

FOR REFERENCE ONLY

FOR REFERENCE ONLY

40 0177130 X



ProQuest Number: 10183553

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10183553

Published by ProQuest LLC (2017). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code  
Microform Edition © ProQuest LLC.

ProQuest LLC.  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106 – 1346

E 91

cut:

MPhil / a1  
GAT

SUC  
Ref.

ASPECTS OF SECURITY IN DWELLINGS

by

Ronald James Gatepain, BSc, FASI, MBIM

A thesis submitted in partial fulfilment of the requirements  
of the Council for Academic Awards for the degree of  
Master of Philosophy

August 1991

Nottingham Polytechnic  
in collaboration with the  
Lincolnshire Police

## ABSTRACT

This thesis examines the security problems associated with the offence of burglary in dwellings. It further attempts to identify the factors which appear to affect the vulnerability of certain dwellings to the commission of this offence.

The research examines the physical attributes of dwellings, as well as some of the sociological and psychological aspects which appear to be related to this type of offence from previous studies. It seeks to clarify the features which are likely to affect the possibility of a dwelling being selected as a target by a burglar.

The thesis also examines the role of the building professions to determine to what extent they significantly contribute to the effects of deterring burglars from selecting dwellings as a target. The thesis subsequently determines the attitudes towards security of the institutions charged with the academic and professional education of those responsible for the design and construction of dwellings. The research also predicts the likely effects that mandatory codes and regulations specifying standards of security might have on burglary in dwellings.

The research endeavours to identify the security needs in house building and provide architects, house builders, police and insurance companies with specific data to enable a more informed decision to be made on the introduction of appropriate security measures in dwellings.

## ACKNOWLEDGEMENTS

I wish to express my sincere gratitude to all those people who have helped me in this study and in the compilation of this thesis.

I am particularly indebted to my supervisors Mr W G Carter MSc MCIQB MIAS, Mr A J Charlett BA MPhil MCIQB and Professor P L Clark DipArch PhD RIBA ChArch FCIOB Hon FASI for their help and suggestions.

Grateful thanks are also expressed to the Lincolnshire Police who collaborated with me in the research, in particular the Assistant Chief Constable Mr N F Leeds LL.B, Chief Superintendent T M Coats and Chief Inspector A C Wintin.

Thanks must also be given to all the building companies, educational establishments and individuals who gave me privileged information in order that this study could be completed.

R J G

Copyright R J Gatepain 1991

## ASPECTS OF SECURITY IN DWELLINGS

	Page
List of Tables	i
List of Figures	i
List of Plates	ii
Introduction and Development of the Research Hypotheses	iii
Definition of Terms used in this Thesis	v
Chapter 1 Statistics	1
1.1 Introduction	1
1.2 Frequency of Burglaries	2
1.3 Value of Property Stolen	8
1.4 The Risk of being Burgled	11
1.5 Access by Burglars	19
1.6 Summary	24
Chapter 2 The Burglar - Motives and Methods	27
2.1 Why Burglars Commit Crimes	27
2.2 How Burglars Operate	34
2.3 Type of Goods Stolen	38
2.4 Summary	39
Chapter 3 Preventing Crime	42
3.1 Introduction	42
3.2 Methods of Crime Prevention	44
3.3 Displacement	51
3.4 Cost of Burglaries	55
3.5 Problems of Crime Prevention	58
3.6 Summary	60

Chapter 4	Punishment and Psychological Aspects	64
4.1	Punishment as a Deterrent	64
4.2	Fear of Burglaries	68
4.3	Summary	72
Chapter 5	Neighbourhood Watch Schemes	75
5.1	Summary	81
Chapter 6	Planning and Design	83
6.1	Considerations	83
6.2	Designers and Planners Responsibility	87
6.3	Surveys Prior to Design	89
6.4	Design Factors	92
6.5	Multi-storey	108
6.6	Summary	110
Chapter 7	Codes and Regulations for Security	113
7.1	Introduction	113
7.2	Enforcing Codes in England and Wales	115
7.3	Adoption of Standards	118
7.4	Cost Factors	119
7.5	Secured by Design Initiative	121
7.6	Summary	123
Chapter 8	Surveys Conducted	125
8.1	Introduction	125
8.2	Survey of House Builders	127
8.3	Survey of Educational Establishments	136
8.4	Survey of Householders	141
Chapter 9	Conclusions and Recommendations	150
9.1	Conclusions	150

