

# Home security and place design: some evidence and its policy implications

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INVESTOR IN PEOPLE

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# Table of Contents

- Copyright..... 2
- Table of Contents..... 3
- Tables and Figures ..... 4
- Preface..... 5
- Executive Summary ..... 6
- Introduction..... 8
- Section 1. Crime and the Design of Residential Developments..... 9
- Section 2. So the home exists: is adding security worthwhile?..... 13
  - The limits of security measures ..... 15
  - Security measures in perspective ..... 16
  - Burglary..... 16
  - Direct Costs and Benefits of Security..... 21
- Section 3. The Wider Costs of Burglary ..... 25
- Section 4. Bespoke Burglary Prevention ..... 33
- Section 5. So What? ..... 39
- References..... 42
- About Perpetuity..... 47
- About the Authors ..... 47
  - Professor Ken Pease OBE ..... 47
  - Professor Martin Gill ..... 47

## Tables and Figures

Table 1. Rate of Burglary (% victims once or more) by Number of Security Devices (Mean 1995 and 1997 British Crime Surveys).....	19
Table 2. Actual burglaries and burglaries if all homes protected with 4-5 security devices.....	22
Table 3. Odds-ratios of property crime incidence: owner occupiers (non-movers = 1).....	30
Table 4. Odds-ratios of property crime incidence: other households (non-movers = 1).....	30
Table 5 Prevalence rates for different types of housing in each quintile.....	34
Table 6. Summary of Perceptions of Crime and Disorder, SBD vs Matched non SBD.....	38
Figure 1. Percentage burglary reduction for each extra security device.....	20
Figure 2. Proportion of all unreported crime by area decile: BCS data.....	28

## Preface

In August 2011 the National Housing Federation stated that 'rises in private rental sector costs, increased social housing waiting lists, price booms and a 'chronic under-supply' of new homes that has seen 105,000 built in England in 2011, threaten to plunge the market into an 'unprecedented crisis'<sup>1</sup>, Housing Minister Grant Shapps promised '... despite the need to tackle the deficit we inherited, this government is putting £4.5 billion towards an affordable homes programme which is set to exceed our original expectations and deliver up to 170,000 new homes over the next four years. 'The Government aims to reduce the regulatory burden and where possible the cost of development for house builders. This commitment takes a number of forms, including a 'one in one out policy' where any increase in regulation in one area must be matched by a decrease in another, with an explicit approach of 'regulation as a last resort'. In 2013 additional regulatory burdens are to fall on house builders. These will have to be offset somehow. The Home Office has already signalled its unwillingness to offer offsetting deregulation. Complementing the aspiration to reduce nationally imposed regulation is the localism agenda. The core policy aspiration to create a 'Big Society' focuses attention on the generation of local structures and associations.

Policy almost always involves a trade-off between, on the one hand, personal and organisational freedom and on the other, longer-term social objectives; between the freedom of mothers to dispense bags of chips through school railings at lunchtime and the long-term health costs of the obesity epidemic; between freedom from security checks and possible terrorist action. The trade-off between freedom in place design and consequent crime represents such a dilemma.

Security has a cost at the point of build or refurbishment. Such benefits as it may confer come later. The means by which such benefits may best be conferred require discussion. This report attempts to discuss the benefits (direct and indirect) against the costs, and (given that security is concluded to have benefits), to decide how these benefits may be realised.

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<sup>1</sup> <http://www.localgov.co.uk/index.cfm?method=news.detail&id=102493> accessed 2<sup>nd</sup> September 2011.

## Executive Summary

- Places and individual homes differ hugely in the amount of crime they suffer. Part of the reason for this lies in their design.
- The crime consequences of poor design of residential developments are there for the long term.
- Poor design makes crime easier, and leads those who can afford to move away from crime-ridden areas to do so.
- Designing out crime is not simply a matter of good design. A distinct set of attributes underpin crime-reductive design which do not usually form part of the designer's mindset. Good initial design needs to be complemented by crime reductive design.
- It is worthwhile to fit good security to the existing housing stock. Victims of burglary have on average substantially lower levels of security than non victims. Homes with no security have over seven times the rate of burglary victimisation with high level security. Homes with low level security have 75% more burglaries than homes with high level security. Rates of repeat burglary are significantly lowered by the installation of uprated security. Every extra security device confers measurable extra protection from burglary.
- The value of uprated security is reflected in higher ratios of attempts to completed burglaries as well as in the lower proportion of secure homes attacked.
- If all homes had security at the level of the best protected, other things being equal some 700,000 burglaries would have been thwarted, representing an *annual* saving of £1.97 billion (at 1997 prices).
- Installation of adequate security in existing homes is swiftly cost-effective (within the limits of the analysis possible here). Reduced opportunity costs in police time are particularly important when police numbers are cut.
- High area crime and disorder are the most frequent reasons for people moving and/or wanting to move home. One survey noted that 5.3 million people said that concern about crime levels and a desire to move to a safer location was their main reason for moving home. Reduced house prices and costs of void properties for social housing providers are unconsidered costs of crime.

- High rates of movement in and out of an area have been recognised by research as linked to crime for some eighty years. Policy which depends upon community cohesion (such as Big Society aspirations) is inevitably compromised in high 'churn' areas. The high risk of burglary to detached homes in poorer areas is perhaps a mechanism for driving potential community leaders from the most crime-challenged areas.
- Since risk is a function of both home and setting, bespoke security is necessary. 'One size fits all' security is less effective.
- Secured By Design (SBD) schemes are unique in the UK in offering largely research and experience-based guidance for the design of places. Evaluations of SBD are invariably open to doubt, not least because of the methodological difficulties. That said, all such evaluations, using a range of methods, show SBD to be effective in reducing crime.
- The impact of SBD has been greatest for social housing tenants, the market sector more prone to victimisation across a range of offences than owner-occupiers
- 2010 estimates of the costs of implementing SBD are £200 for a four-bedroom detached house, £170 for a three or two-bedroom detached house, £240 for a ground floor apartment and £70 for an upper floor apartment. The Association of British Insurers estimated that over twenty years, the introduction of SBD nationally would generate some £3.2 billion savings to the economy as a whole. In reanalysis of data for this report the figure for the marginal cost of SBD for a four-bedroomed detached house set against the annual cost of crimes suggests that SBD installation pays for itself in saved costs of crime in two years. Two alternative methods of calculating the same suggest shorter periods.
- SBD provides the obvious benchmark for assessing the effects of residential place security, but must not be presumed to be the final word in standard setting. Under the constraints of localism and deregulation, a number of recommendations are made about how the objective of home security may best be realised. These retain elements of SBD practice.

# Introduction

One of the most shocking facts about crime is the inequality of its distribution. Various analyses of the British Crime Survey have shown that roughly 4% of people suffer 40% crime or more (Pease 1998). At a time when the emphasis is on building affordable (ie cheap) homes, it seems crucial to do so in ways which do not confer a legacy of high crime. There is a modest association between area deprivation and area crime, so (putting it crudely) affordable homes and area deprivation have a tendency to go together, making it very important to build in ways which do not make today's affordable housing into tomorrow's problem estates.

What do we first need to know?

- 1.1 Does the layout of residential developments influence the amount of crime they suffer?
- 1.2 Do individual homes with adequate security suffer less crime?

If the answer to both these questions is no, building or refurbishing with security in mind is pointless. If the answer to either or both is yes, building or refurbishing with security in mind is important.

Section 1 of this report addresses the first question. Section 2 addresses the second question. Section 3 deals crudely with costs and benefits. It is argued that the costings conventionally applied ignore wider economic and social costs involved in the crime-induced flight from residential areas, that areas with high population churn suffer elevated levels of crime, and that large-scale policy initiatives such as the Big Society are only viable in relatively stable communities. The conclusion is therefore that where costs and benefits are roughly in balance on a narrow view, benefits will massively outweigh costs taking a broader view.

Section 4 discusses the particular role of bespoke residential place design, incorporating both individual home and setting elements, such as is offered by Secured By Design (SBD). The evaluations of SBD, with their costs and benefits, are considered. The conclusion reached is that bespoke security solutions to residential place design are desirable. Some recommendations are made as to how these might best be delivered.

