. These included flats, semi-detached houses, terraced houses, maisonettes and detached houses.

In the Home Office Briefing Note 7/00, Armitage (2000) reports that the additional cost of building a three-bedroom house to SBD standards varies between £90 and £1,259 (depending on the developers operating standards) and notes that the average cost of burglary to the victim is £1,670. Armitage (2000, p4) argues "the extra expenditure required to build or refurbish housing to SBD standards would appear to be a worthwhile investment". The initiative has gained limited political support and momentum to the extent that it is now compulsory for all new-build social housing projects in Wales to be built to SBD specifications.

At a recent seminar on 'Crime and the Environment' at New Scotland Yard (for a review see Cozens and Plimmer, 2000), it was tentatively accepted that SBD can be an effective approach, although discovering and understanding the precise reasons why, was still an ongoing research objective. At the conference, Brown (2001) highlighted a lack of understanding for the current theoretical support for SBD; namely defensible space. However, the Minister of State responsible for housing expressed disappointment at the disinterest exhibited by the private sector in applying SBD (Michael, 1999). Indeed this is one of the most unsatisfactory aspects of SBD. In 2001-2002 some 166,000 housing units were built by the private sector and some 16,700 by the public sector. In excess of 90% of new houses are sold to owner-occupiers and the proportion of new-build public sector homes has fallen by over one third in the last 5 years, such that currently, about 70% of the UK housing stock is owner occupied. Although no data is readily available, it is estimated that private developers currently commission less than 10% of SBD assessments. It is thus self-evident that the potential impact of SBD on lowering crime and incivilities is significantly constrained. Consequently, the SBD scheme is having little impact on the vast majority of British housing. An essential step is to understand how the principles and practice of designing out crime can be applied in a way which will appeal to private developers.

In policy terms, Section 17 of the Crime and Disorder Act (CDA, 1998) imposes a duty on each local authority to “exercise its functions with due regard to ... the need to do all that it reasonably can to prevent crime and disorder in its area”. Local crime prevention strategies must therefore consider crime *and* the fear of crime. Indeed, Moss (2001) presents several examples of case law where crime was found to represent a material consideration and the potential for fear of crime has recently been utilised in the refusal of planning permission for several developments (Seddon, 2001). The DOE Circular 5/94 explicitly recommends SBD and sets out basic designing out crime principles claiming the scheme “provides guidance for developers and planning authorities on best practice” (DOE, 1994, p2).

In the specific process of SBD accreditation, housing developers are encouraged to liaise with their local ALO before any plans and proposals are drawn up. A formal application (for SBD) is then made requiring the completion of a detailed proforma; when the ALO is satisfied that the standards have been agreed and will be met the developer is entitled to advertise the development as SBD approved. The certificate is not awarded until after completion of the development and a detailed inspection takes place to confirm that the standards have been met. Schneider and Kitchen (2001, p256) reflect upon the influence of SBD and comment that the scheme “continues to affect the quality of what gets submitted to local planning authorities and what gets built all over the country”.

### **Evaluating SBD**

A review of SBD research, applications and documentation has raised several issues regarding the theory, the practice and its usefulness both as a crime prevention initiative and its impact on new-build housing schemes. Crucially, a review of the three most recent and seminal evaluations of SBD (Armitage, 1999; Brown, 1999 and Pascoe, 1999) clearly do not singularly focus upon housing design and how this variable might influence the performance of SBD properties compared with similarly designed non-SBD properties.

Armitage (1999) makes no specific reference to the design of properties or the layout of the streets. It is reported that the SBD properties were less vulnerable than their ‘matched’ non-SBD counterparts but the reader is not presented with any detailed statement of the housing designs. Consequently, the study demonstrates that SBD works – without establishing why – and target hardening, rather than design per se could well be the crucial factor or vice versa.

Brown (1999) collected data on some 9,173 Housing Association properties in Gwent (South Wales) but the study did not set out to analyse crime and fear of crime in relation to the design or the street layout of the 1,682 properties (Brown, 1999, p60) which met SBD standards. Instead it focused upon the effectiveness of SBD compared with non-SBD properties and again target-hardening improvements to the SBD properties potentially represents the dominant variable in the comparison. Crucially, however, 3.5% of the SBD sample related to flats or shared accommodation compared to 10.1% of the non-SBD sample. Such properties have been shown to be more vulnerable to crime (Kershaw *et al.*, 2001) and may partially obscure the findings. Furthermore, the recorded burglary rates at night (6.00 pm – 6.00 am) were significantly higher than in the non-SBD properties.