9.2	Recommendations	162
Appendices		164
Appendix A.	Burglaries for the years 1978, 1987 and 1989	165
Appendix B.	Physical Security	167
	Introduction	167
	Doors and Locks	168
	Windows	173
	Lighting	175
	Alarms	177
	Entry Phone Systems and Close Circuit Television	182
Appendix C.	Findings of Builders Survey on Questionnaire	183
Appendix D.	Questionnaire for Educational Institutions	185
Appendix E.	Questionnaire for Householders	187
Appendix F.	Computer Listing	191
Appendix G.	Assessment of Dwellings using Scale of Vulnerability	200
Bibliography		207
Articles Published		
	Safe as Houses?	211
	Security Regulations and Housebuilding	212

## LIST OF TABLES

Table	Page
1.1 Annual risk of being burgled	13
1.2 Classification of ACORN groups according to risk of crime	17
1.3 Methods of entry used in the Thames Valley Area in 1984	20
8.2.1 Number of units built on each site	129
8.3.1 Responses by Educational Institutions	138

## LIST OF FIGURES

Figure	Page
1.1 Burglaries in Dwellings	2
1.2 Percentage change of burglaries from previous year	3
1.3 Cumulative percentage change in burglaries in dwellings since 1977	4
1.4 Offences recorded by value of goods stolen	9
1.5 Offences of burglary recorded by police by value of property stolen in 1989	10
1.6 Burglaries per 100,000 population in 1987	15
1.7 Points of entry in burglaries	21
1.8 Methods used to gain entry	22
2.1 Persons found guilty of burglary by age	32
6.1 Well designed layout for development	96
6.2 Design of development likely to cause problems	97

## LIST OF PLATES

Plate	Page
6.1 Change of road surface marking boundary	93
6.2 Clustered arrangement of dwellings	94
6.3 Alleyway to rear of properties	98
6.4 Dwelling on easily accessible ground	99
6.5 Rear garden backing on to isolated road	100
6.6 Concealed doorways	101
6.7 Unprotected rear garden	102
6.8 Secure fence for rear garden	104
6.9 Entrance to isolated area	107

## INTRODUCTION AND DEVELOPMENT OF THE RESEARCH HYPOTHESES

A speech made by the Rt. Hon. Douglas Hurd MP at the National House Building Council Conference on 28th October 1986 when he was Secretary of State for the Home Office was the inspiration for this thesis. At that conference Mr Hurd stated that there was a need for house builders and the police to "get together" for the purpose of planning and designing houses and housing estates with a view to improving security (1).

This thesis identifies the causative factors related to burglaries being committed and ascertains what measures will contribute to the prevention of such offences in dwellings. It further identifies what causes people to commit the offence of burglary.

The features of a dwelling will be examined to determine if certain features will result in the dwelling being more likely to be selected as a target by a burglar. The research sets out to determine that the standard of physical security devices incorporated, the design and the siting of a dwelling have an effect on whether or not a dwelling is likely to be selected as a target for a burglary. It investigates what will deter the burglar from committing an offence and sets out to determine if it is possible to devise a means of allocating a numerical rating to a dwelling according to the standard of physical security devices incorporated, the design and the siting of a dwelling and whether this will give an indication as to the likelihood of a dwelling being selected as a target for a

burglary.

In order to ascertain if additional security measures should be introduced which would possibly reduce the incidences of burglaries in dwellings: the thesis examines the relationship between security and each of the following: the government, the police, the public, some of the building professions and the institutions charged with the education of those within the building industry.

Factors which affect the incidences of burglary have been advanced as being physical, social and psychological, and the thesis examines some of the relevant theories by reviewing the current literature on the subject.

The attitudes of some architects and builders of dwellings towards security was investigated, as was the knowledge of security by the professions involved with house building. This was obtained by the use of questionnaires and by interviews.