## Section 1. Crime and the Design of Residential Developments

- 1.1 As noted above, places vary dramatically in the rates of crime which they suffer. This will surprise no-one but should shock everyone. Every reader will be able to name local areas blighted by crime, areas that they would seek to avoid and in which they would hate to live. A sceptical visiting Martian will be able to check out area differences in crime using the street level crime maps published by the Home Office.<sup>2</sup> Why do such differences exist? Is the design of residential developments as a whole part of the reason?
- 1.2 A major report compiled but not yet fully published (Armitage et al 2010) represents the most ambitious attempt to bring designers and criminologists together in assessing the characteristics of crime-resistant developments. The research was carried out by the University of Huddersfield in consultation with the Commission for Architecture and the Built Environment (CABE, now part of the Design Council). Just short of five hundred pages in length, the report should be consulted in the original. Only an outline can be included here. Two types of analysis were undertaken. In the macro-level analysis, the focus was upon the relationship between design quality, as well as other variables such as age, house type, tenure, size, crime rates in the wider area, environmental features of the development and their impact upon levels of crime types such as residential burglary, car crime, criminal damage and street crime. The micro-level analysis explored the association between crime variables and the presence of specific design features. It involved many site visits with relevant people and provides a unique in-depth treatment of the minutiae of how to design out crime from places where people live.

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<sup>2</sup> <http://www.homeoffice.gov.uk/police/street-level-crime-maps/> accessed 2<sup>nd</sup> September 2011.

- 1.3 The most important finding of the report is that design quality variables incorporated in the CABE Building for Life schemes and the collaborating design expert's checklist were not good predictors of a development's experience of crime. In fact in some cases (for example the developments in Greater Manchester studied) there was a negative association between the CABE scores and rates of crime. However there were other design attributes which were good predictors. This is not in any way to criticise the designers' assessments of quality, but rather to say that expertise in designing out crime from developments is not synonymous with good design from the designer's perspective. ***Designing out crime is not reducible to good design generically. It is difficult to overstate the importance of this finding.***
- 1.4 Initial design has enduring effects. All readers will have experience of local areas which have a longstanding reputation for suffering much crime, with a vicious spiral starting the acquisition of the reputation, desperation of residents to move out, the signs of decline (voided properties, graffiti, shops with extreme security hardware) but perhaps one large-scale piece of supportive research should be cited. In perhaps the most intensive study of crime and place, using very small units of analysis (street segments), Weisburd et al (forthcoming) show place-specific rates and numbers of crimes between 1989 and 2004. The picture remains very similar across the period. Crime-prone places usually stay that way. To paraphrase the Dogs Trust slogan, design is for ever, not just for this year.
- 1.5 What is it about a setting which make for vulnerability? Winchester and Jackson (1982) created an Index of Risk using 14 variables. The presence of each variable meant the allocation of 1 point. A property with a score of 14 had all environmental factors, a property with 0 had none. Winchester and Jackson's Environmental Risk Factors were:
1. Situation – Located in the country;
  2. Isolated;
  3. In a location with few (less than 5) other houses in sight;
  4. Road Type-Major Town Road or Village Lane;
  5. Set at a distance from the road
  6. Located on the nearest major road;
  7. Housing plot not adjacent to gardens of other houses;
  8. Housing plot adjacent to private, open space;

9. Access at both sides of the house from front and back of the plot;
10. Not overlooked at the front by other houses;
11. Not overlooked on either side by other houses;
12. Majority of sides of the house not visible from a public area;
13. Set at a distance from the nearest house;
14. Frontage obscured from roadside view. Armitage (2000) generated a similar risk checklist, where the predictive features were:
  1. Located next to open land
  2. Situated on a cul-de-sac with a linked pathway (relative to closed cul-de-sac)
  3. Situated on a through road
  4. Situated on an estate without a real or symbolic barrier
  5. Situated on an estate with a footpath from the estate to local shops
  6. Situated on an estate with a footpath leading from the estate to a maze of other footpaths
  7. Situated on an estate with a footpath leading from the estate to another residential area
  8. 'Moderate' pedestrian traffic
  9. A gate leading from a rear path into the rear garden
  10. Showing signs of brief desertion

1.7 Welsh and Farrington (2009) have supplemented the evidence base. They conducted systematic reviews (focusing on the methods and results of studies on a specific topic to assess what the findings grouped together tell us about that subject); and meta analyses (which focus on statistical analysis to determine how effective a measure has been). They summarised their conclusions as to typical (not universal) effects as follows

*On the basis of the highest quality research evidence available of the effects of crime of the five major forms of public surveillance, a few general conclusions can be drawn. First, closed circuit television (CCTV), improved street lighting, and the defensible space practice of street closures or barricades seems to be effective in preventing crime. Second, security guards are promising in preventing crime. Third, place managers appear to be of unknown effectiveness (Welsh and Farrington 2009, p.111).*

- 1.8 It would be tedious to rehearse all the research evidence here. The Huddersfield-CABE work described earlier contains an exhaustive literature review and helpfully contains tables where each design aspect has an annotated list of relevant research studies and what they revealed. For example, there are tables on parking arrangements, surveillability and visibility, territoriality, maintenance, play areas and road network. ***In short, the Huddersfield-CABE report provides an up-to-date guide in how to design residential developments so as to reduce crime.***
- 1.9 A brief mention should be made of place permeability because it has been very contentious. Permeability may be thought of as follows. If one stands at one corner of a development and walks to the diagonally opposite corner, how close to a straight line is the route? Making the journey in a straight line shows that the place is fully permeable, with footpaths and alleyways making the straight line possible. If it is necessary to go round the edge of the place to get to the diagonally opposite corner, the place is maximally impermeable. The rationale for permeability is the development of community sentiments. Be that as it may (and the writers are sceptical) permeability certainly has a cost in crime. The Huddersfield-CABE conclusion is that permeability makes homes more vulnerable, that culs-de-sac are particularly safe and that sinuous culs-de-sac are the safest form of cul-de-sac.<sup>3</sup> Permeability represents a regrettable source of tension between designers' values and crime reduction. Developments experienced higher crime which achieved the highest (desirable to designers) scores for integration with existing roads, promotion of non car travel, ensuring roads do not dominate the spatial layout and providing parking that does not detract from the street.

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<sup>3</sup> Why has one research group consistently found otherwise? The suggested reasons are: by using manual classification of culs-de-sac, the research showing cul-de-sacs to be safer avoid the errors consequent on the use of an algorithm applied to Ordnance Survey data, and by using the household as the unit of analysis in a single level logistic regression model, the assumption of independence of data is violated, with a consequent distortion of effects.

- 1.10 In summary, the lesson of the general literature on crime and place is thus that one can design crime risk into settings, and that crime-tolerant design is there for the long term. It seems to work both directly and indirectly, making crime easier initially, and setting in train a dynamic of population churn which perpetuates and increases area differences in rates of crime. Superimposed upon the long-run stability is short-run variation in the form of crime spates (see Bowers et al. 2004) driven by the foraging behaviour of individual offenders.
- 1.11 There are therefore real and enduring costs in permitting poorly designed crime friendly places to form. Place is a crucial aspect in determining crime levels. However, we have the housing stock we have and we are not about to demolish it all. Is it worthwhile to retrofit security measures into crime-prone homes? This is the subject of the next section.

## **Section 2. So the home exists: is adding security worthwhile?**

- 2.1 Two pieces of work provide circumstantial evidence that fitting security to existing homes might be worthwhile. The first is the (highly technical) work of Tseloni (2006) showing that most of the variation in crime rates is accounted for at the level of the individual home rather than the area in which it is located. This is consistent with a raft of earlier work which shows that high crime areas are that way primarily because of the number of crimes per home, with the number of homes victimised being secondary. In other words, areas are high in crime more because the same people suffer repeatedly. The second piece of circumstantial evidence is the success of schemes which set out to prevent repeat victimisation, which only makes sense if retrofitting security is effective (Grove 2010).
- 2.2 Looking at the issue more broadly, most Western countries experienced a drop in crime in the latter half of the last decade of the last century and the first half of the first decade of this century. Why? Some of the most obvious possibilities (change in the economy and gun laws) have been discredited (Donohue and Levitt 2001). Changes in abortion availability, leading to the non-birth of those most likely to become criminal had a vogue and disappeared in a bad-tempered debate about econometric minutiae (Donohue and Levitt 2004, Foote and Goetz 2005).
- 2.3 A European consortium headed by Jan van Dijk (van Dijk et al 2007) took the view that;

*“perhaps a more significant factor inhibiting crime across the Western world is the universal growth in the possession and use of private security measures by households and companies over the past few decades. ICVS-based trend data on the use of precautionary measures confirm that in all Western countries without exception, the use of measures to prevent property crimes such as car theft and household burglaries have risen drastically (sic) over the past 15 years” (p23).*