Pascoe (1999) collected self-reporting survey data from residents and found that perceptions of safety were associated with the perceived privacy of the street. Although Pascoe's study analysed SBD applied to a range of design types the actual design / layout modifications are not explicitly discussed.

This is not a critique of these three studies rather it highlights the fact that although there is confidence that SBD works, both critics and proponents are still unaware as to precisely why it works. Topping and Pascoe (2000, p77) comment; "the biggest challenge now is to identify which parts of the scheme are having the desired effects". Indeed, on review, the studies demonstrate that a target hardened property is safer and perceived to be safer than similar properties which are less obviously secured with target hardening measures – but provides few insights into housing design as such.

### **The Design Versus Target Hardening Debate**

Notwithstanding the comments made above, it has been argued that SBD concentrates too extensively on 'target hardening' and defensive measures and not sufficiently on the design of the spaces that result or whether people would positively choose to reside in such developments (Rudlin and Falk, 1995, p56). Furthermore, Pascoe (1993a) concluded that ALOs over emphasised 'target hardening' and that this emphasis exceeds the support provided by published research evidence (Pascoe and Topping, 1998). Studies by Brown and Altman (1984) and Allat (1984) demonstrated that 'target hardening' had an impact on crime but the majority of this research suggested that its role was at best neutral (Maguire, 1980; Mayhew, 1984) whilst at worst it may actually increase the risk of crime (Bennett and Wright, 1984). Indeed, Pascoe and Topping (1998) found more support in the literature for the second element to SBD (target hardening is the first), that burglars are 'rational opportunists' and interpret learned cues from the environment in their decision-making process to offend, this finding is also supported by Pascoe (1993b).

Crucially, within the SBD literature (ACPO, 1999) and website, no explicit reference to any particular housing design is to be found. The defensible space concepts of SBD, as they currently relate to 'the development' are discretionary and subject to interpretation. Physical security and the target hardening elements are highly explicit and details of approved manufacturers and suppliers are also provided. Although the highly complex nature of the relationship between design and crime does require such a discretionary approach, the imbalance arguably encourages emphasis on the prescriptive and narrow dimension of physical security. This disparity is certain to be increased if the ALO does not have an informed understanding of the principles of SBD as they relate to housing design and layout. This is further weakened if the ALO does not have confidence in the process. This confidence has been weakened further by criticisms by a small number of vociferous academics promoting opposing viewpoints. Such an approach is perfectly valid in the academic world but is totally alien to police culture where questioning authority is routinely discouraged.

### **Reviewing SBD in Action**

In consideration of the discretionary approach to 'the development' of new housing and the absence of an explicit and consistent policy preference in the guidelines for

a particular type of housing design, it is noteworthy that SBD was initially dominated by the use of the cul-de-sac layout, at low densities and most predominantly in suburban areas (Steventon, 1996; Schneider and Kitchen, 2001). It is argued therefore, that initial applications of SBD lacked flexibility. The accreditation was predominantly awarded to one design configuration (cul-de-sacs) rather than applying the principles to the full range of housing designs. This trend ignored the defensible space qualities that may be innate within other designs, particularly the terraced design. Indeed, the intervisibility and enhanced surveillance provided by terraced housing has been supported by a number of researchers (Newman, 1975; Pascoe, 1993b; Steventon, 1996; Hillier and Shu, 2000a; Cozens *et al*, 2001) and the UK government, explicitly in the DETR Bulletin No. 32 – The Layout of Residential Roads and Footpaths (DETR, 1998a). Indeed, Pascoe (1993b) claims that streets of terraced properties arranged in grids are considered by burglars to be more secure than many cul-de-sacs.

Hillier (Fairs, 1998) is in agreement with this insight. Although defensible space was associated with the cul-de-sac (possibly as a result of Newman's application of his ideas to privatised 'enclaves' in the 1990s), he commented (1973, p150) "...the decision to make the private dwelling inward-looking has removed much of the opportunities for natural surveillance". Newman (1975) also supported both the presence of users and the existence of through movement of traffic and footfall; "traditional residential streets are safe because they have pedestrian and vehicular movement along them and occasionally, police patrols; and most importantly, they are supervised by residents in bordering buildings" (ibid. p59). This crucial intervisibility is vital to defensible space; "to feel continually that one is under observation by other residents ... can have a pronounced effect in securing the environment for peaceful activities" (ibid. p78).

