BURGLARY IN SCHOOLS

The prospects for prevention

Tim Hope

RESEARCH AND PLANNING UNIT PAPERS

'Research and Planning Unit Papers' contain material of a rather more specia-
lised nature than that which appears in the Unit's main publication outlet, the
Home Office Research Studies series. As with that series, they result from
research undertaken in the Home Office to assist in the exercise of its adminis-
trative functions, and for the information of the judicature, the services for
which the Home Secretary has responsibility (direct or indirect) and the general
public.

On the last pages of this Paper are listed titles already published in this
series (the first four titles were known as Research Unit Papers), in the
Home Office Research Studies series and in the earlier series Studies in the
Causes of Delinquency and the Treatment of Offenders.

FOREWORD

This paper reports research carried out in London on burglaries in schools. Like other recent studies of burglary, it concludes that local circumstances, principally of design, were an important (if not the only) determinant of crime, and that any measures taken to reduce the opportunity to commit this offence must be to an extent tailored to the local situation.

I J CROFT

<u>Head of the Research and Planning Unit</u>

ACKNOWLEDGEMENTS

TIM HOPE

CONTENTS   Page

1   INTRODUCTION

Burglaries in schools are only a small fraction (about 4%) of the total number of burglaries recorded by the police each year.(1) Probably for this reason the offence has received less attention from policy-makers and criminologists than residential burglary. Schools, however, are actually at considerable risk of burglary: in London, Metropolitan Police figures suggest that a school or college is 38 times more likely to be burgled than a residential dwelling, and a similar picture seems to hold in other parts of the world (cf. National Institute of Education, 1978). Schools are also more likely to be set on fire (which may be a consequence of burglary) than all other classes of property (Home Office, 1980).

The means to control crimes against public property may well lie more in the hands of local authorities than the police (Clarke, 1978; Morris and Heal, 1981). Local education authorities already take practical steps to protect their property from burglary and vandalism but there is undoubtedly room for improvement. They also accept advice on crime preven-tion from the police, who in recent years have begun to encourage the active involvement of public and private institutions in the prevention of crime (Schaffer, 1980; Moore and Brown, 1981). This can involve the police in helping local authorities to safeguard their property and drawing their attention to the crime prevention implications of day-to-day policies and practices (Engstad and Evans, 1980). This study aims to assess the scope for preventing school burglary by a range of measures which might be imple-mented by local education authorities. It also aims to assist the police in giving crime prevention advice to schools. As such, it is a modest attempt to extend crime prevention beyond the confines of the criminal justice system (cf. Home Office, 1977).

There seem to be four broad approaches which underlie many of the sugges-tions made for preventing property crime in schools (Hope, 1980). These can be thought of as the <u>therapeutic</u> approach, the <u>school reform</u> approach, the <u>involvement</u> approach and the <u>opportunity-reduction</u> (situational) approach. The therapeutic approach relies on counselling and similar techniques to dissuade 'disturbed[1] children from engaging in school crime. The school reform approach looks to the reform of school practices to forestall a destructive or criminal reaction by pupils to adverse school experiences. The involvement approach aims to develop a positive concern for schools amongst pupils and the local community. Finally, opportunity reduction aims to make crimes more difficult to accomplish and to increase the likelihood of detection.

There is little in the way of reliable evidence to suggest which of these courses are useful at first sight (Hope, 1980). The 'therapeutic[1] approach seems of limited value since its main assumption - that 'disturbed[1] children are responsible for school burglary - may well be untrue. For example, most 'self - report' studies show that a wide range of young persons admit quite serious offences (cf. Gladstone, 1978; Elliot and Ageton, 1980). The other three approaches seem more promising. There is some evidence to suggest that the general 'ethos' of a school has a marked effect on pupil behaviour, including violence and vandalism (cf.National Institute of Education, 1978; Rutter <u>et al</u>., 1979). Yet to isolate the influence of ethos on school burglary from other influences would be a lengthy and arduous task (cf.

---

1. This estimate is based on figures supplied by the Metropolitan Police

Rutter et al., 1979. The 'involvement' approach holds that schools suffer less property crime if their pupils and the surrounding community hold them in high regard (Stone and Taylor, 1977); yet it would be a considerable undertaking to measure these sentiments and to link them to the prevalence of school burglary.

This study focusses on the opportunity-reduction or 'situational' approach to burglary prevention since there is evidence that this approach can be useful in the prevention of a wide range of offences (Clarke and Mayhew, 1980). At the same time, however, it collects together basic information on school organisation, pupil intake and the extent of evening use of schools, so as to facilitate some discussion of the social and educational influences on school burglaries.

Hough et al., (1980) define situational crime prevention as "measures directed at highly specific forms of crime which involve the management, design or manipulation of the immediate environment in which these crimes occur in as systematic way as possible so as to reduce the opportunities for these crime as perceived by a broad range of offenders". Clarke (1980) notes that this approach assumes that offenders choose to commit offences on the basis of an assessment of risks and rewards, and will look for opportunities for crime. The built-environment, in particular, provides opportunities for crime. For example, opportunities may be provided by the prevalence of persons or property as targets of crime, ease of access to property and the extent to which there are opportunities for others to witness crime taking place (Mayhew et al., 1976). The design of schools, and the environment in which they are located, may encourage burglary by providing opportunities of various kinds.

Although manipulating opportunities may be easier than altering the motives of offenders (Clarke, 1980), such manipulation may nevertheless entail certain practical difficulties (Reppetto, 1976). Clarke (1978) has suggested that rf. is necessary "to match our understanding of factors contributing to a particular kind of (crime) with an analysis of the practicability of the various ways of preventing it". Consequently, this study assesses various options for preventing burglary both in terms of their causal relation to burglary and in terms of their feasibility in preventing it.

Method

The study took place in the Inner London Education Authority (ILEA), which offered a number of advantages. First, the ILEA has a wide range of schools located both in 'inner city[1] and suburban areas. Second, records of incidents of burglary and theft maintained in the ILEA were easily accessible and seemed an adequate basis for research.(2)

There were however certain difficulties in arriving at a suitable measure of the frequency of burglary in schools. Although the modern offence of burglary is deliberately broad (Griew, 1974), covering many acts involving trespass, a more restricted definition of the offence is used here resting mainly on the fact of forced-entry. Strictly speaking, this report deals with 'break-ins' rather than burglaries in general which can include any theft by trespassers whether they break into premises or not. There are two reasons for this. The first is that the ILEA's records were designed to assist in the process of accounting for the loss of equipment and did not distinguish routinely between burglaries and thefts which occurred during the school day. It was therefore necessary to decide which records referred to burglaries and which to thefts. Four criteria were used:

whether there was forced entry; whether intruders were mentioned in the record; whether the school was closed when the incident was reputed to have taken place; and whether the ILEA's security officers had reported the incident as a burglary. Inevitably, this produced a conservative estimate of the extent of burglaries in schools. While two or more criteria were present for virtually all (93%) of the incidents defined as burglaries, 84% of them actually involved forced entry.

A second reason for defining school burglary in terms of forced entry is that this accords with the perception of people in schools. During the course of this study it became clear that most head teachers and caretakers thought of burglaries as 'break-ins'. This may reflect lay concepts of the offence or it may reflect the evidential problem of not knowing whether a piece of equipment has disappeared as a result of a burglary or an 'internal' theft except when there is clear evidence, such as signs of forced entry. Attempted burglaries (where intruders fail to gain access to school buildings) probably go unreported. Of the school caretakers who were interviewed in this study 44% said they had experienced incidents where it was unclear whether an attempt might have been made at burglary and most of them usually did not report these incidents. In contrast, only two out of the 59 caretakers interviewed (one for each school site in the study) said that they had not at some time reported an incident of forced entry. Therefore, while this study may overlook some of the incidents which would fall within the legal definition of burglary, it probably records those incidents (involving forced entry) which cause most concern.

In selecting a sample of schools it seemed sensible to restrict the possibility of bias arising from the more obvious differences between schools. For instance, the ILEA records showed that secondary schools experienced on average about three times more burglaries than primary schools. Also, both co-educational and boys' secondary schools had on average roughly twice as many burglaries as girls' schools. It was thus decided to exclude both primary schools and girls' schools because although differences attributable to the sex and age of school intakes might be important in explaining the causes of school burglary, there seems little scope for altering them appreciably. There also seemed merit in focussing attention on those schools where the problem is most severe.

Another factor considered in the sampling of schools was the programme of reorganisation of schools along comprehensive lines which the ILEA were pursuing during the course of the study. If schools which had not been reorganised had been selected, some might have closed or been amalgamated with other schools during the course of the study. It was therefore decided to focus only on those schools which had already been reorganised as comprehensives for at least two years prior to the study.

A 60% random sample of schools was drawn from those ILEA coeducational

2. ILEA and police records were compared to assess the suitability of each for this study. The number of burglaries suffered by a small group of schools over a six-month period were compared. Although the majority of burglaries could be found in either sample, the ILEA sample produced somewhat more burglaries than police records. This may be due to differences in recording practice, difficulties in tracing burglary reports in police records; or to the fact that not all burglaries are reported to the police.

and boys' schools which had been recognised by the Department of Education and Science as having a comprehensive intake since at least January 1976. This produced 46 schools. Because the study would be considering environmental factors, it was decided to treat each school site as a separate unit of analysis. There were thirteen schools in the sample occupying two sites each, giving an effective sample size of 59 school sites.(3)

The statistical analysis in this study (Chapters 3 & 4) uses data from ILEA records on the frequency of burglary at each school and covers a two-year period between January 1977 and December 1978. Preliminary analysis had suggested that the relative ordering of schools in terms of frequency of burglary remained much the same from year to year. However, two years[1] figures provided a greater dispersion of burglary frequencies than one year's, ranging from 0 to 24 over this period. The description of the characteristics of burglary incidents (Chapter *2*) was collated from ILEA records covering a three year period (January 1975 to December 1978), during which 430 separate burglary incidents were recorded for the 59 schools. Information about burglaries was also gathered from interviews with all the headteachers (of the 46 schools) and caretakers (of the 59 school sites).

Information on the educational, social, administrative and environmental characteristics of schools, their intakes and the areas in which they were located was acquired from a variety of different sources. These included: interviews with headteachers and caretakers, information on school intakes collected by the ILEA, data from the 1971 Census, and site surveys at each school. An appendix to this report lists the variables included in this study along with a brief description of how they were measured.

Summary

This study was intended to provide local education authorities - the main agencies to introduce crime prevention measures in schools - with soundly-based advice on how to prevent school burglary. A situational approach to preventing school burglary was identified as promising, and it was decided to examine its prospects in detail. In particular this meant focussing on the role of the built environment in providing opportunities for burglary. It did however prove possible to comment on certain aspects of the role of social and educational factors in school burglary. Throughout, attention was paid to the feasibility of implementing measures suggested by the research.

3. For convenience, in the remainder of this report 'schools' will be taken to mean separate school sites, unless otherwise stated.