- 2.4 Recently, researchers from Loughborough and Nottingham Trent Universities set out to test the hypothesis that the change in the level and quality of security has been a key driving force behind the crime drop (Farrell et al., 2008; 2010a,b).
- 2.5 Their central assertions are that
1. Security improvements, including specific security devices, vary for different crimes but have been widely implemented.
  2. Different security measures work in different ways to reduce the crimes to which they are applied: they increase actual or perceived risk to the offender; and/or they reduce actual or perceived reward for the offender; and/or they increase actual or perceived effort for the offender.
  3. The different ways in which security measures work produce variations in expected changes in crime patterns associated with crime drops. These comprise expected security device crime change ‘signatures’.
  4. Crime displacement does not negate the crime-reductive effects of security.
- 2.6 Examining vehicle crime, they found ‘signatures’ consistent with the security hypothesis. For example, improved security in general and immobilizers in particular tends to reduce temporary theft (for joyriding, theft for transportation) more than permanent theft (for re-sale or breaking for parts). Further, if recent security is effective, the average age of stolen cars will have increased, as indeed it has. Speculating beyond vehicle theft, the East Midlands group asserts its belief that the falls in levels of burglary are due to the effectiveness of security measures.
- 2.7 Research on the *manipulation* of places which already exist with the purpose of crime reduction has been surprisingly consistent in its conclusions. Of course, unthinking ‘one size fits all’ approaches will fail. ‘Realist’ evaluators encourage researchers to link crime prevention measure to specific Contexts, Mechanisms and Outcomes. So, if for example, the Context is high burglaries where entry is through rear doors because they are of weak construction, the Mechanism would be replacement of these weak doors with strong ones and promulgation of this amongst relevant communities, with an Outcome of reduced burglaries. The

CMO formulation is also a theory or hypothesis that can be tested. The findings have helped explain how and why a range of measures have either worked or not worked. Problems arise when the CMO or theory is faulty in the first place, or, as is so often the case, there is poor implementation. Yet still the main architect of thinking in this area has concluded that 'It is clear that situational crime prevention can produce falls in crime' (see Tilley, 2009, p.135).

- 2.8 So is it worthwhile fitting well-considered security to homes in crime-challenged areas? As noted, the presumption is that it is, but there are some criticisms to be considered before the evidence.

### **The limits of security measures**

- 2.9 A number of authors have discussed the limits and negative consequences of security measures (see Tilley, 2009 for a good discussion). For example, there have been concerns that what security measures do is displace crime to those that are less protected, not stop it. Where this displacement takes the form of moving crime from the rich to the poor for example it carries ethical considerations. Yet the weight of evidence on displacement (and there are various types) is that it is at worst only partial. Moreover, there is a counterbalancing diffusion of benefits, where the benefits of good security in one locale are felt in others (Weisburd et al, 2006). There is a very recent systematic review reaching the same conclusions (Johnson et al 2011)<sup>4</sup>.
- 2.10 A range of other concerns are voiced in respect to security measures, including the assertion that they lead to a fortress society and a more regimented one; that they move discussion away from tackling problems that cause crime; and that they lead to victim blaming, although Clarke, the leading proponent of 'situational crime prevention' has launched a plausible defence against such criticisms (Clarke, 2000; see also Tilley, 2009). Indeed, bespoke crime reduction measures such as SBD allow more subtle and aesthetically pleasing design outcomes.

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<sup>4</sup> <http://www.bbc.co.uk/news/in-pictures-14851200> accessed 12th September 2011

## **Security measures in perspective**

- 2.11 Overall the evaluation of measures to prevent crime has received too little attention. Often measures are not fit for purpose or not implemented properly including those that have received massive sums of public money (see Gill and Spriggs, 2005). Indeed, this is a significant finding; if problems are not properly defined, and/or appropriate remedies are not effectively implemented then it is hardly surprising security is viewed as a failure or imperfect. While one can argue in such circumstances that security measures have not worked, that is not the same as stating that they would not have worked had they been properly specified and managed.
- 2.12 Often security is effective. Major crime reductions in some areas owe their success to good crime prevention measures, and in many ways it has been kept a secret. Schemes that can guide the effective link between crime problems and good solutions have much to commend them. In theory, they are just what are needed if we are to overcome poor theory development, weak identification of causes, inadequate attention to mechanisms, and poor implementation and management. But here too, when it comes to the evaluation of crime prevention schemes, there is an information gap.

## **Burglary**

- 2.13 Given that one of the main offences SBD is designed to reduce is burglary, its prevention merits a specific comment here. Bennett and Wright's (1984) classic study of burglars' approaches is still much referred to as a source of information about the ways burglars behave, perhaps because many studies, conducted in different countries over many years, have reached similar conclusions (Maguire et al, 2010). Burglars argued that there were three things that were likely to put them off, signs of occupancy, an alarm and oversight by neighbours. Generally, breaking into premises has not been seen as overly difficult, presumably because burglars choose suitable targets. Certainly burglars are discerning and make judgements about a variety of factors including security when choosing which house to burgle as Nee notes in reviewing her own research and that of others (Nee, 2003).
- 2.14 There is substantial scope for confidence about the effectiveness of security in tackling burglary. Evaluation results from the Reducing Burglary Initiative, a feature of the UK's Crime Reduction Programme (CRP) were generally supportive of security. Each of three evaluation teams identified successful situational measures against burglary (see, Kodz and Pease, 2003; Hamilton et

al, 2004). A helpful analysis of the security measures that were deemed to have worked in reducing burglary is provided by Hamilton-Smith and Kent (2005). Two of the most successful measures were locks on windows and doors (more than alarms and street lighting). Where these were installed area wide they were more effective than when targeted (see also, Osborn et al, 2004). This supports evidence from an early initiative, the Safer Cities Scheme, that good quality doors and locks can be effective in reducing the risk of victimisation (see, Tilley and Webb, 1994; Ekblom et al, 1996).

- 2.15 One of the important findings to emerge from work on measures to prevent burglary – and this is true of studies of crime prevention measures generally (Ekblom, 1998) – is that while combinations of measures are deemed to be effective (Hope et al, 2004), they have to be the right combinations although the effects of different elements have rarely been distinguished, marking this area out as another in need of further research (see Farrell et al, 2011). We explore this in more detail later, but measures will be more successful when they tackle the specific generators of crime in a coordinated way: they also need to be implemented effectively otherwise it is unlikely they will be successful. Indeed, schemes to match the response to the problem have much to commend them (see, Ekblom, 2010).
- 2.16 The most detailed relevant analysis of domestic burglary undertaken in England and Wales, though now somewhat dated, remains the proper departure point for analysis. The more technical analyses are reported as Budd (1999) but (unusually) the Home Office also issued a briefing note in 2001 setting out practice messages from the British Crime Survey (BCS). This asserts:

*“One of the major contributions of BCS in recent years has been to demonstrate the efficacy of security devices. It is commonplace to claim that good security ‘works’ However it has actually been surprisingly difficult to prove this. The BCS provided such proof by comparing levels of security in homes at the time they were burgled with security in homes that were not burgled. It takes account at the same time of other factors that are associated with risks, such as type of area. The results show that:*

*Basic security measures, such as deadlocks and windowlocks, are effective at reducing risk;*

*Burglar alarms, security lights or window grilles, are even more effective.*

*Nationally, 15% of households without security measures were burgled in 1997, compared with 4% of households with basic measures, and 3% with higher level security (Budd 1999)” (Budd 2001, p4).*

2.17 Budd produced a security scale which counted the number of security devices, measured at the time of the incident. These were deadlocks, window locks, burglar alarms, security lights, and window bars or grilles. It is evident that a score of five will indicate major investment, and for some dwelling types (eg flats other than on the ground floor) as few as one measure (deadlocks) would be appropriate. Bearing that in mind, the proportion of homes burgled by number of security measures in place is presented as Table 1 below.