Similarly, research being carried out at the University College London, at the Space Syntax Laboratory (Hillier and Shu, 2000a; 2000b) claims "on the whole, linear integrated spaces with some through movement and strong intervisibility of good numbers of entrances (highly 'constituted') are the safest spaces" (Hillier and Shu, 2000b, p4). This research, which analysed a range of housing designs including cul-de-sacs, found that certain configurations were significantly more at risk from burglary. In particular, risk of crime was higher for cul-de-sacs, which were linked together by pathways and experienced low pedestrian flows (Fairs, 1998). However, a study by Brantingham and Brantingham (1993) has raised a series of questions concerning crime risk and the volume of pedestrian and traffic flows along access routes.

Despite these findings, Pascoe and Topping (1998, p166) commented that the cul-de-sac still represented "the preferred option for most crime prevention officers". Steventon (1996) claims that the prevailing belief that terraced designs are in conflict with defensible space theory is the main reason for the exclusion of the design layout from current SBD advice. The findings from this and other studies certainly raise doubts about SBD relying on any one design solution. Reinforcing such a perspective Steventon (1996, p243) notes that most architectural liaison officers only receive limited formal training in the form of a two-week course that teaches police

officers how to read site plans, submit a planning application and introduces defensible space criteria “set in tablets of stone”.

This is not to argue that designs such as the cul-de-sac design do not have a role to play, but this should represent one design option rather than *the* design solution. For example, a cul-de-sac that appears private, has some of the houses occupied during the day, has symbolic barriers, does not promote pedestrian throughput and has back-to-back gardens promises to be one of the potential solutions to delivering successful SBD applications.

In view of the objectives of Planning Policy Guidance Note 3 to achieve ‘better design’, safe, sustainable and liveable communities with average urban residential densities of between 30 and 50 dwellings per hectare (DETR, 2000). It is highly debateable as to how far SBD can contribute to this aim in its present form as it is predominantly executed in suburban settings for the public sector and at low density (Steventon, 1996).

Indeed, commenting on the flexibility of SBD, Pascoe (Pascoe, 1992, 1993a, 1993b) recommends “returning to the greater flexibility, shown by some of the designers, at the creation of the scheme” (in Van Soomeren and Woldendorp, 1996, p185). Furthermore, Topping and Pascoe (2000) assessed the impact of the SBD scheme in its first ten years (1989-1999) and concluded that there have been significant developments in legislation (DOE, 1994; CDA, 1998), that now make crime a material consideration in planning applications. Furthermore, there have been extensions to the scheme to include such as refurbishments, car parks, commercial buildings, sheltered accommodation and flats and the Dutch have adopted and adapted the scheme. However, Topping and Pascoe (2000, p72) argue “the only changes to the specifications of the scheme have been the fine tuning of physical security criteria”.

### **Re-inspection**

Crucially, much research suggests that the maintenance and upkeep of the urban environment can reduce crime (Ross and Jang, 2000; Kraut, 1999) and deter offenders and is a vital component of the design-affects-crime debate (Wilson and Kelling, 1982; Ross and Mirowsky, 1999; Cozens *et al.*, 2001). However, there is currently a lack of consideration within SBD for the potential physical decline of such estates over time, as a result of poor management and lack of maintenance procedures and a dearth of detailed monitoring. SBD accreditation is ‘for life’ and unlike the Secure Stations and Secured Car Parks schemes, there is no reassessment or re-inspection. Whereas, other countries which have adopted and adapted the scheme, such as in Holland, seek to vigorously ‘police it’ with examples of certification being revoked if standards fall below a predetermined benchmark. The SBD literature acknowledges this point claiming that: “It is essential that a programme of management is in place to maintain the physical development and its environment” (ACPO, 1999, p4). However, in practice this appears not to be operationalised. This insight is not presented as a negative perspective on the initiative, but rather as a positive contribution to promoting the long-term viability of SBD projects. It is argued that such initiatives could represent a ‘cradle to the grave’ approach to new-build housing design where the long-term safety, sustainability and

liveability of such estates is maintained from the design stage to a continued management phase and finally through to demolition and redevelopment (the 'whole life scenario').

Periodic and planned liaison with ALOs and housing estate managers can assist in sustaining a physical environment that is valued by residents and safe, retaining its 'positive' image throughout its useful life. A multi-agency approach incorporating those managing the urban fabric, cultural and community groups, the police and urban analysts should provide a framework that will sponsor sympathetically designed and safer spaces in which communities can be encouraged to increasingly participate in their own policing.