This chapter presents a profile of the nature and extent of burglaries In the sample of schools. Several different sources were used, for instance: ILEA records of burglaries over three years between 1976 and 1978; and interviews with the headteachers and caretakers of all the schools. Unfortunately it was not always possible to obtain quantitative information on the nature of school burglary and much of this chapter is necessarily impressionistic. The material is organised so as to provide a 'crime specific analysis' (Pope, 1977), which is intended to draw out the salient features of the offence.

Between 1976 and 1978 there were 420 burglaries at the 59 schools in the sample incurring losses of about £71,400 at 1978 prices. This averages out at roughly £170 per burglary. However, just under half these burglaries involved losses of less than £25 suggesting that many burglaries are fairly trivial. Nevertheless, about 30% of burglaries involved losses of more than £100, and the highest recorded loss of equipment during this period was £6,000.(1)

Unfortunately it proved impossible to separate the costs involved in repairing damage caused during burglaries from the cost of other maintenance repairs to ILEA schools. For an indication of the scale of the damage it is therefore necessary to rely on the more subjective assessment of head-teachers and caretakers. When asked to rate the extent of damage occurring during burglaries, just over three-quarters of the 46 headteachers said that it usually amounted to no more than enough to gain access to buildings and equipment. The remaining 22% said that their schools suffered a certain amount of vandalism during burglaries but none said that it was particularly serious. Of course, extensive vandalism does happen during burglaries but this seems to be quite rare. Only 10 headteachers, in describing their worst burglary over the period, specifically called attention to vandalism. Similarly most caretakers described the typical burglary as being fairly trivial with little of value stolen and not a lot of damage.

School burglaries often occur at weekends since more burglaries were discovered (accordingly to ILEA records) on Sunday and Monday mornings than on any other day of the week (a different pattern from residential burg-lary). However, seasonal variation in the amount of darkness bore no relation to the incidence of burglary, presumably because most school burglaries occurred after about 10 pm. Burglaries were no more likely to occur during holidays than during term time. Burglars of schools seem to operate late at night throughout the year with a preference for weekends when there is less chance of there being anyone around.

If school burglaries are usually accomplished in the dark, then a successful burglary must involve a degree of planning and some familiarity with a school's layout. This is because schools are often large and complex, having a caretaker living on the premises and are fitted out with intruder

---

1. The <u>Criminal Statistics</u> for 1978 give an average value for property stolen in residential burglary as £303, and £240 for non-residential burglary; which are higher than the average loss during a school burg-lary. Nevertheless, schools seem to have about the same proportion of trivial burglaries as other classes of property, for about half of all residential burglaries involved losses of slightly over £25, while half of all non-residential burglaries entailed losses of just under £25.

alarms. Burglars need to know where to go and how to avoid 'traps'. Past and present pupils can be expected to have a good knowledge of school layout and it is therefore not surprising that 40% of headteachers said that pupils had been apprehended after breaking into their schools. Nevertheless, it is not clear exactly how many burglaries are attributable to current school pupils nor for how many burglaries those arrested were responsible. It seems likely that people other than current pupils also break into schools, especially since the more serious losses from burglary may be the work of adults rather than children. Seeing that many schools are used by the public in the evenings for a variety of purposes, there may be ample opportunity for others to become familiar with the layout of schools. Consequently, it may be mistaken to attribute school burglary solely to current pupils.

It is not difficult to see why schools are frequently victimised for apart from being familiar to a large number of people they also contain considerable amounts of valuable and desirable equipment. Audio-visual electronic equipment seems particularly popular with the school burglar. The ILEA only record the type of property stolen during a burglary if its replacement value amounts to more than £25. Between 1976 and 1978 there were 179 burglaries (43%) where individual items stolen cost more than £25 (at 1978 prices). Audio-visual equipment was stolen in 70% of these burglaries. Additionally, cheaper portable tape recorders were reported by headteachers and caretakers as being very vulnerable. It is clear why this kind of equipment is stolen. Not only is it amongst the most common high value portable equipment to be found in modern schools, but also its resale value on the 'stolen goods market' is likely to be high given the considerable demand which nowadays exists for home entertainment products (cf. Henry, 1978).

Both headteachers and caretakers were asked to rate how serious a problem they considered burglary to be in comparison with other aspects of their work. The majority of both headteachers (83%) and caretakers (55%) thought that burglary was a minor or moderate problem, but caretakers were significantly more likely to think of burglary as a serious problem (30%) than headteachers (9%). This may reflect the fact that while headteachers have general responsibility for a school, it is usually caretakers who clean up after burglaries and who are responsible for security in a day-to-day sense. Although burglaries do not seem to cause too much disruption to the school routine, a few burglaries may be very troublesome. One headteacher reported, for instance, that losses from a particularly serious burglary had amounted to "as much as the previous 30 break-ins put together". Also, the cost of some burglary incidents, in terms of distress and the destruction of important papers or pupils' work, may outweigh the financial cost of damage.

Types of school burglary

Headteachers and caretakers were asked to describe the burglaries which occurred in their schools and to estimate how frequently they suffered from them. There were three common types of burglary which emerged. The respondents felt that the most common form of burglary was what might be called nuisance burglary. The following descriptions from caretakers are typical:

> "Burglars are mostly children, teenagers, some pupils. Usually entry is via a window. Petty goods, cash etc are often stolen. Often they don't take anything at all. Very little damage is done except to gain access."

> "Pupils, ex-pupils or teenagers from youth centre are mostly involved. They break open the table-football machine. There is some vandalism: they take sweets, etc."

> "Burglars are juveniles. There is not much vandalism; it is more a nuisance. They are not very professional - not much is stolen. Burglaries are mostly for devilment - the school is not broken into with theft in mind."

Typically, these burglaries may involve local adolescents (perhaps pupils or ex-pupils of the school) who seem to break into schools almost as an end in itself. They easily find their way around the building in the dark and avoid various pitfalls such as alarms or locked doors. Usually nothing of much value is stolen unless it happens to have been left lying around. Very little serious damage is done. A window may be smashed on entry and internal connecting doors may sometimes be kicked through. Serious vandalism is rare during this kind of burglary; slogans and obscenities may be scrawled on blackboards or walls and a few items of furniture may be broken. This kind of delinquency seems to be motivated far more by an adolescent need for excitement than by any particular malicious predisposition towards schools (cf. Parker, 1974; Gill, 1977).

Perhaps the next most common type of school burglary is what might be called <u>professional</u> burglary. For example:

> "Burglars are local criminals. Mostly adults. Little damage usually occurs except to get in. Not usually any vandalism. They steal video equipment, tape recorders, amplifiers, cameras etc."

> "Intruders got into the main storeroom for audio equipment by forcing a door which had a security lock. More professional and premeditated than others".

> "The two break-ins to the learning resources area were the only serious burglaries over this period. During April there were losses of £10,000; at Christmas £2,000".

These burglaries usualy exhibit a relatively high level of skill involved in entering schools and in breaking into secure stores containing audio-visual equipment. The proceeds from these burglaries may be fairly high, reflecting the kind of equipment which is stolen - for example, video-tape recorders, stereo-equipment and electronic musical instruments. Such equipment is bulky, suggesting that transport may also have been arranged. Little incidental damage is done and burglars do not seem easily distracted from the main task of stealing equipment.

A third, but (according to headteachers and caretakers) fairly rare type is what might be called <u>malicious burglary</u>. Paradoxically, this is probably the kind of burglary to schools which is popularly regarded as most common. Here, intruders break into the school and damage certain areas quite severely, most often the general offices or senior teachers[f] rooms. For instance:

> "Damage was done to the office - photocopying machinery, IBM typewriter and files were rifled, ink spilt, powdered milk was brought in from outside and strewn about. There was evidence of an intent to start a fire. Estimated cost of damage: £3,000".

"The headmaster's office has been vandalised during quite a few break-ins".

There may also be the occasional incident of <u>arson</u>, which is essentially a form of malicious burglary. Just over a quarter of headteachers said that their schools had been subject to arson incidents. However, the consequencs of these incidents are not usually too harmful. Only five headteachers said that any serious damage had occurred or that teaching and other school activities had been disrupted as a result of arson.

The prevalence of burglary

Although boys' and mixed schools were broken into more frequently than other schools, some schools within this group suffer far more from burglary than others. Some 38 schools (64%) had less than five burglaries between 1977 and 1978 including 11 schools (19%) which had no burglaries at all. In contrast, 19% had 10 or more burglaries each during this two year period. The most victimised school had 24 burglaries. Thus although the majority of schools had relatively few burglaries, some were at considerable risk.

Summary

An examination of the characteristics of burglaries in 59 ILEA schools over a three-year period (1976 - 1978) confirmed that there is some justification for refining preventive thinking. There was a sufficient number of serious burglaries to cause concern, and more trivial 'nuisance' burglaries can be harmful if allowed to persist. As burglaries for most schools are still relatively infrequent events, it is difficult to predict exactly when incidents are likely to occur, although evenings and weekends are the periods of highest risk. Losses are low in the majority of burglaries, but when serious theft does occur, it is most likely to be of expensive audio-electronic and visual equipment. Within this sample of relatively high-risk schools there was much variation in the number of burglaries experienced. This underlines the value of trying to determine why some schools are more prone to burglary than others and of considering how best high-risk schools might be protected.

3 BURGLARY AND SCHOOL DESIGN

Situational crime prevention stresses the importance of the environment in providing incentives and opportunities for crime (Hough et al., 1980). This chapter and the next describe how this proposition was examined with regard to burglary in schools.

Plan of the research

The broad hypothesis that different schools provide differential opportunities for burglary was examined in the following stages: first, schools were classified according to certain design characteristics to see whether schools of differing design had different rates of burglary. The results are reported in this chapter. Second, schools with broadly different designs were compared to determine the extent to which differences in burglary rates were due to social and educational influences or to differential opportunities for access, surveillance and reward. Finally, two groups of schools with broadly similar designs, but differing in the extent to which they were victimised, were compared to see whether the character of schools which depart from the general relationship between burglary and design can suggest fruitful prevention possibilities.

Relating burglary to school design

There are a number of ways in which the design of schools can be conceived and measured. These depend on the methods employed to collect information on school design and on how this information is organised to characterise the built environment of schools. The methods employed in this study were dictated both by the resources available for research and by the purpose for which the research was undertaken. Since the study was intended to be exploratory, it was decided to collect information on school design characteristics that was easy to obtain. Design variables were derived from site plans of individual schools and were supplemented with observation by the researcher (see Appendix for details). This method can be contrasted with one which seeks to elicit burglars' perceptions of school buildings. Since it did not seem particularly feasible to find a sample of school burglars who could be interviewed, it was decided to collect information on some common aspects of school design and to organise this information in such a way as to convey broad differences and similarities between schools.