**Table 1. Rate of Burglary (% victims once or more) by Number of Security Devices (Mean 1995 and 1997 British Crime Surveys)**

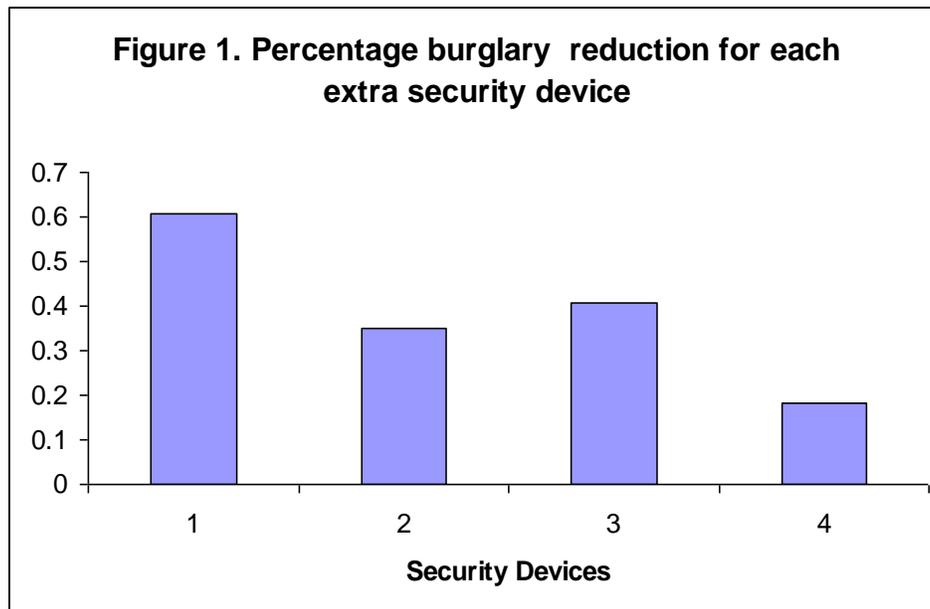
<b>Number of Security Devices</b>	<b>All Burglary</b>	<b>With Entry</b>	<b>Attempts</b>
<b>0</b>	<b>14.5</b>	<b>10.2</b>	<b>5.7</b>
<b>1</b>	<b>5.7</b>	<b>4.1</b>	<b>2.8</b>
<b>2</b>	<b>3.7</b>	<b>2.2</b>	<b>1.6</b>
<b>3</b>	<b>2.2</b>	<b>1.1</b>	<b>1.1</b>
<b>4/5</b>	<b>1.8</b>	<b>0.9</b>	<b>1.1</b>

Notes

*Modified from Budd (1999) Table A: 34. Unweighted n 15367, NB only half the sample was asked security questions. The columns 'With Entry' and 'Attempts', when combined, yield a total greater than 'All Burglary'. This is almost certainly because the figures are of households victimised once or more times, so households suffering both an attempt and a completed burglary would feature in both right hand columns*

- 2.18 Table 1 makes it clear that in homes with no security devices, about one third of the events involve thwarted attempts. In homes with 4-5 security devices, over half of attempts are thwarted. The Budd analyses thus suggest a double benefit of security, both the prevention of the initial attack on the home, and its thwarting if an attack is launched.
- 2.19 The writers will be concerned here and elsewhere to avoid what can be termed the Maginot error, namely believing that each security device adds a given amount of protection, irrespective of the residence and neighbourhood context in which it is to be found. The appellation comes from the French World War II defensive fortifications, collectively known as the Maginot Line, constructed along the German and Italian borders, which German troops outflanked by invading France through Belgium. Similar additive thinking bedevilled the British fortification of Singapore (Smith 2005). Security easily outflanked, or irrelevant in the sense that, however sustained an attack on a home, no-one will intervene, demands a skill set beyond the crude adding of security measures. With that point as a caveat, Figure 1 shows the proportionate reduction in rate of burglary for each additional security measure installed, using the Budd analysis.

**Figure1. Percentage burglary reduction for each extra security device**



2.20 Thus it will be seen that the reduction associated with the addition of a first security measure is some 60%, the addition of a second yields a further 35%, of a third a further 40%, of a fourth/fifth a further 18%. With the caveat entered above, this suggests that, overall; each extra security device yields a non-trivial extra burglary reduction.

2.21 Budd (1999) conducts logistic regression to take out the effects of variables other than security and finds that compared to high security (adequate window locks/door locks plus at least one other device) homes, homes with no security have over seven times the rate of burglary victimisation. Homes with low level security have 75% more burglaries than homes with high level security. This is with a range of other relevant variables statistically accounted for.

2.22 Despite the persuasive - even dramatic - evidence of the effectiveness of home security offered by Budd (1999) it would be preferable to do up-to-date analyses so that the method could be made more transparent to readers. There was not time to carry out the relevant analyses (nor was it in scope for this project). However, analysis of other BCS sweeps would be helpful to firm up these conclusions. The additional analysis would include:

1. Breaking down Table 1 by residence type.
2. Breaking down Table 1 by area crime level.

2.23 It is believed that the first analysis could be done by researchers external to the Home Office, but that the second could only be done for recent sweeps by

Government researchers, given the need to protect individual respondent confidentiality.

## **Direct Costs and Benefits of Security**

- 2.24 The calculations made below assume that the situation is as it was researched by Tracey Budd, but the assumptions are explicit and the calculations could be redone with more recent data, if and when available. The choice was made to do all analyses using 1998 BCS data.
- 2.25 The 1998 BCS estimates that there were 1,639,000 burglaries against domestic dwellings in 1997. Just under one half were attempts, entry being gained in some 878,000 cases. The DuBourg and Hamed (2005) estimate of crime costs in 2003 took the average burglary to cost £3,047, excluding 'defensive costs'. Adjusting for inflation reduces this to £2,822 in 1997. Working backwards from the Budd figures, the estimated gross numbers of burglaries against homes according to the number of security features installed is as in column a of Table 2 below. The burglary rate per 100 homes is given as column b. (Please note that this is slightly different from the numbers in Table 1, since Table 1 included data from both 1995 and 1997 surveys, Table 2 containing 1997 survey numbers only). Column c shows the number of homes burgled in 1997 by security level. Column d shows the number of burglaries there would have been if homes with poorer security had been upgraded to 4/5 devices.

**Table 2. Actual burglaries and burglaries if all homes protected with 4-5 security devices.**

<b>N devices (a)</b>	<b>Burgs/100 (b)</b>	<b>Estimated burgs 1997 (c)</b>	<b>Burgs 1997 if all homes had high security (d)</b>
<b>0</b>	<b>15.2</b>	<b>324400</b>	<b>74000</b>
<b>1</b>	<b>4.9</b>	<b>398400</b>	<b>176400</b>
<b>2</b>	<b>4.1</b>	<b>523600</b>	<b>278900</b>
<b>3</b>	<b>2.1</b>	<b>250400</b>	<b>261800</b>
<b>4-5</b>	<b>2.2</b>	<b>142300</b>	<b>142300</b>
<b>Total</b>		<b>1639000</b>	<b>933400</b>

2.26 This would represent a reduction of some 700,000 burglaries at 1997 numbers, whose saving would in 1997, on the Home Office figures, amount to some £1.97 billion.<sup>5</sup> Of course security measures will have an effect beyond one year. Armitage and Monchuk (2009) suggest that Secured By Design protection lasts for at least a decade. Taking as a crude simplification the assertion that all the security devices specified by Budd are equally expensive, what would that cost have to be to reach a break-even point against preventable burglaries? To expand, let us say that all households currently with 0 devices need four devices to be secure. Since 8% of households in the survey had no security devices, and there were 21.7 million households in England and Wales in 1997, those households might need  $4 * .08 * 21,700,000$  security devices. 19% had one security device, so those households might need  $3 * .19 * 21,700,000$  devices. Those 30% already with two devices might need  $2 * .3 * 21,700,000$  devices, and so on. On that basis some 38.4 million devices would be needed to achieve maximum protection. For this to offset the £1.97 billion saving, each device would have to cost £51 (£73 at current prices). If (conservatively) we assume that security measures remain effective for five years, the *unit cost* for security

<sup>5</sup> £2.79 billion at 2010 prices using Bank of England inflation calculator.

devices would have to be £365 at current prices to reach the break-even point. Of course, this is an unrealistic scenario, for reasons which will be obvious, and are developed below.

2.27 Some conclusions may nonetheless safely be reached.

- The best and most relevant BCS analysis suggests that security measures reduce burglaries, and do increase the proportion of burglaries in which entry is not gained.
- The reductions are not an artefact of area and household characteristics.
- At 1997 figures, if all homes had security at the level of the best protected, other things being equal some 700,000 burglaries would have been thwarted, representing an annual saving of £1.97 billion at 1997 prices.
- With evidence presented later, it seems clear that the installation of adequate security in existing homes is swiftly cost-effective.