It is suggested the SBD can be significantly strengthened by considering the long-term management of such estates. The fact that currently the initiative is 'for life' will arguably reduce the effectiveness of SBD, especially if such estates begin to become poorly maintained and exhibit signs of vandalism, decay and dereliction. A re-evaluation and re-accreditation system, similar to the Secure Stations and Secured Car Parks schemes seems to be the logical way forward. Indeed, Armitage (2001) has recently shown that some approved SBD estates are already beginning to display multiple indications of physical and social decline. Such issues of re-inspection are clearly an essential component of providing critical evaluations of SBD applications in the long term. Until this takes place, evaluating the viability, impact and sustainability of SBD remains unscientific and primarily a matter of opinion.

### **Policy**

Although there is clear government support for SBD as a policy initiative, designing out crime (e.g. DOE circular 5/94) is advisory in policy terms, discretionary in practice and crucially, receives no government funding. Section 17 of the CDA 1998 states that crime prevention **can be** rather than **must be** considered as a material consideration in the decision to grant planning permission. Crucially, the decision whether to adopt an SBD scheme for new housing lies solely with the developers and planning authorities are currently advised to consult with ALOs in assessing new developments (DOE, 1994). However, ALO advice is non-mandatory and although planning permission for developments is increasingly being refused on crime prevention grounds, planning applications and the planning appeals process are certain to be more controversial as a result of such a discretionary policy framework. Moss and Seddon (2001) note that PPGs have generally overtaken government circulars as the main source of national policy guidance. However, they conclude; "at present reference to the issue of community safety is limited" (Moss and Seddon, 2001, p27). They also note an example of an evolving crime and disorder partnership in Wakefield Metropolitan District where an ALO from West Yorkshire police has been seconded to the development control team – enhancing the community safety strategy. Crucially, the authors (ibid, p29) also suggest "it should not be assumed that all planning officers will be fully conversant with Circular 5/94 or the implications of s.17 of the CDA [1998]".

### **Training – ALOs, Planners and Housing Developers**

ALO training is arguably inadequate (Steventon, 1996). The dissemination of theoretical knowledge and operational experiences between existing ALOs and more

extensive training that relates to the complex issues of surveillance, territoriality and 'image' and how defensible space may (or may not) be decoded may help to strengthen the SBD award. Indeed, current training is limited to a two-week course with the option (often limited by funding and operational constraints) of further professional development by attending several University-based courses. These include the Certificated Programme in Community Safety and Crime Prevention managed by the Safe Neighbourhoods Unit at the University of the West of England and a range of short courses provided by the Planning School at Oxford Brookes University. Furthermore, it is debatable how many ALOs are actually solely responsible for designing out crime – many are routinely employed in other positions with the inevitability of competing priorities. The knowledge base of ALOs is often largely dependent upon individual motivation, home study and liaison with supportive planners and architects willing to share their knowledge of the concepts and experiences of designing out crime (often limited themselves). Currently, ALOs find themselves with only a restricted knowledge of operationalising the full range of principles based upon defensible space dominated by an extensive, albeit prescriptive array of target hardening mechanisms (windows, doors, locks and alarms).

Furthermore, although the courses above are being completed by a small number of planners, most planners and housing developers are likely to receive only a cursory insight into the complexities of designing out crime. Indeed, the government's Design Against Crime in Education (Home Office and Department of Trade and Industry, 2000, p28) studied thirty-six institutions offering design courses at undergraduate and postgraduate level and found that "currently, environmental, disability and demographics issues are perceived as of greater relevance to design than crime".

### **Street Lighting**

In the SBD studies of Brown (1999) and Pascoe (1999), street lighting was a crucial factor affecting the effectiveness of SBD after dark. Brown's (1999) study revealed that SBD properties had higher rates of recorded burglary than non-SBD properties after dark and that there was a noticeable increase in such offences within the SBD sample. Furthermore, Pascoe (1999) reported that 22% of residents of SBD accredited properties felt that street lighting was inadequate and the study recommends that SBD could be enhanced by concentrating on improving street lighting (and also controlling and reducing through movement and making the streets feel more 'private'). Armitage (1999) did not provide any temporal analysis of crime rates in her study but her findings demonstrated that residents of SBD estates reported that they felt safer after dark, both in the home and on the street.