Thirteen variables were selected to characterise the design of schools. These measured: scale; building configuration; building character and site character. Scale was measured by two variables : the plan areas of buildings; and site area. Building configuration was measured by three variables: the number of separate buildings; the proportion of the building area contained within the largest separate building (building concentration); and a ratio of building perimeter to area (plan compactness). Five variables were used to express building character. These were: the height of the tallest building; the proportion of single storey buildings; the amount of glazing; whether the school was built before or after 1945; and whether the school had been substantially altered or remodelled after 1945.(1) The site

1. Schools which contain pre-1945 buildings but which were substantially altered or added to in the post-war period were classified as having been built after 1945.

and grounds were characterised by: the total area of the site; the ratio of buildings to open space; the proportion of the site under grass (including playing fields); and whether the grounds were 'landscaped' in any way (i.e. containing trees, shrubs, flower-beds etc.).

As a first step, a multiple regression equation was calculated using all thirteen separate design variables as predictors of the extent of burglary. Together, the thirteen design variables were significantly related to burglary and accounted for a sizeable proportion of the variation in burglary frequencies between schools.(2) The pre-selected design variables taken together predicted the distribution of school burglary in the present sample fairly well. Nevertheless, there are a number of reasons why these findings do not greatly assist in the task of evaluating the hypothesised relationship between school design and burglary.

In the first place, the variables are highly inter-related. This is to be expected since they can all be thought of as attributes of some general concept of 'school design'. Therefore, despite it being possible to gauge their overall effect on burglary, it is not easy to interpret the way in which they combine together to influence the rates of burglary suffered by individual schools. One method of elucidating the relationship between school design and burglary is to use techniques which take as their starting point the actual pattern of relationships between the design variables. For example, one might seek to isolate some underlying 'dimensions' of school design (via principal components analysis) or one might eliminate the 'least important' predictor variables (via multiple regression). There are, however, at least two problems asociated with this type of approach. The first is that although the techniques may simplify the pattern of relationships, they may not greatly contribute to understanding. For instance, it is often difficult to ascribe meaning to the dimensions produced by principal component analysis. This is true in this study, where a principal components analysis of the matrix of correlations of the design variables did not produce readily intelligible or distinguishable design 'dimensions'. The strategy of eliminating all but the strongest predictor variables leads to similar problems and may simply substitute one or two variables which function as 'surrogates' for a wider number of attributes. In the present study, important variables such as size and age may actually stand for a collection of design attributes commonly associated with a large or old school, the individual effects of which are disguised when collated under the label 'size' or 'age'.

The second difficulty associated with a search for underlying dimensions, or the most important predictors, in a study of this nature is that there is a danger of drawing inferences from methods which may place too much emphasis on the particular configurations of the sample under study. While such methods may give an accurate picture of the pattern of relationships within a particular aggregation of data, they risk exaggerating what may

2. (R^2 = .48 F = 3.5; p.<.001). Because the distribution of burglary frequencies was somewhat 'skewed' towards the lower frequencies (see Chapter 2) it was thought advisable to transform the burglary variable to conform to the requirements of multiple correlation. Two standard transformations were used; one with a square-root base, the other with a logarithmic base. However, neither the square root (R^2 =.50), nor the logarithmic transformation (R^2 = .52) made any appreciable difference to the magnitude of the correlation between burglary

10

be chance associations peculiar to the sample. Hence, it was decided that these approaches, while useful in other kinds of research, were not very helpful in the present study.

It was therefore decided to adopt an alternative method, employing a hypothesis-testing approach towards understanding the relationship between burglary and school design. First, it was assumed, in the absence of any evidence to the contrary, that each of the thirteen design attributes measured was equally important in expressing the design character of schools. Hence these design attributes were combined additively to form a scale which would give equal weight to each of the thirteen variables and would express (albeit in crude form) the overall design character of each school.(3) The first test to be made was to see if this relatively crude classification of school design could be shown to be related to the incidence of burglary.

A simple correlation showed that the position of a school on the design continuum scale was in fact related significantly to its chances of burg-lary.(4) The robustness of the design continuum scale and its relationship to likelihood of burglary having been established, the next step was to inspect in more detail the nature of schools positioned high and low on the design continuum.

Table 1 sets out the characteristics on the whole associated with schools falling at either end of the design continuum. Schools with high scores tended to be large, modern and sprawling; schools with low scores to be small, old and compact.

The buildings of high scoring large modern and sprawling schools (referred to from now on as LMS schools) tended to be dispersed within the school site which was grassed and 'landscaped'. They had large areas of glazing and varied in building height. Schools with low scores tended to be small, old and compact. Their buildings were concentrated on restricted sites devoid of grass, trees and shrubs. They were more uniform in height and did not have substantial areas of glazing. This type of school will be referred to from now on by the initials SOC (for 'small, old and compact'). Schools with intermediate values on the design continuum are difficult to describe since they could either be 'middle sized' schools (with, for instance, medium sized buildings) or 'hybrid' varieties (for example, old schools set in large grounds, or new schools on restricted sites). However, the design continuum scale had aimed to describe broad tendencies in school design rather than precise architectural configurations. Its utility is shown by the way it relates to burglary rates, and by its ability to discriminate between two major types of schools: SOC schools (snail, old and compact) and LMS schools (large, modern and sprawling)).

3. Because the attributes were measured in different scales, it was neces-sary to transform each variable to a standard scale so that they could then be combined. This was done by expressing each variable in terms of standard units of deviation from its average value.

4. r. = .53, p.<.001.

Table 1

Design attributes associated with schools high or low on the design continuum scale.

	Schools low on Scale	Schools high on Scale
1. Area of buildings	small	large
2. Area of site	small	large
3. Number of buildings	few	many
4. Concentration of buildings	concentrated	diffuse
5. Compactness of buildings	compact	sprawling
6. Height of tallest building	'low-rise'	'high-rise'
7. Proportion of single storey structures	none	some
8. Amount of glazing	little	substantial
9. Age of buildings	old	modern
10. Buildings of different ages	same age	different ages
11. Penalty of buildings to site	dense	sparse
12. Proportion of site under grass	none	mostly grass
13. Whether 'landscaped'	none	trees, flower-beds etc.

Note

All descriptions are relative to the maxima and minima of the attributes within the sample measured.

This ability is demonstrated by a correspondence between the 'SOC' and 'LMS' design tendencies and the architectural styles associated with the two main phases of school building in London (cf. Seaborne and Lowe, 1977). The first phase - corresponding to the 'SOC' design tendency - occurred during the three decades following the Education Act 1870 when a large number of schools were built in what has come to be known as the 'Queen Anne -' or 'Board School-' style (Seaborne and Lowe, 1977). Such schools are still a noticeable feature of the inner areas of London and of other British cities. They are typically "tall, redbrick buildings, with prominent chimneys, narrow windows and white sashes" (Seaborne and Lowe, 1977) with classrooms leading from a large central hall on each floor. Some 25% of schools in this sample are unchanged versions of this type. The second phase of school building - corresponding to the 'LMS' design tendency - occurred during the quarter century following the Education Act 1944. Schools built during this period both reflected and were in the forefront of the 'modern' approach to architecture (Seaborne and Lowe, 1977). The large, expansive schools to be found in the surburban areas of many British towns are one example, but 'modern' schools (often those which have won design awards) can be found in more restricted, urban sites as well.

Having established the rough general relationship between the design continuum and burglary by the correlation reported above, and having seen that the design continuum had some 'face validity' in reflecting differences between LMS and SOC schools known to occur in the Inner London Education Authority, (5) the next step was to inspect in some more detail the variant chances of burglary in groups of schools located high, low or midway on the design continuum. Schools were allocated into three equal sized groups: SOC schools at the lower end of the design continuum, LMS schools at the upper end of the continuum, and a group of 'intermediate' schools between them. The frequency of burglary in each type of school is shown at Table 2 below:

Table 2

Frequency of burglaries in different groups of schools within the design continuum, 1977 - 1978.

	SOC schools (low on design continuum) (n. 20)	Schools inter- mediate on design continuum (n. 19)	LMS schools (high on design continuum (n. 20)	Total schools (n. 59)
Number of schools burgled				
10-24 times	--	4	7	11
5-9 times	1	3	6	10
1-4 times	12	10	5	27
Number of schools not burgled	7	2	2	11
Average number of burglaries _per_ school	1.4	5.1	7.9	4.9
Index of variation in burglaries within groups (variance)	2.2	23.9	42.2	29.3

A detailed examination of Table 2 helps to illuminate the differences in **burglary rates betwen** different 'types' of schools. Although SOC schools **had significantly fewer** burglaries than either Intermediate or LMS schools; **the tendency for** LMS schools to have higher rates than Intermediate schools

5. The design continuum scale may, however, have some limitations if applied outside London. First, this classification probably takes less account of inter-war designs and the design of 'traditional' grammar schools because both types are under-represented in this sample. Second, the scale is drawn from secondary schools and may not reflect differences in the design of primary schools.

was far less strong.(6) This is because schools in both the Intermediate and LMS categories varied considerably in their frequencies of burglary.(7) While some of these schools (especially LMS ones) had far higher rates of burglary than SOC schools, others had similar, low rates.

These results suggest two lines of enquiry. The first is to discover why SOC-type schools have lower rates of burglary than other schools; particulary whether this is due to social and educational differences or to differential opportunities for burglary. The second line of enquiry is to discover why some 'Intermediate' and LMS schools depart from the general relationship between burglary and design and have lower rates of burglary than might be expected. These issues will be addressed in the subsequent chapter.

6. This can be seen by comparing the results of different statistical tests of the difference in burglary between Intermediate and LMS schools. If the difference in burglary is considered in very broad terms, then 'LMS' schools have significantly more burglaries than Intermediate schools (for instance, 13 out of 20 LMS schools had five or more burglaries over the period compared to 7 out of 19 Intermediate schools; Chi-squared = 4.32, d.f. = 1, p.<.05). However, a more detailed comparison reveals that while some LMS schools have the highest rates of burglary; LMS schools do not, on average, have significantly higher rates of burglary than Intermediate schools (t = 0.21, d.f.37, NS).

7. Which can be seen by comparing the variances of burglary frequencies for the three groups.

4 OPPORTUNITIES FOR BURGLARY

This chapter explores further the determinants of school burglary. It has already been established that schools high on the design continuum are more frequently burgled than schools low on the continuum. Is this difference also associated with differences in the social and educational characteristics of schools? In what ways do schools afford different opportunities for burglary? It has also been established that some schools with similar designs had different rates of burglary. Can a more detailed investigation tell us why?