2.28 Simplistic extrapolation of the above figures is not recommended. First, burglaries have declined since 1997 so the same proportionate reduction would translate into a smaller absolute reduction. Second, the number of households in England and Wales, according to the 1997 BCS, was some 21.7 million, which will have changed. Third, the level of security of households will probably have improved since 1997. Fourth, while Budd's logistic regressions do demonstrate a clear and large effect for security measures, reanalysis of similar data using hierarchical linear modelling<sup>6</sup> may give a fuller indication of separate area effects. Fifth, as has been stressed earlier, burglary risk is a function of setting, and settings are wildly different in terms of burglary risk. Notwithstanding all these caveats, the Budd work reanalysed here provides a clear vindication of the value of security in individual households.

2.29 Those seeking vindication of the value of adding security to existing homes are also referred to Grove (2010) whose systematic review of schemes to reduce rates of repeat burglary demonstrates their overall success. For example Thompson et al (2008) showed that homes not exposed to security recommendations after a burglary were significantly more likely to suffer a repeat burglary than homes subject to a security survey. This finding is the more

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<sup>6</sup> A statistical technique which separates effects at different levels, eg individual from area effects

remarkable because there will be many victims who did not act on the result of the survey.

- 2.30 We know that a domestic burglary flags a high risk of a repeat. Security uprating in the wake of burglary provides a means of burglary reduction without substantial up-front expenditure. The Budd figures on costs and benefits can be applied to such a strategy.

## **Section 3. The Wider Costs of Burglary**

- 3.1 Current Treasury guidance on the appraisal and evaluation of public expenditure is set out in its Green Book. A central concept here is the notion of additionality, namely the difference between what happens given an initiative and the 'counterfactual' of what would happen in its absence. This includes elements such as 'leakage' effects; i.e. affects outwith the initiative area (in crime terms, diffusion of benefits); 'deadweight' i.e. affects which would have occurred in the absence of the initiative (i.e. crime trends in the absence of enhanced residential security) and 'displacement' (increasing crime outwith the initiative area).
- 3.2 Constructing a realistic counterfactual in the present state of criminological knowledge seems to the present writers extremely presumptuous, even if it were within their competence. Even short-run prediction of crime spates is imperfect (Johnson et al. 2011) and its relationship to economic cycles apparently capricious (who would have predicted the riots of August?). The opportunity cost of police presence is also an imponderable. What would police officers be doing were they not attending burglary scenes? A realistic counterfactual will not be attempted here, and is frankly believed to be impossible. Rather two other concepts from the Green Book will be invoked alongside additionality, namely equity (Green Book p 52) and externalities, where a particular activity produces benefits or costs for other activities that are not directly priced into the market
- 3.3 Were the writers to undertake an analysis of the benefits of security enhancement; it would be in terms of a revealed preferences approach. Revealed preference approaches attempt to derive monetary valuations for environmental changes. For example, environmental improvements could have an effect on property prices, thereby raising the real wealth of the inhabitants of the affected area. Improvements in security could have similar effects and might also lead to a reduction in insurance premiums. The effects of the riots on limiting anticipated tourist income and employment chances flowing from the 2012 Olympics represents another indirect cost Annex 2 of the Green Book describes the method of revealed preferences.
- 3.4 Having drawn back from an analysis in terms of a dubious counterfactual, we will present and discuss two issues. The first is a crude and simple statement of basic costs and direct benefits. The second involves presenting some information about one consequence of area crime, namely the decision to move home among those economically able to do so. Burglary has been costed by DuBourg and Hamed (2005). As ever with cost-benefit analysis, and impressive as that analysis is, the choice of costs and benefits for inclusion determines the outcome

and conclusions reached. Cost benefit analysis is almost always helpful, sometimes necessary but seldom sufficient as a basis for decision-making. Its realisation in the Treasury Green Book principles was described above, but the problems have been identified many times. Some of them are detailed by the UN Environment Programme and are summarised below<sup>7</sup>

- 3.5 Benefits often can be more difficult to quantify than costs. Many benefits are non-economic, and economic analysis seeks to translate these benefits into financial terms. What are the benefits, for example, of local convenience stores notoriously liable to chronic victimisation in high crime areas?
- 3.6 Cost-benefit analysis is inexact. While cost-benefit analysis is common in many contexts, it can yield dramatically different numbers, especially as different methodologies for assigning economic values to non-economic benefits can vary significantly.
- 3.7 Cost-benefit analysis often includes subjective assumptions regarding non-economic values. Another reason that cost-benefit analysis remains imperfect is that economists often have to make assumptions regarding the financial value of non-economic values, whether they are costs or benefits. For example, what is the economic value of a Government's reputation and standing with its citizenry? In the crime context, what would be the consequences of crime-precipitated failure of Big Society policy in public sector costs or the suffering of those denied help because of the absence of paid workers or volunteers?
- 3.8 Shared benefits can be underestimated. While it may be relatively straightforward to assess the immediate costs of regulation, shared benefits can be difficult to estimate. For example, there may be a threshold of protection against burglary at which point a whole area or development is assumed by a potential burglar to be adequately protected. The narrow analysis of weighing the costs that are directly accrued versus the shared benefits can lead to what is known as the Tragedy of the Commons.
- 3.9 In this section, it will be claimed that crimes such as burglary threaten the viability of a localism policy. This will be done by making three assertions.
  1. That the distribution of burglary is spectacularly uneven across locales, with the most crime-challenged areas being too heavily victimised for legitimate local structures to be easily established;

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<sup>7</sup> <http://www.unep.org/dec/onlinemanual/Enforcement/NationalLawsRegulations/Resource/tabid/777/Default.aspx>  
accessed 12th March 2011

2. That there is a dynamic which drives those who can afford it to move from crime-challenged areas, leading to economic ghettoisation of the most crime-infested areas;
3. That premature demolition of viable housing because of crime is a real but currently uncostered element in the equation.

3.10 Wider considerations are real but not covered here. They include:

1. The carbon cost of crime
2. The opportunity costs of emergency service time
3. The launching on criminal careers of those whose apprenticeship is in areas providing ample easy opportunities to offend
4. The costs of securing void social housing
5. The loss of rent and community charge from void homes (although this was the driving motivation for at least one of the projects shortlisted for awards by the European Crime Prevention Network. Details of this Swedish projects are available from the writers)

3.11 The Moving to Opportunity programme <sup>8</sup> is beginning to demonstrate the beneficial effects of (voucher-funded) movement from crime-challenged areas:

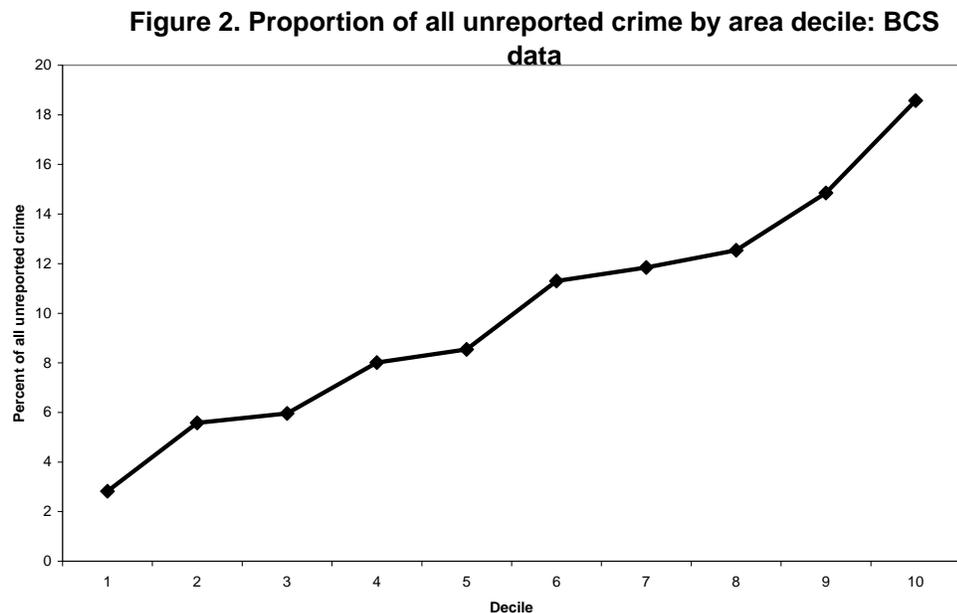
*Among the children in these families, girls appear to have benefited from the move in several ways. They experienced improved psychological well-being, reporting lower rates of psychological distress, depression, and generalized anxiety disorder, and improved perceptions of their likelihood of going to college and getting a well paid, stable job as an adult. These girls' behaviors changed as well, with a smaller proportion working instead of attending school. They were less likely to engage in risky behavior or to use marijuana. Finally, both these girls and society as a whole benefited from a reduced number of arrests for violent crimes. Similar conclusions are reached in a German study by Oberwittler (2004).*