Farrington and Welsh (2002) discuss various theories which explore why improved lighting may reduce crime. Primarily, upgraded street lighting provides increased surveillance opportunities (by improving visibility and encouraging more 'eyes on the street' in the way of increased activity). This thinking is supported by those advocating situational crime prevention who argue that physical alterations (including lighting) can reduce opportunities and rewards for offenders whilst also increasing the risk of being seen and potentially apprehended. Additionally, improved lighting can enhance community pride and cohesion, as Farrington and Welsh (2002, p30)

argue, “[lighting] can act as a catalyst to stimulate crime reduction through a change in the perceptions, attitudes and behaviours of residents and potential offenders”.

Crucially, a recent evaluation of the British street lighting standard BS5489 (Cozens *et al*, 2003), which is the statutory requirement, found that many streets do not currently meet the standards set and that the standards themselves may require re-evaluation. Cozens *et al.*, (2003) reported that since levels of lighting are dictated by Home Office recorded crime statistics and road traffic and pedestrian flows, such a process is myopic, potentially creating places with low lighting levels where fear of crime may be high, while the Home Office recorded crime statistics may be low. Furthermore, many street lighting studies suggest upgrading lighting levels to meet BS5489 (indicating that they did not meet this benchmark). In the three SBD studies mentioned above, improving the lighting levels to BS5489 to satisfy the SBD requirements was carried out – but lighting was nevertheless still identified as being problematic in two of these studies (Brown, 1999; Pascoe, 1999) highlighting the limitations associated with BS5489 and the effectiveness of SBD after dark.

### **Recommendations**

Notwithstanding the redrafting of the government’s Planning Out Crime Circular 5/94 (DOE, 1994) several recommendations are provided to suggest how SBD could be revised and applied throughout the urban fabric;

- The collection, compilation, analysis and dissemination (and scientific interrogation wherever possible) of the full range of SBD schemes as they have been variously applied across the UK (to grid layouts incorporating terraced, semi-detached and detached designs, cul-de-sacs, flats and other applications) is required. This should explicitly include schemes which have subsequently been accepted as a ‘success’ as well as those considered as ‘failures’.
- A thorough review of SBD principles and guidelines is required to probe the following issues;
  - i. redressing the current imbalance balance between design / layout and target hardening measures;
  - ii. dispensing with the continuing preference (in practice) for the cul-de-sac design;
  - iii. applying the principles of Defensible Space (Newman, 1973) rather than a ‘generic’ (and highly controversial) representation;
  - iv. reviewing the lighting standards currently recommended and implemented in association with SBD;
  - v. establishing and clarifying what organisations are responsible for the long-term management of SBD estates and the creation of a framework by which this can be achieved;
  - vi. researching precisely what makes SBD a ‘success’ or a ‘failure’.
- A thorough review and extension of the training currently provided to ALOs, planners and housing developers on the principles of designing out crime and defensible space (Newman, 1973) is required. Furthermore, strengthening the relationships between these key players and the promotion of a synergy of ideas in the planning applications process appears necessary. Consideration could be given to the innovative approach adopted by Wakefield Metropolitan

Council, of incorporating an ALO permanently onto the design control team (Moss and Seddon, 2001).

- The movement away from a policy and process framework that is currently static, advisory and discretionary and its transformation into one that is robust, mandatory and dynamic.

## **Conclusions**

This review of SBD has revealed that evaluations have reported that such an approach does reduce crime and the fear of crime. However, further analysis suggests that SBD could be revised and significantly improved. Currently, it lacks flexibility concerning the issue of design and initially over-emphasised one design; the cul-de-sac. This produced a mismatch between SBD in theory and in practice. Operationally it is currently short-term and episodic in character and arguably over relies on 'target-hardening' measures. Although 'target hardening' can be effective its long-term contribution requires systematic analysis as part of any SBD initiative. Furthermore, SBD is discretionary and without central government funding (except for social housing in Wales). Additionally, the vagaries of the planning process and market considerations combine to further limit the adoption of SBD as an initiative.

Crucially, it may be the perception of SBD as an over-prescriptive, target-hardening exercise for low-density, suburban cul-de-sacs in predominantly 'privatised' spaces that serves to discourage many house-builders and planners from considering SBD as a viable and worthwhile option.

Indeed, Schneider and Kitchen (2001) discuss two initiatives, which sought to utilise and interpret the same defensible space principles of designing out crime in their developments. In Hulme in Manchester's inner city, redevelopment was influenced by the 'New Urbanist' movement and set out to reject the SBD approach. In contrast, Salford's Crime and Disorder Reduction Strategy preferred to use SBD as one of their available tools. Crucially, Schneider and Kitchen (2001) identify permeability and levels of street activity as being variously interpreted as they relate to defensible space. 'New Urbanism' seeks to increase both the permeability of areas and the street activity and interprets defensible space and SBD as being supportive of more 'private' areas with limited permeability and a greater emphasis on resident-only based activity.