For clarification, the hypotheses to be tested was that it is possible to devise a means of allocating a numerical rating to a dwelling according to the standard of physical security devices incorporated, the design and the siting of a dwelling, and that this will give an indication as to the likelihood of a dwelling being selected as a target for a burglary.

## DEFINITIONS AND TERMS USED IN THIS THESIS

Security is defined as "state of being or feeling secure" (2), and as "the condition of being protected from or not exposed to danger" (3).

Burglary is defined according to the Theft Act 1968, Section 9 (4), as "Entering a building as a trespasser with the intention of committing theft, rape, grievous bodily harm or unlawful damage". If committed while in possession of a weapon or explosive the offence becomes aggravated burglary.

A Dwelling is a place of residence, an abode (5). It is taken throughout this thesis to be a house, bungalow, flat or maisonette.

Those who enter dwellings for the purpose of stealing are classified by the police (6) as:

i) **Professional.** People who make their living from burglary. The professional will select a target because the occupier of the dwelling is known to keep large amounts of cash on the premises, or to collect or have items of value which the burglar can convert into cash.

ii) **Opportunist.** People who see an opportunity which offers them a reasonable chance of stealing from a dwelling without what they consider too much difficulty or risk.

An offence is classified as "Cleared up" by the police if a person (or persons) is charged, summoned or cautioned for an offence (7).

#### Statement.

Reference is made throughout this thesis to the male gender. It does unless otherwise stated refer also to the female gender.

#### REFERENCES

1. Hurd D, Speech at National House Building Council Conference, London, Oct 28 1986
2. The Penquin English Dictionary, Penquin Books 1971 p635.
3. The Oxford Universal Dictionary, Oxford University Press, London 1970.
4. Theft Act 1968, Section 9.
5. Op. cit. Ref 2 p237.
6. Interview with Community Affairs Officer, Lincolnshire Police.
7. Criminal Statistics England and Wales, 1988, HMSO p28.

## CHAPTER 1

### 1. STATISTICS

#### 1.1. Introduction

Statistics relating to burglary in dwellings were consulted in order to assess the incidences of the offence and to identify trends. This is important when considering ways in which burglary in dwellings can be deterred. Details of burglaries for the years 1978, 1987 and 1989 are shown in Appendix A. These display the changes graphically in trends between these years and show the age and sex of burglars for these three years.

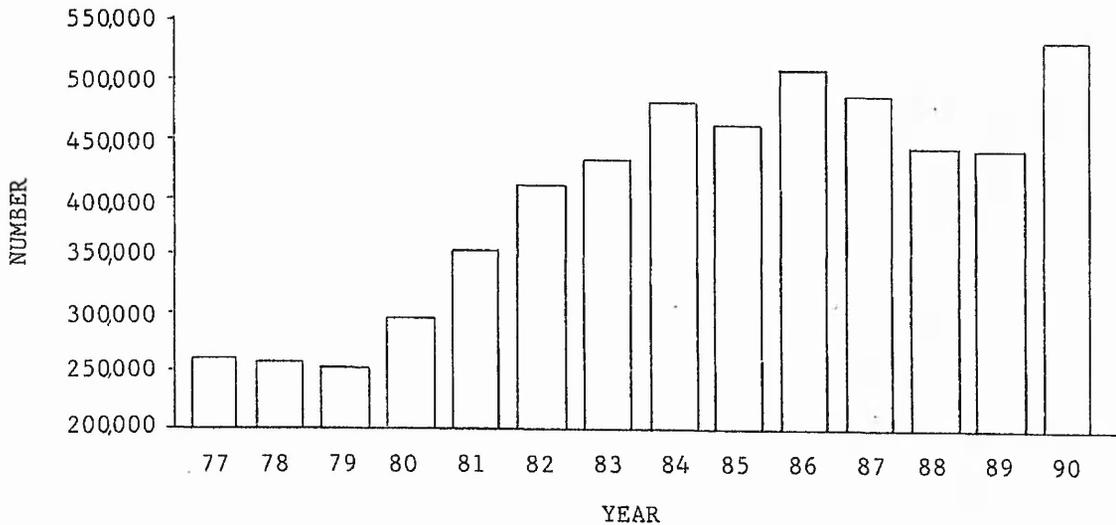
Care must be taken with the presentation and interpretation of statistics to ensure that a objective opinion is obtained. The author has, therefore, scrutinised and evaluated the statistics from several different sources in order to avoid bias.