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<sup>8</sup> [http://www.abtassociates.com/reports/2003302754569\\_71451.pdf](http://www.abtassociates.com/reports/2003302754569_71451.pdf) accessed 3rd March 2011

3.12 The Green Book invokes equity as a factor in determining the worth of public expenditure programmes. Crime is grossly unequal in its distribution. This is true across nations (Farrell and Bouloukos 2001), but also across areas intranationally, and across individuals and households within areas. Tseloni and Pease (2005) supply Gini coefficients by crime type by sampling point documenting the degree of inequality. At an even smaller scale (street segments) US data show that between 4.7% and 6.1% of street segments account for 50% of all crime events (Weisburd et al. 2011). This is much greater than is evident from local police stations because of area differences in unreported crime. Assessing BCS (1998) data on unreported crime offers further insights. In this analysis, BCS sampling points are ranked from those hosting least reported crime and those hosting most reported crime. It will be seen that some ten times as much unreported crime occurs in areas with the most reported crime than in the areas with least reported crime.

**Figure 2. Proportion of all unreported crime by area decile: BCS data**



3.13 Since each decile itself contains a range of crime incidences, the figures understate the contrast between the worst and best areas. This will be no surprise to non-comatose citizens. What may be more surprising is that area variation is to a surprising extent a product of repeat victimisation of the same targets (see for example Trickett et al 1992) and that variation in police resourcing does not seem to reflect variation even in the extent of recorded crime. One could understand not policing in proportion to crime insofar as the crime remained unrecorded, but the disproportion to recorded crime is somewhat surprising (Ross and Pease 2008).

- 3.14 Repeated burglaries of the same home are typically the work of the same burglar (Everson and Pease 2000; Bernasco 2008). Travel to burgle distances estimated in different ways are typically very short (see Forrester et al. 1988; Wiles and Costello 2000).
- 3.15 Why is this emphasis on the extreme localism of burglary, extending even to the repeated burglary of the same homes by the same people, included in this report? There are two reasons. First, and more important, the recognition that there are some locales seriously blighted by crime makes more credible the evidence for flight from those areas of those economically able to do so. Second, it provides the basis for a discussion of progressive security enhancement with disproportionate benefit by concentrating on those already victimised in areas of high crime.
- 3.16 An Abbey National survey of 2007 reported:

*“Crime levels and bad neighbours are the reason for almost ten million Britons moving home in the last five years. That is according to a new study from Abbey, which reveals 5.3 million people said their main reason for moving home in the last five years was due to crime levels in their area and a desire to move to a location where they would feel safer.”<sup>9</sup>*

- 3.17 In their US study, Xie and Mac Dowall (2008) concluded that:

*“housing turnover .... independently increases the risk that a dwelling will experience a crime. This finding is true even controlling for persistent differences in crime vulnerability between dwellings” (p539).*

- 3.18 In an early study, Katzmann (1980) statistically isolated the effect of property crime from other neighbourhood characteristics, such as accessibility to workplace and social composition. In Dallas he found repelling effects of crime for potential movers which was greater for families with children than without and for more affluent families, white and black.

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<sup>9</sup> <http://www.aboutproperty.co.uk/uk-property/2007/3/5/crime-and-bad-neighbours-top-reasons-for-movi> accessed 23rd February 2011

5.

3.19 In the UK, Tracey Budd (1999) showed that tenure length of less than one year was associated with some 50% higher risk of burglary with entry than the base category (those who had lived in their home for more than ten years). In fact the risk of the shortest tenured group was much higher than all other tenure lengths. Ellingworth and Pease (2000) showed that the incidence of household property crime was elevated both before and after moving home. For owner-occupiers the greater effect was pre-move, for other households the greater effect was post-move. The effect was consistent across four sweeps of the BCS. Table 3 summarises the odds-ratios for annualized data for owner-occupiers and Table 4 for other households.<sup>10</sup>

**Table 3. Odds-ratios of property crime incidence: owner occupiers (non-movers = 1)**

7.7	7.8 Movers	7.9 Pre-Move	7.10 Post-Move
7.11 982	7.12 1 .37	7.13 .48	7.14 .25
7.15 984	7.16 1 .30	7.17 .79	7.18 .80
7.19 988	7.20 1 .99	7.21 .11	7.22 .85
7.23 992	7.24 1 .68	7.25 .07	7.26 .89

**Table 4. Odds-ratios of property crime incidence: other households (non-movers = 1)**

7.27	7.28 Non-movers	7.29 re-Move	7.30 Post-Move
7.31 982	7.32 1 .50	7.33 .86	7.34 .14

<sup>10</sup> Two minor errors in the tables have been corrected from the published version.

7.35 984	7.36 .13	2	7.37 .98	7.38 .27
7.39 988	7.40 .11	2	7.41 .78	7.42 .42
7.43 992	7.44 .41	1	7.45 .68	7.46 .14

- 3.20 In a forthcoming publication, Pease and Gill analyse data from the New Deal for Communities programme to show that crime and disorder is indeed the greatest single reason for people wishing to move home, and that this is particularly so among those in social housing and renting privately.
- 3.21 In short, people often move because they have been victimised and/or they perceive where they live to be crime-challenged.
- 3.22 A final uncosted consequence of burglary is the demolition of viable homes on the basis of the crime they suffer. The writers know of no systematic collation of this sort of information, but do know of individual cases in which this has been the case. These include the Hulme estate in Manchester and the Cheadle Heath estate in Stockport.
- 3.23 Threats to policy are no less real for being outside the remit of the Treasury approach to cost-benefit analysis. Communities with an ever-shifting population have been recognised as prone to crime victimisation at least since the 1930s (see Schurman and Kobrin 1986).
- 3.24 A flagship policy of the coalition administration is the 'Big Society'. The Prime Minister on Feb 11th 2011 spoke as follows:

*"What is my mission, what is it I am really passionate about? It is actually social recovery as well as economic recovery. "We do need a social recovery to mend the broken society and to me, that's what the Big Society is all about." Addressing criticism that the Big Society idea was too vague, he said it was not just about rolling out one single policy: "What this is all about is giving people more power and control to improve their lives and communities."*<sup>11</sup>

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<sup>11</sup> <http://www.bbc.co.uk/news/uk-politics-12443396>, accessed 27<sup>th</sup> February 2011.

3.25 The BBC's Chief Political Correspondent Norman Smith opines

*"The Big Society is crucial to David Cameron's political prospects precisely because it is his Big Idea, his "mission"."*<sup>12</sup>

3.26 The notion of the Big Society has been criticised on the grounds of vagueness and of unrealism in respect of the most challenging areas. The New Economics Foundation in its publication of June 2010 gave the idea a qualified welcome.

*"When people are given the chance and are treated as if they are capable they tend to find they know what is best for them and can work out how to fix any problems they have and realise their dreams. Bringing local knowledge based on everyday experience to bear on planning and decision-making usually leads to better results. Evidence shows that when people feel they have control over what happens to them and can take action on their own behalf, their physical and mental wellbeing improves. When individuals and groups get together in their neighbourhoods, get to know each other, work together, and help each other, there are usually lasting benefits for everyone involved: networks and groups grow stronger, so that people who belong to them tend to feel less isolated, more secure, more powerful and happier. It serves the well-established principle of subsidiarity: that matters should be handled by the smallest, lowest or least centralised competent authority" (p2).*

3.27 The quotation is given at length because of how it contrasts with the state of affairs in crime-ridden communities, where the de facto powers on the ground are petty criminals and feral youth. And the NEF acknowledges the issue.

3.28 "There are examples of troubled communities making marked improvements in their physical environment, levels of civic participation, opportunities, well-being and quality of life. But these are not commonplace... Resilience – the ability to deal with life's problems – is an important component of individual well-being, but promoting it is not an alternative to removing the systemic barriers that produce these disadvantages."(p4)

3.29 Crime (given the data about decisions to move and BCS studies of the emotional impact of crime) is surely to be regarded as a systemic barrier to realisation of the Big Society

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<sup>12</sup> <http://www.bbc.co.uk/news/uk-politics-12443396>. Accessed 27th February 2011

- 3.30 This section began with some qualifications about the value of cost-benefit analysis as a sufficient basis of decision-making. It would be easy to add cost and benefit elements so that the figures favoured regulating additional home security. This approach has been rejected as disingenuous. However one small illustration of the point could perhaps be permitted. The costs of moving home are very variable but if the Abbey figures cited above are correct, this would equate to annual direct costs of some £6.2 billion. Inclusion of this alone would make the cost-benefit equation come down dramatically on the side of enhancing security.