However, Schneider and Kitchen (2001) observe that whilst there are distinct similarities in terms of how defensible space and designing out crime is interpreted and implemented, there also appears to be a clash of ideas particularly relating to permeability. They argue such approaches produce "a range of choices that people ought to have available to them in or on the edges of our city if urban / metropolitan living is to be encouraged" (Schneider and Kitchen, 2001, p225). Neither of these options is superior, they are simply different and will result in markedly different environments emerging. Crucially, however, the police are key players in Crime and Disorder Partnerships across the country and their input will tend to be informed predominantly by SBD principles and how these are currently interpreted and implemented. The increase in premises' liability (Hanson, 1998) and the HRA 1998 certainly strengthen the need for such partnerships. Crucially, the Planning Inspectorate is bound by the conditions of the HRA 1998 (Moss, 2001).

SBD has been shown to reduce crime and the fear of crime (Armitage, 1999; Brown, 1999 and Pascoe, 1999). However, 97-98% of new-build housing between 1989 and 1996 was not constructed to SBD's *minimum* standards (Schneider and Kitchen, 2001). Describing SBD, Felson, (1998) suggests that much of its underlying principles are 'common sense' (in Armitage, 1999, p2) but the scheme itself is clearly not yet common practice.



## References

- Allatt, P. 1984. Fear of Crime: The Effect of Improved Residential Security on a Difficult to Let Estate. *The Howard Journal*. Volume 23, pp170-182.
- ACPO. 1999. The Secured By Design Award Scheme. Association of Chief Police Officers.
- Armitage, R. 1999. *An Evaluation of Secured By Design Housing Schemes Throughout the West Yorkshire Area*. University of Huddersfield.
- Armitage, R. 2000. *An Evaluation of Secured By Design Within West Yorkshire*. Home Office Briefing Note 7/00. Crown Copyright, London.
- Armitage, R. 2001. *Secured By Design in West Yorkshire*. Presentation at the *Architectural Liaison Officer's Conference*, (ACPO), Blackpool Hilton Hotel, Blackpool, May 2<sup>nd</sup>- 4<sup>th</sup>.
- Brantingham, P.J. and Brantingham, P.L. 1993 Nodes, paths and Edges: Considerations on the Complexity of Crime and the Physical Environment. *Journal of Environmental Psychology*. Volume 13, pp3-28.
- Bennett, T.W. and Wright, R. 1984. *Burglars on Burglary*. Gower, Aldershot.
- Brown, B. and Altman, I. 1984. Territoriality, Defensible Space and Residential Burglary: An Environmental Analysis. *Journal of Environmental Psychology*. Volume 3, pp203-220.
- Brown, J. 1999. *An Evaluation of the Secured By Design Initiative in Gwent, South Wales*. MSc. Scarman Centre for the Study of Public Order. University of Leicester.
- Brown, J. 2001. *Secured By Design in Gwent*. Presentation at the *Architectural Liaison Officer's Conference*, (ACPO), Blackpool Hilton Hotel, Blackpool, May 2<sup>nd</sup>- 4<sup>th</sup>.
- Cozens, P. M., Hillier, D. and Prescott, G. 1999a. Crime and the Design of New-Build Housing. *Town and Country Planning*. Volume 68. No. 7. July, pp231-233.
- Cozens, P. M., Hillier, D. and Prescott, G. 1999b. The Sustainable and the Criminogenic. The Case for New-Build Housing Projects in Britain. *Property Management*. Volume 17. No. 3, pp252-261.
- Cozens, P.M., and Plimmer, F. 2000. Crime and its Relationship to Environment. (Editorial). *Property Management*. Volume 18, No.2, pp89-91.
- Cozens, P. M., Hillier, D. and Prescott, G. 2001. Defensible Space: Burglars and Police Evaluate Urban Residential Design. *Security Journal*. Volume 14, Number 4, pp43-62.

Cozens, P.M. 2002. Sustainable Urban Development and Crime Prevention Through Environmental Design for the British City. 2002. Towards an Effective Urban Environmentalism for the 21st Century. *Cities: The International Journal of Urban Policy and Planning*. Volume 19 Number 2, pp129-137.

Cozens, P. M., Neale, R.H., Whitaker, J., Hillier, D. and Graham, M. 2003. A Critical Review of Street Lighting, Crime and the Fear of Crime in the British City. *Crime Prevention and Community Safety: An International Journal*. Volume 5 No.2, pp7-24.