## 1.2. Frequency of Burglaries

Burglaries of dwellings form approximately one eighth of all offences recorded by the police (1).

The number of burglaries in dwellings over the period from 1977 to 1990 is shown in Figure 1.1 (2).

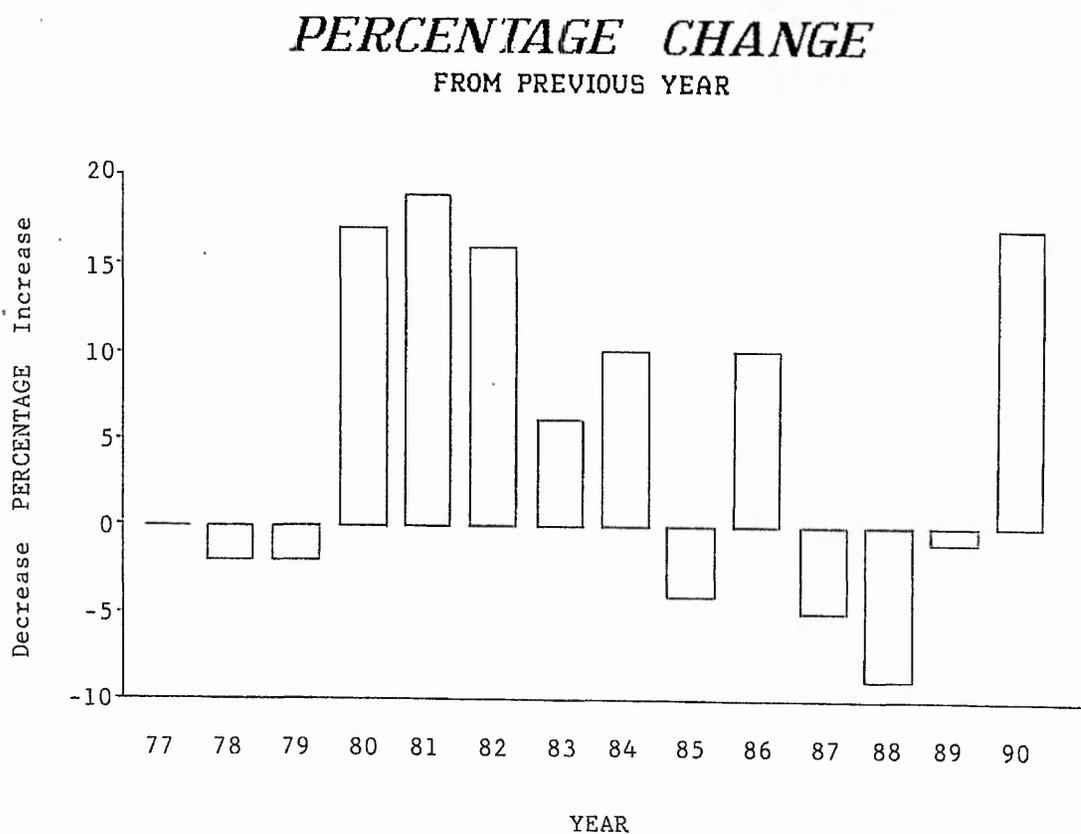
### *BURGLARIES IN DWELLINGS*



Source: Criminal Statistics England and Wales, HMSO

Figure 1.1 Burglaries in Dwellings

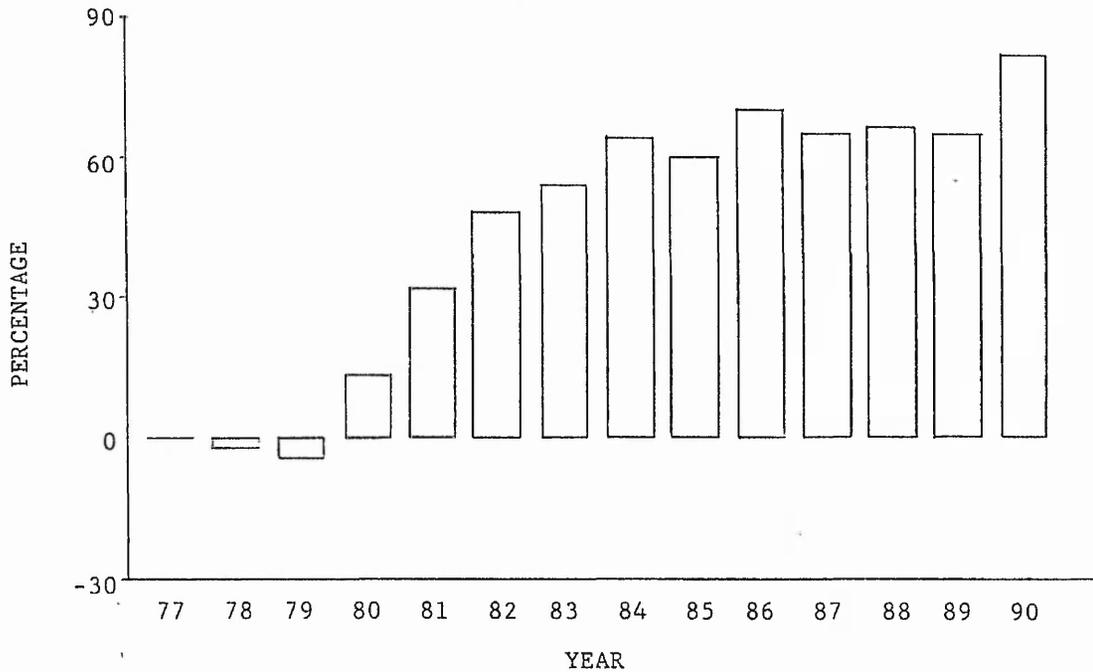
Figure 1.2 shows the percentage increase/decrease of burglaries for each year between 1977 and 1990. Figure 1.3 shows the cumulative increase/decrease over the period from 1977 to 1990.



Source: Criminal Statistics England and Wales, HMSO

Figure 1.2 Percentage change of burglaries from previous year

*CUMULATIVE PERCENTAGE CHANGE*  
SINCE 1977



Source: Criminal Statistics England and Wales, HMSO

Figure 1.3 Cumulative percentage change in burglaries in dwellings since 1977

It may be argued that the figures do not truly show an increase in the instances of burglaries but in the instances of people reporting them. However, there was a decrease in reported burglaries between 1986 and 1989, for which a number of reasons have been proposed (3).

1. The contribution made by Neighbourhood Watch Schemes. (These schemes will be discussed in detail in Chapter 5 ).
2. The reduction in the birth-rate in England and Wales in the 1970's, which has now brought a reduction in the number of juveniles, who are most likely to commit burglaries.
3. Longer custodial sentences imposed by the courts on those convicted of burglary in a dwelling.
4. Crime prevention campaigns sponsored by the Home Office and Local Police Forces (4).

Hugh and Mayhew (5) stated that: " the figures for burglaries is probably far in excess of those reported, many people not reporting due to their lack of confidence in the police being able to do any thing about it or to catch the thief and get their property back. They therefore feel it would be wasting their time to call the police. Others would not report the incident believing it to be too trivial, and that the police would not be interested in the incident".

Alternatively, high value goods ie. antiques or jewellery may have been bought with undeclared income, consequently the victim may not wish to bring his ownership of such items to anyone's attention.

This could explain the difference in the number of burglaries recorded by the police and those recorded by the British Crime Survey as discussed

below.

Evidence from the Government Household Survey 1980 suggested that 40% of all burglaries go un-reported (6).

The figures on burglaries obtained from the British Crime Survey (7) differs greatly from those obtained from the Police (8). The Police state that in 1987, 481,657 burglaries were committed whereas the British Crime Survey state that the figure was 1,180,000.