Social and Educational differences

The literature on crime in schools suggests three social or educational explanations of why some schools are victimised more than others (Hope, 1980). These are:

i.   schools are broken into because they are situated in areas where those predisposed to burglary might live (area differences);

ii. schools are victimised because their pupils are predisposed to burglary (intake differences);

iii. schools are victimised because the way they are organised and run predisposes people towards burglary (school differences).

i. Area differences

It is impossible to test this notion directly without access to a sample of the population in the surrounding area, but certain very limited inferences can nevertheless be made. In a study of crime in Sheffield, Baldwin and Bottoms (1978) found that the predominant type of housing in an area, together with the size of the male juvenile population, were good predictors of differences in crime rates between areas of the city. It was therefore decided to concentrate on these variables. However, neither the predominant type of tenure, nor the proportion of the young male population in the area surrounding the schools could account for differences in burglary rates between SOC and LMS schools. Nevertheless, it seemed that location in an area of owner occupation did have some slight association with low levels of burglary, but this relationship was confounded by the predominance of the more vulnerable kind of school buildings (LMS-type) in these areas.(1) An alternative explanation of variant risks of burglary is that schools are victimised most often when a greater proportion of their pupils live nearby and are free to return at night (National Institute of Education, 1978). However, no relationship was found in this study between risks of burglary and proportions of pupils living in the neighbourhood.

ii. Intake differences

The ILEA routinely collect a number of indices of disadvantage amongst their school population in order to provide an index of 'adverse' school

_____

1. i.e the partial correlation between burglary and the proportion of households in owner occupation, holding school design constant, was -.220 and significant only at the 10 per cent level; which is a weaker criterion than has been employed throughout the rest of the report.

intake. The relationship between burglary and the design continuum was assessed in the light of five of these variables (see Appendix). While none of them, separately or together, could account for the relationship between burglary and school design, they made a significant additional contribution to the prediction of the frequency of burglary at individual schools.(2) Thus it seems reasonable to conclude that an 'LMS' school, which is vulnerable to burglary by virtue of its design, will face a increased or reduced risk of burglary by virtue of its pupil intake.

iii. School differences

All schools in the sample were secondary schools and catered for a comprehensive range of abilities, so the effect of these characteristics cannot be assessed. Even so, there are a variety of ways in which schools can be organised or run and, as Rutter et al. (1979) have found, these differences may be important in explaining the success and failures of individual schools.

Voluntary-aided schools (3) had lower rates of burglary than maintained schools. This may have been due to the fact that more voluntary-aided schools were built to 'SOC'-type designs. Nevertheless, being a voluntary-aided school also appeared to somewhat reduce the risk of burglary arising from school design.(4) Schools on more than one site had lower burglary rates than single-site schools but this difference may have been fully accounted for by the fact that they were more likely to be of SOC-design.

Schools with large buildings and sites also have large numbers of pupils and it could be argued that the correlation between burglary and design merely reflects a greater number of pupils, amongst whom there might be a greater number of offenders. Yet this does not appear to be so. In the sample as a whole, the relationship between school population and burglary disappears when design is taken into account. Equally, pupil numbers cannot account for different burglary rates between schools with different designs. The individual sites of split-site schools were treated separately in this study although each site can be regarded as having the same number of pupils as its partner (i.e. the total number attending the school). Even so, individual sites differed markedly from their partners in the extent to which they were victimised. Similarly, the differences in burglary rates between single-site schools could not be attributed to differences in their pupil populations. Thus although, in general terms, physically large schools have large numbers of pupils, it would seem that differences in burglary rates are due to design factors and not simply the size of the pupil population.

2. i.e the co-efficient of the regression (R^2) of burglary on the design continuum only was .27; while that on the design continuum plus the five intake variables increased to .46 - an increase which was significant at the 1 per cent level.

3. i.e part-funded by other institutions such as religious denominations or charitable foundations (voluntary aided), rather than supported wholly by the local education authority (maintained schools).

4. An increase in the regression co-efficient significant at the 5% level.

As explained in Chapter 1, no attempt was made to assess the nature or quality of educational provision in each school. Even so, other studies have suggested that staff-pupil relations, and a school's general ethos, are important influences over whether pupils misbehave in and out of school (Hargreaves et al., 1975; Reynolds and Jones, 1978; Rutter et al., 1979). American research sugests that schools which suffer from property crime are large and impersonal, have lax and inconsistent discipline and pupils who perceive rules to be enforced ambiguously and unfairly (National Institute of Education, 1978). School ethos was not examined here, but the present results suggest that if ascertain ethos discourages burglary it is the kind of ethos which is shared by all SOC schools but only present in some others (i.e those 'non-SOC' schools with low burglary rates). It is unwise to take this too much further on the basis of the evidence available but one intriguing possibility is whether a SOC school provides an 'ecological setting[1] (cf. Barker and Gump, 1964) which enables certain staff-pupil relations to develop naturally, while in other schools additional effort has to be made to overcome the deleterious effects of size. However, this is an arguement of long-standing (Benn, 1975) and recent research (Rutter et al., 1979) has not found size, at least, to be important in setting the ethos of a school.

It is a commonplace in the literature on school vandalism that schools should seek to involve the community in preventive schemes (Casserly et al., 1980; Stone & Taylor, 1977; National Institute of Education, 1978) because it is assumed that vandalism and burglary flourish where people are indifferent to the schools in their neighbourhood (Hope, 1980). One way of involving the community in schools is by organising activities in them during the evenings. The use of schools for regular evening activities was extensive. Only 7% of schools had no regular users while over *60%* were open at least 5 nights a week. It might be expected that the more schools were open for a wide range of evening activities, the more chance the community would have to become involved in school life and the fewer burglaries schools would be likely to suffer. However, the results are contrary to this supposition. The type and extent of evening use seem to be determined by the scale and design of school buildings and are not related independently to burglary. The most vulnerable schools ('LMS-type') have the most evening use, are more likely to be used by adults as well as youths and to have activities run by the local education authority. Consequently, there were two types of activity which were associated with burglary more than others: schools where an Adult Education Institute (AEI) was the sole evening user and schools where both an AEI and an ILEA Youth Centre were available. Unfortunately, these are the most common ways in which the schools in the sample were used in the evenings.

In conclusion, it would appear that differences in rates of burglary between schools of different design are not simply due to the area, intake or school variables which have been included in this study. This is not to deny the potential influence on burglary of social and educational factors. In particular, the influence of 'school ethos' and the relationship between schools and their surrounding communities, may merit further study. What this study has established is that while certain social and educational factors (e. g pupil intake, voluntary or maintained status) seem to have some effect on burglary risk, design alone appears to exert a strong and consistent influence on a school's vulnerability to burglary. The next step is to look in more detail at the specific design characteristics which may encourage burglary.

Which design variables matter?

There are perhaps two ways in which design might influence burglary. On the one hand, Pablant and Baxter (1975) argue on the basis of their research that the "quality of upkeep and aesthetic appeal of school property, although modest, may be instrumental in engendering community concern and pride" in schools thus lessening their vulnerability. Additionally, Allen and Greenberger (1978) produce evidence that school vandals derive enjoyment from damaging particular types of materials (such as glass) typically found in abundance in modern schools. On the other hand, design might influence burglary less through any aesthetic process, than as a setting which provides opportunities for burglars to enter school premises with ease and without being seen (cf. Clarke & Mayhew, 1980).

This study did not attempt to measure the quality of upkeep of school buildings, both because of obvious measurement difficulties and because it is difficult to know whether a poorly maintained school is a cause or an effect of burglary and vandalism. However, some indication of the way in which design influences burglary can be gained by examining how the individual variables which comprise the school design continuum relate to burglary. Table 3 displays the correlations between frequencies of burglary and the individual elements of the design continuum.

Measures of scale and building configuration were related consistently to burglary while measures of building and site appearance were not. For instance, it did not seem to matter whether schools had large amounts of glass, whether they were low-rise or high-rise, or whether they are composed of one style of architecture or several. In fact, large modern schools seemed to be broken into more because they were large than because they were modern. It did not matter in itself whether the site was grassed or not and, contrary to expectations, schools whose grounds were landscaped and contained trees and shrubs were actually broken into more often than schools whose grounds were merely grassed or not landscaped at all. Those aspects of design which did appear to distinguish schools with different levels of burglary were: the size of school buildings; their layout (particularly the extent to which building layout is diffuse and spread out); and the size of school grounds.

It is possible that people (including burglars) develop negative feelings about large and sprawling buildings though there is little reason to see why old, cramped, 'fortress' schools are any more attractive. If the appearance of school buildings does encourage people to break into schools it does not seem to do so in any particularly clear-cut way. Thus while there are different views as to the relative architectural merits of different kinds of school design it may not be particularly easy to evaluate such opinions in respect of their influence on school burglary. It is however easier to understand how the design of school buildings might provide opportunities for unobserved access; particularly since certain specific design features, which provide access and surveillance opportunities, are associated with the overall design character of schools.

Opportunities for burglary

Access opportunities

Schools toward the upper end of the design continuum (LMS schools) seem to provide more opportunities for access to both site and buildings. Size by itself may be important, because large schools may simply offer more opportunities than small schools. However, LMS-type schools usually have

Table 3

Correlations between different aspects of school design and burglary

Scale	correlation coefficients
1. area of buildings	.59*
2. area of site	.44*
Building configuration	
1. number of separate buildings	.32*
2. concentration of building area (concentrated (+) diffuse (-))	-.42*
3. compactness of buildings (compact (+) sprawling (-))	-.42*
Building appearance	
1. height of tallest building	.05
2. proportion of single storey buildings	.16
3. amount of glazing	.18
4. whether built after 1945	.42*
5. whether buildings are of different ages	.21
Site appearance	
1. density of buildings to site	.19
2. proportion of site under grass	.20
3. whether landscaped (e.g. trees, shrubs etc.)	.42*
Overall design (the design continuum)	.53*

*Correlation coefficients significant at the 5% level with 59 cases.

lower perimeter boundaries than SOC-type schools. Although LMS-type schools have proportionately fewer low-level windows than SOC schools, these windows are also less likely to be protected by grilles. There are also greater opportunities for access to roof areas. In contrast SOC-type schools have higher perimeter walls, fewer accessible windows and fewer opportunities for access to roofs. Additionally, observation at these schools suggested that they are more likely to have heavy wooden doors rather than the modern glazed doors of newer schools.

Surveillance opportunities

It seems reasonable to assume that offenders fear being seen or otherwise detected during the course of their offences and that increased surveillance

will deter burglaries (Mayhew et al., 1978). 'Natural' surveillance comes from members of the public going about their daily lives and might be exploited by design or other measures. An increased level of activity in public places might lead local inhabitants to a greater concern for their neighbourhood and increase the number of [f]eyes on the street[1] who are in a position to observe illicit activity (Jacobs, 1961). Pablant and Baxter's (1975) study of vandalism to schools in Houston for example, found that schools which were located in busy neighbourhoods were less likely to be victimised than those which were isolated from neighbourhood activity or surrounded by open space.

This study found that the location and design of LMS schools provided fewer opportunities for natural surveillance than the less vulnerable SOC schools. Significantly more LMS schools were located in areas of lower population density where owner-occupied households predominated. These schools were more likely to be away from public thoroughfares and less well illuminated by street lighting than SOC schools. Public activity in these areas is likely to be low and intruders may therefore be able to enter school grounds without being seen.

Nevertheless, the type of property in the immediate vicinity of LMS schools was not significantly different from that surrounding most SOC schools. Additionally, the grounds of LMS schools are extensive, containing trees and shrubs, and may provide intruders with good cover as they approach school buildings. Because of their 'sprawling' design a greater proportion of LMS school buildings face inwards and are out of sight of the surrounding neighbourhood, presumably allowing intruders to enter buildings unseen.