CDA. 1998. *The Crime and Disorder Act*. Crown Copyright, London.

DOE. 1994. *Planning Out Crime Circular 5/94*. HMSO, London.

DETR. 1998a. *Bulletin No.32. The Layout of Residential Roads and Footpaths*. HMSO, London.

DETR. 1998b. *Places, Streets and Movement. A Companion Guide to Design Bulletin 32: Residential Roads and Footpaths*. HMSO, London.

DETR. 1999a. *Projection of Households in England to 2021*. HMSO. London.

DETR. 1999b. *Towards an Urban Renaissance*. Urban Task Force. Final Report. E and FN Spon, London.

DETR. 1999c. *A Better Quality of Life: A Strategy for Sustainable Development for the United Kingdom*. Home Office, London.

DETR. 2000. *Planning Policy Guidance Note 3: Housing*. DETR, London.

Devon County Council. 1998. Quality of Life Survey.  
<http://www.devon.gov.uk/quality/contents.html>.

Fairs, M. 1998. End of the Road for the Cul-de-sac. *Building Design*. Issue 1373, November 13, p1.

Farrington, D.P. and Welsh, C. 2002. Effects of Improved Street Lighting on Crime: A Systematic Review. Home Office Research Study 251. Development and Statistics Directorate, Crown Copyright, London.

Felson, M. 1998. *Crime and Everyday Life*. 2<sup>nd</sup> Edition. Pine Forge Press, California.

Gordon, C.L. and Brill, W. 1996. The Expanding Role of Crime Prevention Through Environmental Design in Premises Liability. *National Institute of Justice. Research Brief, April*. U.S. Department of Justice.

Hanson, R.K. 1998. Liability on Franchise Premises: Footing the Bill for Crime. *Business Horizons*, July/August.  
([http://www.findarticles.com/cf\\_0/m1038/n4\\_v41/21015195/print.jhtml](http://www.findarticles.com/cf_0/m1038/n4_v41/21015195/print.jhtml)).

Hillier, B. and Shu, S. 2000a. Crime and Urban Layout: The Need for Evidence. In Ballintyne, S., Pease, K. and McLaren, V. *Secure Foundations: Key Issues in Crime*

*Prevention, Crime Reduction and Community Safety*, pp224-248. Institute of Public Policy Research, London.

Hillier, B. and Shu, S. 2000b. Do Burglars Understand Defensible Space? *Space Syntax Website*: <http://www.bartlett.ucl.ac.uk/spacesyntax/housing/BillCrimePaper/BillCrimePaper.html>.

Home Office. 1999. *Digest 4. Information on the Criminal Justice System in England and Wales*. Barclay, G.C. and Tavares, C. (Eds.). Home Office, Crown Copyright, London.

Home Office. 2000. *Criminal Statistics, England and Wales*. Government Statistical Service, London.

Home Office and Department of Trade and Industry. 2000. *Design Against Crime in Education*. Crown Copyright, London.

Home Office. 2002. *The Police Reform Act 2002*. Crown Copyright, London.

HRA 1998. *The Human Rights Act 1998*. Crown Copyright, London.

Infield, P. 2000. *Personal Discussion* at the Suzy Lamplugh Trust's 'Responding to Workplace Violence' seminar, October 10<sup>th</sup>, London Voluntary Resource Centre, Holloway, London.

Jacobs, J. 1961. *The Death and Life of Great American Cities*. Vintage Books, New York.

Jeffery, C.R. 1971. *Crime Prevention Through Environmental Design*. Sage Publications, Beverly Hills.

Kershaw, C. Chivite Mathews, N., Thomas, C. and Aust, R. 2001. *The 2001 British Crime Survey*. Home Office Statistical Bulletin. Home Office, London.

Knights, B., Pascoe, T. and Henschley, A. 2002. *Sustainability and Crime: Managing and Recognising the Drivers of Crime and security*. Building Research Establishment, Watford.

Kraut, D.T. 1999. Hanging Out the No Vacancy Sign: Eliminating the Blight of Vacant Buildings from Urban Areas. *New York University Law Review*. Volume 74, p1139-1177.

Maguire, M. 1980. *Burglary as Opportunity*. Home Office Research Bulletin Number 10. Home Office, London.

Mayhew, P. 1984. Target Hardening: How Much of an Answer? In Clarke, R. and Hope, T. (Eds.) *Coping with Burglary*. Kluwer-Nijhoff, Hingham, USA.