Another factor which could have had an effect on the burglaries reported was the procedure of screening crimes ( See Chapter 4.1).

Research carried out by Bottomley and Coleman (9) found that some policemen carried out the practice of "cuffing" crimes. This is the deliberate failing to record trivial crimes and thus avoid paperwork. This practice as well as reducing the number of reported burglaries also improves the success rate of a Police Force for solving crimes because trivial cases which show little chance of being "cleared up" are not recorded in police records.

If Police officers are found not to record a reported case they are subject to disciplinary action. However, Sparks (10) maintains that the non recording of reported cases frequently occurs and claimed that under half of the cases reported within the Metropolitan Police Area which had no loss or damage were not recorded.

The success in the apprehension and the conviction of burglars can also have an effect on the crime figures for an area. An interview with a police

officer concerning the crime of burglary in Lincoln stated: "In certain areas there are a number of habitual burglars who account for a large proportion of burglaries in that area, and although professional in one sense they are opportunist in another. Most of these burglars are known to the police and periodically they are caught and imprisoned. If, as can happen, a large proportion of these people are in prison at the same time, the crime rate will drop" (11).

### 1.3. Value of Property Stolen

The reports of the value of property stolen must be viewed with caution as there is more than likely a difference in the actual value of goods stolen and that which is claimed from the insurance companies. To investigate this the author interviewed ten people who had been burgled (12). Two people admitted to claiming an amount from the insurance company in excess of that which had actually been stolen. In one of these cases this was by claiming that items had been stolen when they in fact had not. In the other case it was by increasing the value of the property that was stolen.

The British Crime Survey 1984 (13) found that 40% of householders who were burgled received some insurance compensation and 6% admitted to receiving an amount in excess of its true value.

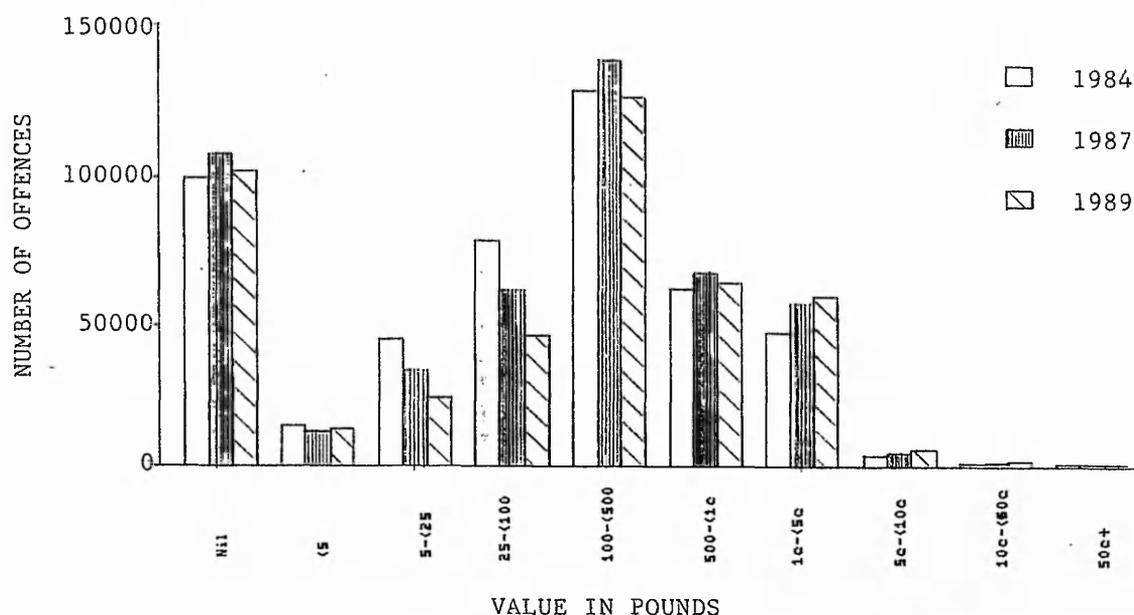
The amount of compensation paid out in 1985 by members of the Association of British Insurers under claims from household policies amounted to £219,400,000 (14). This rose in 1987 to £271,159,000 of which 4% was recovered by the police and returned to its owners. The value of property stolen through aggravated burglary in 1987 was £848,000, of this 10% was recovered (15). In 1989 the value of property stolen from burglaries was £270,614,000, for aggravated burglaries the value of property stolen was £1,243,000.