LMS schools also had worse lighting than SOC schools. LMS schools were more likely to be illuminated by free standing light fixtures within their grounds, while SOC schools had more of their exteriors lit by fixtures attached directly to the walls of school buildings. Light-stands may simply throw a pool of light around the fixture and cast the surroundings in greater shadow while lights attached to building exteriors may better illuminate potential entry points.

Burglar alarms

Intruder detection alarms are an increasingly popular means of improving the surveillance of schools. Their effectiveness, however, is difficult to evaluate in this kind of study since alarms seemed to be installed as a response to burglary (schools with intruder alarms had more burglaries than schools which did not, no doubt indicating that alarms are installed in schools which need them). Unfortunately$_t$ without some idea of how many burglaries schools would have suffered if they had not been given alarms, it is impossible to know how effective alarms might be. Obviously alarms do not reduce burglaries to nothing, but this criterion is perhaps an unreasonable test of their effectiveness.

Nevertheless, alarms are not installed just because a school suffers frequently from burglaries. Alarms were installed in LMS-type schools regardless of the actual number of burglaries they suffered. This is presumably because LMS schools have more property and equipment at risk of theft or damage which can justify the expense of installation. Additionally LMS schools may be regarded (correctly) by the ILEA as facing a greater risk of burglary. Alarms seem to be deployed in schools in the form of 'trap' protection, which means that only highly vulnerable areas (such as media resources stores) are placed under alarm. It would therefore seem reasonable to expect that schools with alarms would have lower losses

during burglary incidents than schools without alarms. However, losses per incident were unaffected by whether the schools had an alarm, even when allowing for the fact that losses per incident generally increase with the frequency of burglary.

Employee surveillance

Mayhew et al. (1979) argue that surveillance by 'employees' such as caretakers may be a more powerful deterrent than surveillance by the general public. By living on the premises, caretakers have far greater opportunities for actually witnessing crime than ordinary passers-by (just over a third of caretakers had said that they had seen intruders in the school grounds from their homes). Caretakers may also be more prepared to take action than members of the general public. This is of course not to imply that caretakers should be required to intervene directly with intruders but most seemed willing to call the police or to investigate suspicious behaviour. In this respect many caretakers kept large dogs as pets and 44% said that their dogs usually accompanied them when they walked around the premises last thing at night. Indeed, many caretakers were of the opinion that their dogs acted as deterrents to intruders, although they were of course careful not to turn them into guard dogs.

All the schools in the sample, except two, had caretakers who lived on the premises. Nevertheless, design may make caretaker surveillance more effective in some schools than in others. The smallness and compactness of SOC-type schools may actually make it easier for caretakers to intervene, or at least for potential intruders to think that they might. Thus although caretakers were no more able to see much of the exterior of the school buildings or grounds, being in closer proximity to most of the school they may be better placed to hear intruders breaking in. Similarly, the boundaries of SOC-type schools are likely to be brick walls over 6 foot high. Even if intruders were able to scale the perimeter without being observed by passers-by, they may feel that the caretaker could be watching or waiting for them on the other side. Additionally while 80$ of caretakers lived in detached houses in the grounds, 15% lived in flats integral to the buildings and these were all in SOC-type schools. Intruders may be deterred from burglary if they are aware that the caretaker and his family are living somewhere within the building.

LMS-type schools also have resident caretakers but their design renders employee surveillance much less of a deterrent. If breaking into an SOC-type school can be likened to breaking into the house next door to the caretaker, then a burglary to an LMS-type school is like breaking in three streets away. Virtually all entry points identified by caretakers were out of sight of caretakers' homes and 58% were on the opposite side of the site. Thus although all schools have the same caretaker provision, differences in school design may determine whether it is likely to be sufficient.

Reward

It could be argued that the frequency of burglary to LMS schools is in large part due to the greater amount of equipment they are likely to possess. This may, however, be overstating the case. In the first place, just over half of all burglaries involved losses of equipment valued at £25 or less Cat 1978 prices). Many of these burglaries are likely to be of the 'nuisance' type where burglars are perhaps attracted less by the prospect of gain than by the chance of excitement or the ease of entry. Burglaries to LMS schools also entailed no greater financial loss of equipment during

each incident than those at SOC schools and there were also some LMS schools which although doubtless possessing a substantial amount of equipment had as few burglaries as most SOC schools.

Consequently, if it can be assumed that the successful 'professional' school burglary will entail substantial loss, then it seems reasonable to infer that LMS schools, despite a greater abundance of equipment, are no more likely to attract the professional burglar than SOC schools, because the former are no more likely to have a greater number of costly burglaries than the latter. Of course, it is posible than LMS schools have more burglaries than SOC schools simply because it takes longer to 'clean them out' of equipment but this seems unlikely given the finding that the majority of burglaries involved small losses (a median loss of £27 at 1978 prices) and the fact that stolen equipment is continually being replaced. Schools as a whole may be more attractive than other classes of property because they contain valuable equipment but, as the evidence presented in Chapter 2 suggests, anticipated reward is unlikely to be the sole motive for school burglary. Equally, it seems unlikely that the different amounts of equipment possessed by each school can explain the considerable variation in burglary rates between schools.

It was not feasible to ascertain whether the security of equipment varied between schools. For example, it would not have been easy to discover whether some schools had lax security. In any case, lapses in security practices are probably temporary, given the existence of ILEA regulations about the security of equipment. It is also the practice for the ILEA's security officers to make sure that schools which have recently suffered a burglary are familiar with the rules about securing equipment. Schools also did not seem to vary greatly in the provision of secure stores for valuable equipment. 86% of schools had an audio-visual equipment store which had been secured against burglary in some way (e.g with a reinforced door, or an intruder alarm) and those which did not have a store did not have any greater losses from burglary.

'Non-SOC' schools and burglary

It has already been shown at chapter 3 that the relationship between burglary and design is not straightforward. Whereas all 'SOC' schools had lower rates of burglary than other schools; there was much more variation in burglary amongst 'non-SOC' schools, despite the fact that on average they had higher rates of burglary than SOC schools. Some 'non-SOC' schools had rates of burglary comparable to SOC schools, despite differences in design. It is therefore pertinent to see why some schools had lower rates of burglary than might be expected from their design since this might provide additional reasons why some schools are broken into more often than others.

To pursue this issue further, the 'non-SOC' schools (n = 39; Table 2) were allocated to two virtually equal-sized groups: one group which had four or fewer burglaries between 1977 and 1978 ('low burglary[1] schools, n = 19); and another group which had five or more burglaries over the same period ('high burglary' schools, n = 20).

The 'low burglary' group had a similar rate of burglary to SOC schools but differed in design. The 'high burglary[1] group had designs similar to the 'low burglary' group but were distinguished by significantly higher burglary rates. Other variables which distinguished these groups of schools were

then identified.(6)

In this group of schools (none of which were small, old and compact) a combination of environmental and social factors distinguished those with a low frequency of burglary from those with high frequencies. A significantly larger proportion of 'high burglary' schools were of single storey structures; implying greater opportunities for access to roof areas. Additionally, a greater proportion of the ground floor of 'low burglary' buildings was in sight of the caretaker's house; implying a greater potential for surveillance of the premises.

Seven 'low burglary' schools were voluntary-aided compared with only one 'high burglary' school. Fewer pupils in 'low burglary' schools were living with both natural parents and fewer lived in close proximity to their schools. Additionally, significantly fewer 'low burglary' schools had either an ILEA Youth Centre or an Adult Education Institute sharing their premises. In the sample as a whole, voluntary schools had fewer pupils with divorced or separated parents; they tended to draw their pupils from a wider area; and had less ILEA-organised evening activities. Earlier it was noted that the lower rate of burglary at voluntary-aided schools may have been partly attributable to there being more SOC schools in this category; but it is also possible that other aspects of voluntary schools (and some maintained schools as well) might also reduce the risk of burglary. This study could not investigate this proposition in detail. However, there are a number of lines of enquiry which are suggested by the findings. First, it is possible that greater parental support for schools, and more parental supervision, might inhibit pupils from burglary. Second, some schools may encourage their pupils to identify positively with them. Voluntary schools might achieve this through their denominational connections, other schools might achieve this in other ways. Third, and paradoxically, 'low burglary' schools may actually be less familiar to the surrounding community than other schools. Fewer local children may attend and the schools are less likely to have evening activities which are open to all. Thus those amongst the surrounding community who might contemplate burglary may have less opportunity to become familiar with the layout or contents of these schools. Whatever the merit of these speculations, it may be that there are certain schools (perhaps more common within the voluntary than the maintained sector) which either foster a sense of identity amongst their pupils, or which separate themselves from the surrounding community in such a way as to lessen their chances of burglary. Further research would be necessary to substantiate these speculations.

6. There are, or course, alternative ways of discovering why some schools had a greater or smaller number of burglaries than others of broadly similar design. One method which was employed (but not reported here) was to identify those schools which had greater or fewer burglaries than might have been predicted from an assumed relationship between burglary and the design continuum (i.e those schools with large positive or negative residual values from the regression of burglary on the design continuum). There were fewer SOC schools in these 'deviating' groups because there was less variation in burglary rates in this group than in the non-SOC group. The features which distinguished these groups from other schools were, for the most part, similar to those found from a direct comparison between 'low burglary' and 'high burglary' non-SOC schools, and it was decided to use this latter method to focus more sharply on differences amongst non-SOC schools.

Summary and conclusions

Differences in burglary rates between schools seem to owe more to differential opportunities afforded by their design than to their social and educational characteristics. Schools which resemble the 'SOC' design-type (small, old and compact) are less accessible than schools resembling the 'LMS' type (large, modern and sprawling) of school design. SOC schools also afforded greater opportunities for surveillance by the public and by school caretakers. These opportunities seem to exert a powerful influence on schools' vulnerability to burglary despite differences in appearance, surrounding neighbourhood, pupil intake, evening use and amount of equipment. Nevertheless, certain social and educational characteristics (e.g. type of pupil intake, voluntary status) seem to increase or reduce a school's risk of burglary; but this is in addition to the risk which arises from opportunities associated with a school's design.

It is important to emphasise that individual opportunity factors were related to burglary only in conjunction with the overall design of a school. For example, a caretaker seemed more of a deterrent in an SOC school than an LMS school. Other opportunity variables were not related to burglary except in association with school design. (7) This is because opportunity features such as high perimeters, secure windows etc. were common features of SOC schools but not of LMS schools. This piece of research aimed to discover whether variation in burglary between schools was a result of differential opportunities. As such it is based on the 'natural variation' between schools in the existing sample.(8) It would seem that opportunities for burglary 'clump together' in schools of different design. Thus, for example, there are far fewer instances of LMS schools with perimeter walls of a height comparable to those at SOC schools. Since, to continue the example, high walls are not common attributes of existing LMS schools, it is difficult to ascertain whether LMS schools would be quite so vulnerable to burglary if, in fact, their perimeter walls were raised. Short of finding enough examples of LMS schools with high walls (which on the evidence available seems unlikely), the only way of discovering whether an increase in the height of the perimeter at LMS schools would deter burglars is by experimentation. The next chapter discusses whether this and similar crime prevention experiments would be desirable and feasible.