Michael, A. 1999. *Forty-Per Cent Cut in Burglary Proves that Partnership Helps Cut Crime*. The National Assembly for Wales. Press Release W99648-Hou. 11<sup>th</sup> October.

- Moss, K. and Pease, K. 1999. Crime and Disorder Act 1998: Section 17 A Wolf in Sheep's Clothing. *Crime Prevention and Community Safety: An International Journal*. Volume 1, No. 4, p15-19.
- Moss, K. 2001. Crime Prevention V Planning: Section 17 of the Crime and Disorder Act 1998. Is it a Material Consideration? *Crime Prevention and Community Safety: An International Journal*. Volume 3, No. 2, p43-48.
- Moss, K. and Seddon, M. 2001. Crime Prevention and Planning: Searching for Common Sense in Disorder Legislation. *Crime Prevention and Community Safety: An International Journal*. Volume 3, No. 4, p25-31.
- Newman, O. 1973. *Defensible Space. People and Design in the Violent City*. Architectural Press, London.
- Newman, O. 1975. Reactions to the 'Defensible Space' Study and Some Further Readings. *International Journal of Mental Health*. Volume 4, Number 3, pp48-70.
- Parker, G. 2001. Planning and Rights: Some Repercussions of the Human Rights Act 1998 for the UK. *Planning Practice and Research*. Volume 16. No.1, pp5-8.
- Pascoe, T. 1992. *Secured By Design – A Crime Prevention Philosophy*. Msc Thesis. Cranfield Institute of Technology. Cranfield University.
- Pascoe, T. 1993a. *Domestic Burglaries: The Police View*. BRE Information Paper 20/93. Building Research Establishment, Garston, Watford.
- Pascoe, T. 1993b. *Domestic Burglaries: The Burglar's View*. BRE Information Paper 19/93. Building Research Establishment, Garston, Watford.
- Pascoe, T. 1999. *Evaluation of Secured by Design in Public Sector Housing*. Final Report. BRE. Watford.
- Pascoe, T. and Topping, P. 1998. Secured by Design: Assessing the Basis of the Scheme. *International Journal of Risk Security and Crime Prevention*. Volume 2, Part 3, pp161-173.
- Rogerson, R. 2000. Quality of Life in Cities. <http://www.globalideasbank.org/BOV/BV-374.HTML>. Quality of Life Group, Department of Geography, the University of Strathclyde, Glasgow.
- Ross, C.E. and Mirowsky, J. 1999. Disorder and Decay: The Concept and Measurement of Perceived Neighbourhood Disorder. *Urban Affairs Review*. Volume 34, No.3, pp412-432.
- Ross, C.E. and Jang, S.J. 2000. Neighbourhood Disorder, Fear and Mistrust: The Buffering Role of Social Ties with Neighbours. *American Journal of Community Psychology*. Volume 28, Issue 4, pp401-420.
- Rudlin, D. and Falk, N. 1995. *21<sup>st</sup> Century Homes: Building to Last*. URBED, London.

Seddon, M. 2001. Planning Out Crime. Presentation at the *Architectural Liaison Officer's Conference*, (ACPO), Blackpool Hilton Hotel, Blackpool, May 2<sup>nd</sup>- 4<sup>th</sup>.

Social Exclusion Unit. 1998. *Bringing Britain Together: A National Strategy for Neighbourhood Renewal*. HMSO, London.

Schneider, R.H. and Kitchen, T. 2001. *Planning For Crime Prevention: A Transatlantic Perspective*. Routledge, London, New York.

Steventon, G. 1996. Defensible Space: A Critical Review of the Theory and Practise of a Crime Prevention Strategy. *Urban Design International*. Volume 1 (3), pp235-245.

Topping, P. and Pascoe, T. 2000. Countering Household Burglary through the Secured by Design Scheme: Does it Work.? An Assessment of the Evidence, 1989-1999. *Security Journal*. Volume 14, No. 4, pp71-78.

Van Soomeren, P and Woldendorp, T. 1996. Secured by Deign in the Netherlands. *Security Journal*. Volume 7, Part 3, pp185-195.

Wilson, J.Q. and Kelling, G.L. 1982. The Police and Neighbourhood Safety. Broken Windows. *The Atlantic Monthly*. Volume 3, pp29-38.

Winchester, S. and Jackson, H. 1982. *Residential Burglary: The Limits of Prevention*. Home Office Research Study No. 74. HMSO, London.