## Section 4. Bespoke Burglary Prevention

- 4.1 ***To summarise the conclusions so far: features of residential place design can be identified as criminogenic and these are not reducible to design quality; lack of security in individual homes invites crime (and simplistic analysis suggests security uprating is cost-effective after a very short time); and there are crime costs beyond those conventionally calculated which, if ignored, threaten the viability of coalition policies more generally.*** The interactions between homes and settings in crime risks have been referred to only by anecdote, but looking at homes and their settings as a *whole* is the distinctive feature of bespoke prevention provided by Secured By Design schemes and similar arrangements. That there are such interactions is illustrated by Bowers et al. (2005) and depicted below.
- 4.2 Table 3 shows the risk, expressed as a rate per 1000 households, of being burgled for four different housing types in each of five different areas. These areas were defined by including the most affluent twenty percent of areas in quintile 1, the next most affluent twenty percent into quintile 2 and so on, with the most deprived twenty percent of areas being categorized as quintile 5. The quintiles were produced by using the ward level Index of Multiple Deprivation 2000. Using this, each of Merseyside 118 local authority wards were assigned to one of the five quintiles. Rates were produced using counts of each property type falling into each quintile for the whole of Merseyside.
- 4.3 It is clear from Table 5 that all types of property are more at risk from burglary in more deprived areas. However, what is particularly interesting is the fact that this pattern is far more pronounced in detached and semi-detached houses to the extent that there is a clear interaction between these two risk factors, with such homes in deprived areas being disproportionately at risk. This pattern therefore suggests that, in the more deprived areas and for these properties in particular,

some offenders seem to be employing specific targeting strategies that are informed by the physical characteristics of a property rather than committing simply opportunistic crimes.

- 4.4 The pattern of results that are shown in Table 5 are also evident when a year-on-year analysis is done using the recorded crime data. This means that the findings shown in this table are consistent over time; the more affluent are particular targets within such an area. There is already some suggestion that richer people in poorer areas are most heavily victimised by burglary. Tseloni et al. (2002) review the relevant studies as follows:

*“...studies agree that both types of explanatory variable (individual and community) significantly affect household victimization risk. Indeed, the factors at these two different levels can have counteracting influences. ‘To caricature, richer people in poorer areas suffer property crime particularly heavily’ (Trickett et al. 1995:291). This finding about the different roles of household and area affluence recurs in a number of other papers and relates to studies of household crime rates (Osborn and Tseloni 1998) as well as to crime risks (Osborn et al 1996; Osborn and Tseloni 1998)” (p112).*

**Table 5 Prevalence rates for different types of housing in each quintile**

Prevalence rate	Housing Type			
	Semi	Detached	Terraced	Flat
Quintile 1	6176	1793	498	318
	16.37	10.32	18.87	12.29
Quintile 2	6179	1038	2485	1018
	20.39	17.85	18.44	15.87
Quintile 3	5206	579	6150	1838
	29.56	27.46	21.31	20.26
Quintile 4	3965	336	7751	2701
	44.16	57.83	21.95	25.69
Quintile 5	3377	391	6924	6285
	53.21	71.29	25.91	27.31

- 4.5 At the risk of sounding elitist, it may well be that residents in the most prestigious housing types are potential community leaders and volunteers for Big Society purposes. They may be among the most active parents in local schools. They will on average be those most economically able to move home. ***The protection of nice homes in crime-challenged areas illustrates the setting-dwelling interaction and thereby the need for bespoke security measures.***
- 4.6 This report is not intended as advocacy for the Secured By Design Scheme, but, to put it colloquially, for the UK the scheme is the only show in town in offering an integrated approach to design out crime from buildings and their settings.
- 4.7 SBD is an award scheme, managed by the Association of Chief Police Officers. It seeks to design out crime at the planning stage (Pascoe and Topping, 1997). Its day-to-day operation occurs through the agency of local police Architectural Liaison Officers (ALO) or Crime Prevention Design Advisors (CPDA).
- 4.8 The principles of SBD fall largely into the following categories:
- 4.9 *Physical Security* - setting standards of physical security for each property and its boundaries.
- 4.10 *Surveillance* - design to achieve maximum natural surveillance without compromising the need for privacy.
- 4.11 *Access/Egress* - designed to include a minimum number of access/egress points.
- 4.12 *Territoriality* –ensuring that space has a clearly defined ownership, purpose and role, it is evident to residents within the neighbourhood who should, and more importantly who should not be in a given area.
- 4.13 *Management and Maintenance* - ensuring a programmed management system in place to maintain the area. This includes the removal of litter and graffiti.
- 4.14 Evaluations of the effectiveness of the SBD scheme are available (Brown, 1999; Pascoe, 1999; Armitage, 2000; Armitage and Monchuk, 2009; Teedon and Reid, 2009). Each concluded that SBD conferred a crime reduction advantage. Several studies have claimed that the scheme is cost-effective (Armitage, 2000; Association of British Insurers, 2006; Teedon and Reid, 2009). Armitage (2000) calculated that the average additional cost of building a new house to SBD standard was £440. Refurbishment to the SBD standard cost approximately £600 per dwelling. Teedon and Reid (2009) claimed that there had been a saving of £18,304 in the study area due (in some part at least) to the introduction of SBD to

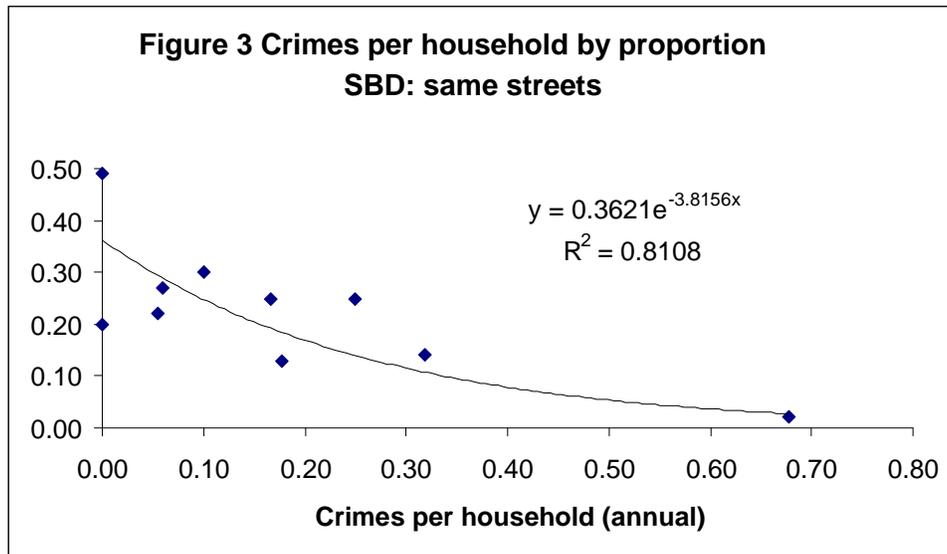
- Glasgow Housing Association properties<sup>13</sup>. The 2006 ABI report concluded that implementing the scheme would yield benefits of some £1170 per household, a net saving of £540 (with the scheme costing an additional £630 per home). The ABI estimated that over twenty years, the introduction of SBD nationally would generate more than £3.2 billion savings to the economy as a whole. A recent update of this report (Davis Langdon, 2010) suggests that the overall costs of implementing SBD are much lower than the £630 originally suggested at £200 for a four-bedroom detached house, £170 for a three or two-bedroom detached house, £240 for a ground floor apartment and £70 for an upper floor apartment.
- 4.15 As a basis for calculating costs and benefits, clearly large studies and recent studies should be favoured. Somewhat surprisingly and very regrettably, the data from the Teedon evaluation have been destroyed rather than archived. What follows is an attempt to perform modest secondary analysis on the more recent Armitage and Monchuk work.
- 4.16 Making a direct comparison of SBD and non-SBD dwellings in terms of their crime victimisation is very difficult, since there will always be the suspicion that dwellings with and without SBD protection differ in other ways too. The Armitage group addressed the issue in a variety of ways, some more persuasive than others. Figure 3 below sets out their approach applied to police recorded crime. Their analysis of police recorded crime data was supplemented by visual audit of the places concerned, and a victimisation survey whose results can sadly be discounted because of an extremely poor response rate.
- 4.17 The elements of the work which come closest to a robust demonstration of the efficacy of SBD is the same-streets comparison, in which SBD and non-SBD homes within the same streets were compared.
- 4.18 Individual aspects of the Armitage and Monchuk work are subject to their self-criticism. Their persuasive power lays in the fact that all the elements point in the same direction: visual audit, comparison of the same places over ten years, and comparison of SBD and matched non-SBD homes.
- 4.19 Figure 3 depicts the relationship between annual crime per household and the *proportion of houses on a street which are SBD protected*. It will be seen that there is a good relationship, with  $R^2 = .81$ , suggesting that most of the between-street variation in crime is linked to the proportion of homes SBD-protected. (NB One wild outlying value has been excluded.) Fortunately, burglary is an uncommon occurrence, so with a sample size of 455, few homes are burgled in a given year. It should be noted that all five burglaries committed occurred to non-

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<sup>13</sup> Note that this is an interim finding – the final report is yet to be published.