7. That is, the design continuum 'interprets' the relationship between individual opportunity variables and burglary.

8. See Clarke (1976) for a discussion of the merits of this kind of research design in another form of policy-oriented research.

5 A REVIEW OF PREVENTIVE MEASURES

This chapter assesses a number of possible courses of action which might be taken to reduce the frequency of burglary in schools. Most attention has been paid in this study to the role of 'situational' variables in school burglary. Consequently much of the discussion centres on the prospects of developing a situational approach to the prevention of school burglary. Nevertheless, something has been learnt about the role of social and educational factors, which enables some discussion of the prospects of employing measures based upon them. In framing a burglary prevention policy, education authorities would need to be mindful of the costs and feasibility of particular measures as well as their likely benefit in reducing burglary. Accordingly, various ways of preventing burglary are assesed in terms of their feasibility as well as their promise of effectiveness.

Building new schools

Since the design of schools was found to be of major importance in providing opportunities for burglary, it seems necessary to consider whether more 'defensible' schools are a viable option for the future. A survey carried out in 1976 (Department of Education and Science, 1977) estimated that a projected decline of 10% in the secondary school population by 1986, combined with the requirement to maintain adequate standards in secondary schools, might lead to a 38% reduction in the number of places in schools built before 1946 - which are most likely to be of 'SOC' design. Ironically, the very characteristics of SOC-type schools which lower their vulnerability to burglary (size, age, compactness) also mean that they are unsatisfactory for modern secondary schooling. While the Department of Education and Science (DES) survey found that older secondary school buildings were generally structurally sound and were not especially over-crowded, they nevertheless lacked many of the features thought necessary for the modern curriculum. For example, they were inadequate in their provision of practical accommodation, large spaces, staff accommodation, kitchen facilities, lavatories and playing space. Additionally, an SOC-type building seems more likely to be part of a split site school, and these are often difficult to administer and organise.

It would be foolish to suggest that the imperatives of a shrinking school population and the provision of adequate facilities should be reversed simply on the grounds of crime prevention. However, this may mean that the number of naturally advantaged schools (at least in terms of crime prevention) will be greatly diminished. Whether this will result in a net increase in burglary to schools is much less certain. For instance, the DSS survey anticipated the number of post-1946 school places need increase by only 3%.

The 1976 survey however also estimated that some new secondary school building stock would still have to be built to meet basic educational needs. Yet this does not necessarily mean that the mistakes of the past need be repeated. Interestingly, the DES survey discovered that older schools could be remodelled to standards and a new lease of lift comparable to those of a new school at an average of 40% of the cost of building a new school, and it may therefore be worth considering whether it would be possible to capitalise on their natural advantages so as to retain those aspects which contribute to their defensibility while improving their eductional provision.

Unfortunately, it seems uncertain whether the crime prevention advantages of old schools could, in fact, be retained. In this study, for instance, remodelled schools were no less likely to have burglaries than new schools: it may no longer be feasible to emulate previous designs and cater for modern eductional requirements. Additionally, since smallness is probably one of the most important reasons for the defensibility of SOC-type schools, the requirements of school organistion (which often imply larger rather than smaller schools) may take precedence over the need to prevent burglary.

Nevertheless, as architects come to realise the crime prevention implications of their work, so their expertise in designing less vulnerable buildings may very well increase. To some extent this seems to have happened in the design of public housing where problems associated with high-rise housing estates - including vandalism (Wilson, 1978) - have led to the reformulation of basic design principles; in no small part popularised by designers like Oscar Newman (Newman, 1972). There seems no reason to suppose that the same thing would not happen with school design, especially as architects turn their attention to the remodelling and conversion of existing schools. What is required however is development work to lay down guidelines for the design of less vulnerable schools. There are some encouraging developments in this direction (Zeisel, 1976; Greater London Council/ILEA, 1977) but more work is undoubtedly needed.

Important also in the creation of more defensible schools is the briefing process whereby architects gauge what local authorities are looking for in new or remodelled schools. This seems a crucial point of intervention for crime prevention purposes since errors and mistakes (for instance, inadequately secure windows) may be difficult to correct later. Although Bishop (1981) shows that the briefing process is not without difficulty, there is probably much to be gained from airing crime prevention issues at this stage.

Access and surveillance strategies

It was found that the highly vulnerable 'LMS' schools provided more opportunities for undetected or unobserved access to school premises than less vulnerable SOC schools. There would therefore seem to be grounds for recommending strategies to reduce access (target hardening) and improve surveillance at LMS schools. Unfortunately, wholesale target-hardening and surveillance measures may not be particularly feasible.

Target hardening

There seems, for instance, little prospect of making LMS-type schools invulnerable to burglary simply by reducing opportunities for access. First, the consequences would be both impractical and unacceptable. Turning schools into fortresses not only goes against popular feeling and educational wisdom but the required level of security would often be impossible to attain. For example, there are a vast number of accessible windows in LMS type' schools and their perimeters are lengthy. Supplying window grilles and fencing would be both expensive and unsightly in most schools. Additionally, care would be needed not to stimulate a reaction (cf. Newman, 1972); schools which were too obviously 'toughened' might simply constitute more of a challenge to the ingenuity of adolescent burglars.

A second difficulty with reducing access opportunities is to find ways of preventing access without at the same time preventing legitimate use. For

example, in order to obstruct burglars it may be necessary to install locks and restricting devices to school windows, but these may then prevent rooms from being adquately ventilated during the school day. Although windows could be secured when rooms are not in use, this relies on someone actually remembering to secure the windows. Nevertheless, it is sometimes possible to strike the right balance. Many of the older (less vulnerable) schools had heavy wooden-framed sash windows and caretakers had found it easy to install simple wooden blocks into the frames which both allowed ventilation and prevented access from outside. In addition, the size and weight *of* these windows makes them difficult to open from the outside. Unfortunately it does not seem as easy to secure windows in many of the more modern schools.

Target-hardening to reduce access can also come into conflict with means of escape in case of fire. Nearly half the caretakers thought that the fire-safety regulations which were applied at their schools came into conflict with the needs of security. The greatest problem seemed to be that of securing fire exit doors at night. Some caretakers felt that fire regulations prevented them from using chains and padlocks to make these doors secure at night, although fire regulations do not actually prevent the securing of doors except in <u>occupied</u> premises. Unfortunately, the schools whose caretakers reported problems with fire-regulations were also likely to ha/e more burglaries than other schools and this was so regardless of their design.

Obviously the consequences of serious fire in schools while they are occupied are of great concern and a comprehensive set of guidelines has evolved to minimise the risk (Department of Education and Science, 1975). When faced with a straight choice it is clearly preferable that the protection of life should take precedence over the protection of property. Even so, insufficient attention may often be given to co-ordinating the requirements of security with those of safety (Blanchard, 1973). In fact, since it is recognised that the planning of adequate escape routes in case of fire needs to be made with regard to the specific characteristics of each school (Department of Eduction and Science 1975), opportunities may exist for taking security requirements into account and it would therefore seem sensible for local authorities to take steps to incorporate security considerations, where possible, into the planning of means of escape.

Natural surveillance

There seems little point in altering the design of schools to improve natural surveillance if there are likely to be few people in a position to observe burglaries in progress (cf. Clarke and Mayhew, 1980). Since most burglaries occurred late at night, there are likely to be few people around to observe activity in school grounds. Additionally, the most vulnerble LMS schools were located in quiet residential areas, where, as a rule, few people frequent the streets.

Employee surveillance

In contrast, however, there may be greater scope for improving the surveil-lance afforded by 'employees' such as school caretakers. It seemed that the design of SOC schools allowed greater opportunities for resident caretakers to supervise the premises and to become aware of intruders. This is reinforced by the finding that, amongst non-SOC schools, a greater proportion of the ground floor of low burglary schools was visible from the caretakers' house. In the most vulnerable schools, however, employee

surveillance would probably need to be supplemented. The evidence suggests that the most vulnerable time for burglary is after the school has closed and the caretaker has gone off duty and caretakers cannot reasonably be expected to attend to security after this time. There are a number of ways in which caretaker surveillance can be enhanced. First, the lighting at LMS schools (which was worse than at SOC schools) might be improved to give caretakers (whether on duty or not) a better view of school premises. Second, the evidence of this study suggests that it may be just as effective for an intruder alarm system to be monitored by the caretaker than for an expensive system to be monitored by the police. Third, additional staff might be employed to provide increased supervision of schools at night and at weekends.

The costs of these supplements to employee surveillance, however, would need to be weighed against their potential benefit. For example, the running costs of additional lighting might be high and the benefits from fewer burglaries would need to be weighed against the savings which education authorities obtain from energy conservation policies. Similarly, the cost of additional staff (whether employed by the education authority or on contract from private security firms) might exceed the losses from all but the most serious burglaries; although reducing the risk of a serious incident of arson might make the cost of additional staff more worthwhile. Consideration would also need to be given to caretakers' responsibilities for security. This would inevitably involve discussion of caretakers' conditions of work and remunerations. It is understandable that both employers and employees would wish to see that changes in caretakers' responsibilities for security were to their separate advantage and protected their interests. Nevertheless, alterations to conditions of work might lead to lengthy and arduous negotiations.

Evening use

On analogy with residential burglary (see Jackson and Winchester, 1982) it might be supposed that the more a school was in occupation, particularly for evening activities, the less it would suffer from burglaries. This does not appear to be the case. All schools in the sample were in frequent use, and the one3 which were used most, were most often victimised. However, since most burglaries occurred late at night after schools had closed, it may be unwise to reduce the amount of evening use at schools, for it cannot be guaranteed that additional burglaries would not occur earlier if schools were unoccupied for longer periods.

Intruder alarms

The design of the research was such that it was impossible to gauge the effect of intruder alarms on the frequency of burglary. Nevertheless, it did not seem that alarms afforded any greater protection to valuable equipment since the average losses from burglary were as high as in schools which did not have an alarm. However, it was difficult to know whether this was because intruders ignored alarms or because sufficient valuable equipment was left outside those areas of schools which were protected by alarms. Opinion varied greatly between headteachers and caretakers as to the value of alarms and certain problems were raised. For instance, many of the alarms were of the 'silent delay' type where a message is automatically relayed to the police before the audible alarm is activated.(1)

1. This sytem is being replaced in many parts of the country with a relay system to an alarm-company's control room who then inform the police.

However, it was commonly felt that unless the police attained a response time within the delay period, the burglars would have gone before the police arrived. In sum, at the very least it would seem that intruder alarms ought not to be considered a panacea for school burglary. There would also seem grounds for a thorough review of the assumptions underlying the use of intruder alarms in schools with a view to evaluating their effectiveness.

In conclusion, it would seem that while the design of some school buildings provides ample opportunities for undetected access, there is little prospect for an 'across the board' policy of opportunity reduction. It may be impractical to make schools totally inaccessible and probably very little can be done to increase the surveillance of schools by members of the general public. There may be scope for supplementing the supervision of school premises afforded by caretakers and other education employees but this option needs to be considered in terms of the cost of maintaining it on a long-term basis.

School policies

There are a variety of competing views about the possibility of preventing school crime by changing the way schools are organised or run (Hope, 1980). However, few of these ideas have been implemented or evaluated while others have yet to prove their worth. This study was not intended to evaluate the efficacy of social and educational schemes for preventing school crime, and as such has little to add to the conclusions of the earlier review. There is, however, a suggestion from this study that some school factors might contribute to the vulnerability of a school to burglary. However, neither the composition of a school's intake nor its voluntary status (which might be taken to signify a school's relationship with its pupils and the surrounding community) seem particularly amenable to alteration without raising deepseated educational issues. Further, these variables only had an influence on burglary which was in addition to that of school design.

The possibility remains, nevertheless, that certain schools may be able to reduce their incidence of school crime through their own efforts; primarily through measures which involve pupils or the surrounding community, or which foster a better 'school ethos'. Unfortunately, there is little in the way of guidance as to how such ideas might be implemented in British schools or how effective they might be.

Conclusion

While the vulnerability of schools seems to be explained in large part by the opportunities they afford for burglary, there seems little scope for substantially altering the situation, at least in the short-term. Opportunities derive from the design character of schools, which is difficult to change. Unfortunately the most vulnerable schools will remain after the least vulnerable schools have closed. Nor is it clear whether the efforts of individual schools in fostering better relations with their pupils and the surrounding community holds any greater promise for reducing school burglary.

Nevertheless, although it may be impractical to ameliorate the underlying causes of school burglary (and this study has established that opportunities play a part as well as social and educational factors), it may be possible to achieve some reductions in burglary at individual schools. This would, however, require a strategic approach to the deployment of crime prevention resources. The final chapter of this report outlines the type of approach which might be taken.

6 CONCLUSION: AN APPROACH TO PREVENTION

An approach to the prevention of burglary in schools requires preventive measures to be deployed where they stand the greatest chance of success. This in turn means that prevention tactics need to be based on a thorough analysis of the nature and distribution of school burglary. For example, this study has shown that, in London, the frequency of burglary is highest in non-SOC schools, i.e. those which are not small, old and compact. In chapter 4 this group of schools was further divided into those which had four or fewer burglaries between 1977 and 1978 Clow burglary, non-SOC schools) and those which had five or more burglaries over the same period (high burglary, non-SOC schools). In fact, the high burglary, non-SOC schools (comprising a third of the sample) accounted for just over three quarters of the total number of burglaries suffered by the sample schools during the study period. It might be worthwhile, therefore, to concentrate preventive efforts in these 'high risk' schools.

Education authorities would first need to identify their 'high burglary', Non-SOC schools. It would probably be unnecessary, to replicate in their entirety the methods used in Chapter 3. Only a small number of criteria may be necessary to obtain an indication of schools in the high-risk category. It is suggested that these include: information on the frequency of burglary at individual school sites (over a sufficient period); the age of a school (whether it was built or substantially remodelled after c. 1945); and a measure of the 'size' of a school (which ought to include the dimensions of buildings and site as well as the number of pupils). It cannot be guaranteed that these variables would predict high risk schools equally well in other education authorities. Whether they did so would depend on the degree to which other areas and schools were similar to the ILEA. But some such method of assessing high risk schools should be followed. This study is intended simply as a 'worked example' which local education authorities might use as a guide to framing a policy for the prevention of burglary in their own

It was noted earlier that it is probably impracticable, and almost certainly unacceptable, to completely fortify an LMS (low, modern and sprawling) school against burglary, but this degree of security may not in fact be necessary. Caretakers were asked to identify places where burglars entered school buildings. Surprisingly, almost three-quarters of the 198 'entry points' (i.e windows, doors) identified by caretakers had been used more than once to gain access. Even allowing for the possibility that caretakers may have forgotten places where entries occurred only once, this still suggests that there are a number of entry points which are used frequently. Burglaries might therefore be reduced if the security of these entry points was improved. How this is done, will depend on the specific conditions pertaining to that entry point. If, for example, a frequent place of entry is an insecure door, then stronger locks or frames might be necessary. Other possibilities, if the entry point was out of the way, might be to improve the lighting or to install an intruder alarm.

It can, or course, be argued that 'stopping-up' current entry points merely encourages burglars to seek alternative places of entry. However, while this possibility cannot be denied, neither is there sufficient justification for thinking that offences will always be displaced with equal frequency (cf. Reppetto 1976; Gabor 1981). Much depends on the extent to which frequent points of entry are merely random choices of burglars or represent the best (or indeed the only) possible entry points. The solution to this problem is only likely to come from careful analysis and practical experimentation .

It was suggested that increased employee surveillance at vulnerable schools might be a useful strategy but the cost might be prohibitive. Nevertheless, if it is possible to anticipate the risk of burglary more precisely it may be that costly resources can be utilised more efficiently and this might make a selective use of employee surveillance a more realistic proposition.

Similarly, it was found that audio-visual equipment was stolen during burglaries almost to the exclusion of other kinds of property. Consequently, there is merit in taking steps to protect this kind of equipment. Greater effort could be put into making sure that valuable equipment is kept over night in secure places. Marking equipment so that it can be identified easily may also have pay-off; although since most schools seemed to do this already, the deterrent effect of property marking seems equivocal.

There is also scope for individual schools to consider the problems of vandalism and burglary in wider terms. Schools might indeed profit from conducting their own investigation into the reasons why they suffer from burglary and other property crimes, and to discuss what might be done. There would seem to be value in involving as wide a spectrum of people as possible including school staff, parents, people from the local community, and pupils (Casserly et al., 1980). Advice and assistance might also be obtained from local police crime prevention officers. Gladstone (1980) describes one attempt to encourage schools to look closely at the problems of burglary and vandalism which they face. Although there are likely to be practical difficulties in fostering this kind of activity, an approach which focuses on the specific problems of vandalism or burglary at individual schools might nevertheless act as a useful means for co-ordinating the expertise and interest of a wide variety of people.

The utility of a more focussed approach to burglary prevention derives, in large part, from the ability to predict where the problem is most severe, or where the greatest gains can be made. The discussion in this chapter has suggested where efforts might be concentrated but there are, unfortunately, limits to the ability to predict school burglary. For example, burglary does not occur sufficiently frequently, even in the most victimised school, for it to be possible to predict the times when incidents might occur. Thus, additional supervision of premises would have to be carried out throughout the year because there is no clear pattern of occurrence. The 'rarity' of incidents is also an obstacle in persuading volunteers to supervise school premises (Hope, 1980). Additionally, an examination of the value of equipment stolen during burglaries in individual schools reveals that most schools suffer both serious and trivial burglaries. This makes the task of prevention harder, for it has to be assumed that there is always the risk of a serious incident. Nevertheless, within these limits, there is much to be learnt from a careful analysis of the incidence and nature of burglary.

If preventive measures are to be based on a careful analysis of burglary problems in individual schools, there needs to be a capacity for undertaking such analysis. There are a number of ways in which this might be organised. Education officers might see this as their responsibility or, like the ILEA, might appoint specialist staff to investigate burglaries and give advice. Alternatively, schools might look to police crime prevention departments for assistance. It must be emphasised, however, that because the problem should be seen 'in the round', the preventive capability ought not to be the exclusive preserve of a particular specialism - whether that of security or of education - but ought to strive for a multi-disciplinary approach the problem.

In conclusion, it seems unlikely that the problem of school burglary can be eradicated, since it is impracticable to remove the conditions which give rise to it. There is very little which can be done to alter substantially the design of schools in the short-term and educational reforms may be of limited value in preventing burglary. Nevertheless, it is undoubtedly possible to 'manage' the problem of school burglary in a better way and probably possible to achieve significant reductions in burglary in certain cases. The ability to do this, however, depends upon a thorough understanding of the nature and incidence of burglary in individual schools. It is to be hoped that education authorities will see the value of adopting a 'situational' approach to the prevention of burglary in their schools.

APPENDIX methods of data collection and variables used in the study

Methods of data collection

A number of different methods were employed to construct the variables used In this study. The main ones were as follows:

I. Census data. Information from the 1971 Census was used to des-cribe the type of tenure and the male juvenile population of area surrounding the schools. Census data was adjusted to take into account ohanges occurring between 1971 and 1979 (the start of the study). The adjustment factors were estimates of rates of change in each London Borough derived for tenure from the National Dwelling and Housing Survey (Department of the Environment, 1978) and, for population, from estimates supplied by the Greater London Council. The area surrounding each sohool comprised those enumeration districts falling within a kilometre radius of each school. These variables were calculated using the Department of the Environment's computerised mapping system (LINMAP).

II. ILEA data. Balance of intake variables were taken from data collected by the ILEA to assist in the allocation of education priority allowances to schools and their staff (cf. Little & Mabey, 1972). The variables refer to characteristics of those pupils entering secondary schools in September 1975. These pupils would have been in the fourth year by the time of study. It is assumed by the ILEA that these variables can be taken to represent characteristics of the school population as a whole (cf. Rutter et al. 1979).

ill. Interviews with caretakers. Each of the 59 school sites had its own oaretaker and certain items of information were collected during interviews with them.

iv. Annotated site plans. A detailed survey of each school site was undertaken to gather Information on the physical characteristics of sohool sites and buildings. Scaled site plans of each school were provided by the ILEA and observational data was annotated onto these plans during the survey. Subsequently, quantitative data on physical characteristics was derived from these annotated plans.

Description of variables

The following chart lists the main variables used in this study, with a brief description of their construction (variables describing burglary characteristics are not included). The source of each variable is indicated as follows: census (census data); ILEA (ILEA data); caretaker (interviews with caretakers); and plan (annotated site plans).

Main Variables Used in the Analysis

Variable	Description	Source

School design continuum

1. Building area — plan area (m^2) of buildings (Ab) — plan

2. Number of buildings — number of separate buildings — plan

3. Concentration of buildings — proportion of total building area (Ab) taken up by the largest single building — plan

4. Compactness of buildings — defined as $2\dfrac{\sqrt{\text{)(Ab}}}{Pb}$ — plan

   where Pb is the total lengta of the building perimeter, (cf. Building Performance Research Unit, 1972).