SBD homes and no burglary occurred in streets with more than 30% of SBD homes.

- 4.20 In the following modest reanalysis, offences of criminal damage and burglary are included.



- 4.21 Since only a minority of crimes captured in the same-streets analysis was burglaries, this is a reminder that one should think of security in terms of securing safer places, not just less burgled homes. Comparison of relative incidence of victimisation of SBD and non-SBD homes/residents in the same street shows significantly lower victimisation of SBD homes/residents in burglary, theft from vehicle, and total crime. Other crime types were also lower in SBD homes albeit not statistically reliably.
- 4.22 First street length was found not to be reliably associated with proportion of homes SBD compliant, so that any association between SBD compliance and crime costs was not an artefact of street length. The sum of burglary and criminal damage costs was highly correlated with the proportion of homes which were SBD compliant (+0.88).
- 4.23 Taking the Davis Langdon (2010) figure for the marginal cost of SBD, using the largest figure, that for a four-bedroomed detached house, £200, and setting that against the average cost per home available to be saved (£96), it would seem that SBD installation pays for itself in just over two years considering only burglary and criminal damage. Inclusion of vehicle offences would reduce this period.
- 4.24 Caveats to the calculation above are that; with the small sample, it looks as though the SBD effect peaks when half (or presumably more) homes in a street are SBD protected, so that if SBD were installed up to the 50% point the period

to break-even would be much less, actually around eight months; in the absence of original data, it was assumed that criminal damage offences were distributed across the SBD/non-SBD variable as was burglary. Whether the free rider effect which this implies is acceptable is a matter for debate.

- 4.25 Seeking rough disconfirmation or support from the far more extensive analysis (but obviously more dated) earlier Armitage work, a one-year break-even point is calculable from her matched groups using relative burglary rates only. The early work is also rich in resident perceptions of area characteristics. Table 6 below reproduces a sample table illustrating the point. **Residents in SBD areas are less worried about crime.**

**Table 6. Summary of Perceptions of Crime and Disorder, SBD vs. Matched non SBD**

	<b>SBD</b>	<b>Non SBD</b>
<b>Very Worried about Theft from Vehicle**</b>	<b>23%</b>	<b>26%</b>
<b>Very Worried about Mugging</b>	20%	<b>17.6%</b>
<b>Very Worried about Racially Motivated Attacks*</b>	11.4%	<b>9.2%</b>
<b>Noisy Neighbours are a Very Big Problem</b>	12.4%	<b>10.7%</b>
<b>Teenagers are a Very Big Problem</b>	23.8%	<b>17.6%</b>
<b>Vandalism is a Very Big Problem</b>	18.1%	<b>19.8%</b>
<b>Drug Use is a Very Big Problem</b>	<b>15.2%</b>	<b>22.1%</b>

\* denotes statistical significance at the level of 0.1 (one-tailed).

\*\* denotes statistical significance at the level of 0.05 (one-tailed).

## Section 5. So What?

- 5.1 The overwhelming weight of evidence from crime-related research is that certain communities are adversely impacted by crime, and massively so; that these communities remain disadvantaged over time; and that there are negative quality of life implications for those who live there. In short, designing in crime, as has so patently been the case in the past, has long term consequences which are difficult to remedy.
- 5.2 There is a growing body of research which is showing the positive impacts of security measures; indeed, it seems security is a major contributory factor in the massive drop in crime that has been witnessed across the western world since the mid 1990s. The evidence from studies of burglary is that security measures – and the absence of them - are a key feature of what makes premises attractive to a burglar.
- 5.3 There is now a wealth of research that supports approaches to designing out crime. One of these, Secured By Design, has based its principles on research evidence, that both design and security are key aspects of the prevention of housing blight and all its associated costs.
- 5.4 All independent studies of SBD, undertaken in different locations and by different unconnected researchers, have revealed positive results.
- 5.5 The cost suggests short periods to the break-even point.
- 5.6 Crime undermines local communities and in so doing it erodes the basis on which the Big Society and a commitment to localism – key Government commitments - are based.
- 5.7 All of the above taken together does not mean that SBD standards and practices should be incorporated in regulation. Residential developments with particular characteristics are less prone to crime. Increasing security to individual homes seems to reduce their vulnerability to crime. If these are seen as sufficient to justify aspirations to make homes more secure, SBD is the only approach with demonstrated efficacy. It is also increasingly isolated as the repository of (imperfectly) research based crime-reductive design. However, the police specialists with whom it operates, Architectural Liaison Officers (aka Crime Prevention Design Advisors), are being reduced in numbers disproportionately in the present reduction in police personnel, with replacements, insofar as this occurs, often taken from amongst officers whom forces are obliged to redeploy

but who lack specialist training. Insofar as SBD efficacy depends upon local specialist officers, it is under threat.

- 5.8 If it is accepted that residential place design and home security are worthwhile, as has been asserted above in this report, the question is how may these best be delivered, under two constraining conditions, namely that regulation will not occur, and the decision-makers will be local authority planning and community safety practitioners. The closure of the Home Office's Crime Prevention Centre in Easingwold means that SBD, for good or ill, is the central player in the task of designing out crime from buildings (the Building Research Establishment has a wider role).
- 5.9 What is, in the writers' view, definitely worth retaining and extending about the SBD current process and structure?
1. Its thirteen design guides, three standards guides, and 'police preferred specification' product identification. These should be developed and extended in line with the Huddersfield/CABE and other recent research. Scope exists for development to parallel the work of the Thatcham Centre in respect of vehicle security, particularly in its services to the insurance industry.
  2. A central point of expertise on designing out crime, increasingly as crime prevention advice comes to be dispensed locally by police officers lacking specialist training. There is no equivalent point of expertise centrally, and the nearest Home Office and Problem-Oriented Policing websites are at best supplementary sources of information.
  3. S17 of the 1998 Crime and Disorder Act places a statutory duty on local authorities to take account of the crime consequences of all their decisions. This implies an awareness of what those consequences are which designers and planners often lack, so that the statutory duty could be, in good faith, met by an authority based upon a lack of the relevant knowledge. There is scope for substantial development of the training and information functions of the SBD organisation.<sup>14</sup>
- 5.10 The functions of SBD most worth retaining and developing are those set out above. Against that, the method of funding SBD through contributions from those whose products it endorses make it vulnerable to criticism that there are incentives to recommend products based on attributes other than their

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<sup>14</sup> An anomaly in the legislation needs to be eliminated. Currently a refusal of planning permission on S17 grounds can be appealed to the Planning Inspectorate, which being an arm of central government is not bound by S17 considerations.

performance under attack testing. Consideration should be given to alternative funding mechanisms (perhaps again with Thatcham as an exemplar).

- 5.11 A final recommendation is that SBD and the Cabinet Office's Behavioural Insights team together discuss ways in which it may be possible to 'nudge' planning and architecture professions into greater incorporation of anti-crime design principles. Without the goodwill and active collaboration of these professions, the important task of enhancing the security of places will remain largely unfulfilled.

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## **About Perpetuity**

Perpetuity is a leading provider of research, consultancy and training in the areas of crime reduction, community safety and security. We provide bespoke services to international companies, central and local government, public service providers, private businesses as well as charities and voluntary organisations.

Our research interests include qualitative and quantitative approaches with a special interest in evaluation. We have conducted many crime related studies, and also worked in other areas including health, education and transport.

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