5. Height (1) — height in storeys of the tallest building — plan

6. Height (2) — proportion of building area comprising single storey structures — plan

7. Glass — proportion of building face (pb) more than half taken up by glass — plan

8. Age — whether school was built after c, 1945 — plan

9. Remodal-led School — whether school had been added to after c.1945 — plan

10. Site area — plan area (m^2) of school site (As) — plan

11. Building Density — Ab/As — plan

12. Grassed site — proportion of site area (As) taken up by grass — plan

13. Landscaping — site contains appreciable quantities of trees, shrubs, flower-beds etc — plan

34

Variable	Description	Source
Organisational variables		
Split site	whether school comprises two separate sites	plan
Voluntary - aided	whether the school is voluntary-aided	ILEA
Number of pupils	school roll at January 1978	ILEA
Balance of intake		
Deprivation	% of pupils receiving free meals	ILEA
Disturbed children	% of pupils classified as disturbed on Rutter (B2) scale	ILEA
Large families	% of pupils in families of four or more children	ILEA
One - parent families	% pupils not living with both natural parents	ILEA
Backward children	% of pupils in group VR3 at 11+	ILEA
Proximity of pupils' homes	proportion of first year children in 1978/79 coming from primary schools situated within a mile radius of the school	special return by schools
Tenure of area		
Owner-occupation	households in owner-occupation per 1000 households present	Census
Council	households in council-owned accommodation per 1000 household present	Census
Rented	households in privately-rented accommodation per 100 households present	Census
Population: Density	total population of area	Census
Males 14-16	males aged 14-16 as a percentage of total population	Census
Males 17-20	**males aged** 17-20 as a percentage of total population	Census

Variable	Description	Source
Evening Use		
Provision	whether facilities provided by ILEA	Caretakers
Age range	whether for young people or adults	Caretakers
Multiple use	school used by more than one user per week	Caretakers
Frequency	number of nights school in use	Caretakers
Surrounding land use		
Houses	% of site perimeter (Ps) faced by houses	plan
Flats	% of Ps faced by flats	plan
Non-residential	% of Ps faced by non-residential property	plan
Natural barriers	% of Ps faced by 'natural barriers[1] (e.g. railway lines, steep hills)	plan
Open space	% of Ps faced by open space (e.g. parks, derelict sites etc.)	plan
Entertainment	whether site perimeter adjoins place of entertainment open during evening	plan
Service	whether site perimeter adjoins night-time service facilities (e.g. hospitals, filling-stations etc.)	plan
Main road	25% or more of site perimeter adjoining a 'classified' road	plan
Street lights	number of facing street-lights per 500 m. of site perimeter	plan
Access variables		
Height of perimeter boundary	% of Ps over six foot high	plan
Contiguity of boundary	% of Ps contiguous with other property or structures (i.e. not accessible by the public)	plan

36

Variable	Description	Source
Grills	% of Pb with windows protected by grills	plan
Doors	number of external doors per 500m of Pb.	plan

Surveillance variables

Visibility from outside	% of ground floor (Pb) visible from outside	plan
Visibility from caretaker's house	% of ground floor (Pb) visible from caretakers's residence	plan
Visibility through perimeter boundary	% of perimeter (Ps) which can be seen through or over by pedestrians outside	plan
Site visible from care-taker's house	% of ground floor (Pb) with exterior light fittings	plan
Light - stands	whether there were light stands or fixtures in grounds	plan

Caretaker variables

Fire regulations	whether caretaker thought that fire regulations came into conflict with security	caretaker
Lighting	whether caretaker left external lighting on for all or part of night	caretaker
Alarm	whether the school had an intruder alarm	caretaker

Cost of burglary

Losses per burglary incident	total replacement cost of equipment stolen during burglaries divided by the number of burglary incidents (1977-1978) at 1978 prices	burglary records

37

REFERENCES

ALLEN, V.L. and GREENBERGER, D.B. (1978). 'An aesthetic theory of vandalism'. Crime and Delinquency, 24, pp.309-321.

BALDWIN, J. and BOTTOMS, A.E. (1976). The Urban Criminal. London: Tavistock Publications.

BARKER, R.G. and GUMP, P.V. (1964). Big School, Small School. Stanford, California: Stanford University Press.

BENN, C. (1975). 'The size of schools'. New Society, 6 March, p.590.

BISHOP, J. (1981). 'Briefing for implementation: the missing link?' In Barrett, S. and Fudge, C. (Eds.), Policy and Action: essays on the implementation of public policy. London: Methuen.

BLANCHARD, J. (1973). 'Proposal for a model residential building security code'. In U.S. Department of Justice, Deterrence of Crime In and Around Residences. Washington D.C.: U.S. Government Printing Office.

BUILDING PERFORMANCE RESEARCH UNIT, (1972). Building Performance. London: Applied Science Publishers.

CASSERLY, M., BASS, S.A. and GARRETT, J.R. (1980). School Vandalism. Lexington, Mass.: Lexington Books.

CLARKE, R.V.G. (1980). 'Situational crime prevention: theory and practice.' British Journal of Criminology, 20, pp. 136-145.

CLARKE, R.V.G. (Ed.). (1980). Tackling Vandalism. Home Office Research Study No. 47. London: HMSO.

CLARKE, R.V.G. (1976). 'Cross-institutional designs and their place in evaluating penal treatments'. In Evaluation Research in Criminal Justice. Rome: United Nations Social Defence Research Institute, Publication No.11.

CLARKE, R.V.G. and MAYHEW, P. (Eds.). (1980). Designing Out Crime. London: HMSO.

CONKLIN, J. and BITTNER, E. (1973). 'Burglary in a Suburb'. Criminology, 11, pp.206-232.

DEPARTMENT OF EDUCATION AND SCIENCE/WELSH OFFICE (1977) A Study of School Building. Report by an Inter-Departmental group. London: HMSO.

DEPARTMENT OF EDUCATION AND SCIENCE. (1975) Fire and the Design of Schools. Building Bulletin No. 7- London: HMSO.

DEPARTMENT OF THE ENVIRONMENT (1978). National Dwelling and Housing Survey. London: HMSO.

ELLIOT, D.S. and AGETON, S.S. (1980). 'Reconciling race and class differences in self-reported and official estimates of delinquency'. American Sociological Review, 45, pp. 95-110.

38

ENGSTAD, P. and EVANS, J. (1980). 'Responsibility, competence and police effectiveness in crime control'. In Clarke, R.V.G. and Hough, J.M. (Eds,) The Effectiveness of Policing. Farnborough, England: Gower.

GABOR, T. (1981). 'The crime displacement hypothesis: an empirical examination.' Crime and Delinquency, July, pp. 390-404.

GILL, O. (1977). Luke Street. London: Macmillan.

GLADSTONE, F.J. (1980). 'Co-ordinating crime prevention efforts'. In Clarke, R.V.G. and Mayhew, P. (Eds.). Designing Out Crime. London: HMSO,

GLADSTONE, F.J. (1980). 'Vandalism amongst adolescent schoolboys'. In Clarke, R.V.G. (Ed.). Tackling Vandalism. Home Office Research Study No. 47. London: HMSO.

GREATER LONDON COUNCIL/INNER LONDON EDUCATION AUTHORITY (1977). 'Designing for security in educational buildings'. In Schools Design Guide. Department of Architecture and Civic Design.

GRIEW, E. (1974). The Theft Act, 1968. London: Sweet and Maxwell.

HARGREAVES, D.N., HESTER, S. and MELLOR, F.J. (1975). Deviance in Classrooms . London: Routledge and Kegan Paul.

HENRI, S. (1978). The Hidden Economy. Oxford: Robertson.

HOME OFFICE. (1980) Report of a Home Office Working Party on Fires Caused by Vandalism. London: Home Office.

HOME OFFICE. (1977). A Review of Criminal Justice Policy, 1976 London: HMSO.

HOPE, T.J. (1980). 'Four approaches to the prevention of property crime in schools'. Oxford Review of Education, 6, pp. 231-240.

HOUGH, J.M.$_t$ CLARKE, R.V.G. and MAYHEW, P. (1980). 'Introduction'. In Clarke, R.V.G. and Mayhew, P. (Eds.). Designing Out Crime. London: HMSO.

JACKSON, H. and WINCHESTER, S. (1982). 'Which houses are burgled and why?'. Home Office Research Bulletin, No.13. London: Home Office.

JACOBS, J. (1965). The Death and Life of Great American Cities. Harmondsworth, Middlesex: Penguin.

LITTLE, A. and MABEY, C. (1972). 'An index for the designation of educational priority areas'. In Schonfield, A. and Shaw, S. (Eds.) Social Indicators and Social Policy. London: Heinemann.

MAGUIRE, M. (1982). Burglary in a dwelling: the offence, the offender and the victim. London: Heinemann.

MAYHEW, P., CLARKE, R.V.G., STURMAN, A.S. and HOUGH, J.M. (1976). Crime as Opportunity. London: HMSO.

MOORE, C. and BROWN, J. (1981). Community versus Crime. London: Bedford Square Press.

MORRIS, P. and HEAL, K. (1981). Crime Control and the Police: a review of research. Home Office Research Study No. 67. London: HMSO.

NATIONAL INSTITUTE OF EDUCATION (1978). Violent Schools - Safe Schools: the Safe School Study Report to Congress, Volume 1. Washington, D C: US Department of Health, Education and Welfare.

NEWMAN, 0. (1973). Defensible Space. London: Architecture Press.

PABLANT, P. and BAXTER, J. (1975). 'Environmental correlates of school vandalism'. Journal of the American Institute of Planners, 41, pp.270-279.

PARKER, H.J. (1974). View From the Boys. Newton Abbot: David and Charles.

POPE, C.E. (1977). Crime Specific Analysis: the characteristics of burglary incidents. Analytic Report SD-AR-10,U.S. Department of Justice, Law Enforcement Assistance Administration, National Criminal Justice Information and Statistics Service. Washington: U.S. Department of Justice.

REPPETTO, T.A. (1976). 'Crime prevention and the displacement phenomenon'. Crime and Delinquency, April, pp.166-77.

REPPETTO, T.A. (1976). 'Crime prevention through environmental policy'. American Behavioural Scientist, 20, pp.275-288.

REPPETTO, T.A. (1974). Residential Crime. Cambridge, Mass.: Ballinger.

REYNOLDS, D. AND JONES, D. (1978). 'Education and the prevention of juvenile delinquency'. In TUTT, N. (Ed.) Alternative Strategies for Coping with Crime. Oxford: Blackwell.

RUTTER, M. , MAUGHAN, B., MORTIMORE, P. and OUSTON, J. (1979). Fifteen Thousand Hours: secondary schools and their effects on children. London: Open Books.

SCHAFFER, E.B. (1980). Community Policing. London: Croom Helm.

SEABORNE, M. and LOWE, R. (1977). The English School, Its Architecture and Organisation, Volume 2, 1870-1970. London: Routledge and Kegan Paul.

SEABORNE, M. and LOWE, R. (1977)- The English School, Its Architecture and Organisation, Volume 2, 1870-1970. London: Routledge and Kegan Paul.

STONE, J. and TAYLOR, F. (1977). Vandalism in Schools. London: The Save the Children Fund.

WILSON, S. (1978). 'Vandalism and 'defensible space' on London housing estates'. In Clarke, R.V.G. (Ed.). Tackling Vandalism Home Office Research Study No. 47- London: HMSO.

WALLER, I. and OKIHIRO, N. (1978). Burglary: the victim and the public. Toronto: University of Toronto Press.

ZEISEL, J. (1976). Stopping School Property Damage: design and administrative guidelines to reduce school vandalism. Arlington, Virginia: American Association of School Administration.