Figure 1.4 shows the number of offences of burglary recorded by the police (16) by the value of goods stolen for 1984, 1987 and 1989. The figures for 1989 give an average value of property stolen per burglary as £805. The average value of property stolen per aggravated burglary in 1989 was £1,693.

These figures show an increase in the value of property stolen even if inflation is taken into account.

Figure 1.5 shows the offences of burglary recorded by the police in 1989 by the value of property stolen. This indicates that 23% of burglaries net nothing of value or they are attempts to gain entry which do not succeed. 29% of burglaries in 1989 netted property to the value of between £100 and £500.

### OFFENCES RECORDED BY VALUE OF GOODS STOLEN

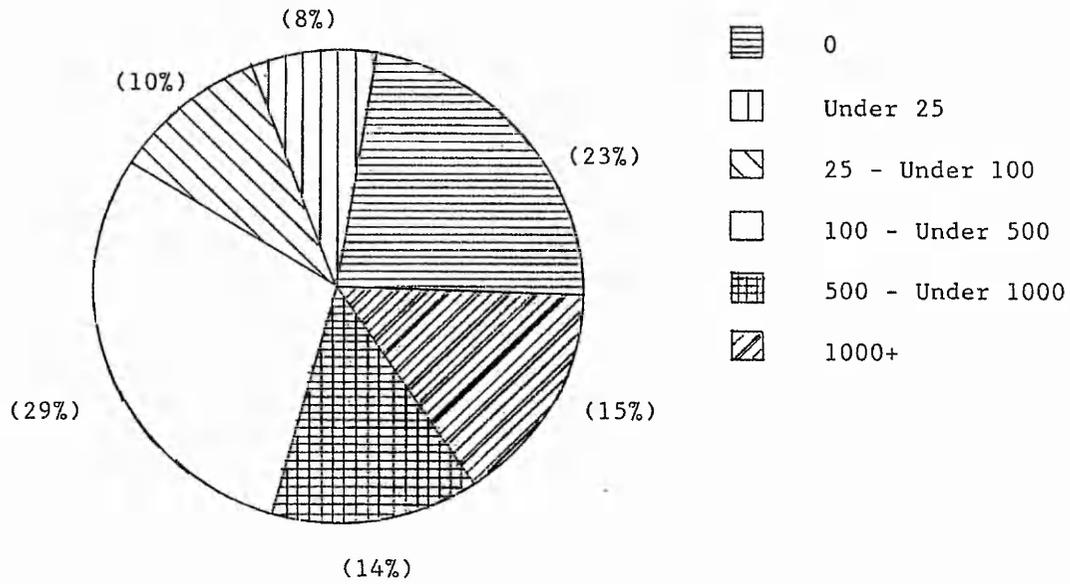


Source: Criminal Statistics England and Wales, HMSO

Figure 1.4 Offences recorded by value of goods stolen

# OFFENCES RECORDED BY POLICE

BY VALUE IN POUNDS OF PROPERTY STOLEN IN 1989



Source: Criminal Statistics England and Wales, HMSO

Figure 1.5 Offences of burglary recorded by police by value of property stolen in 1989

## **1.4. The Risk of being Burgled**

### **1.4.1. Introduction**

The British Crime Survey (17) estimated the average annual risk in 1982 of a householder being burgled in England and Wales as 1 in 40. For an inner city area it gave the risk as 1 in 12. If the Police statistics are used the risk is 1 in 70.

There are many factors which will influence the statistical probability of a property being selected as a target. These will include the standard of physical protection employed and the care taken to ensure that the property is not left vulnerable by leaving doors or windows open or unlocked. The length of time that a dwelling is left unoccupied can be an important factor if it is situated in an area offering a high risk of being burgled (See Chapter 1.4.2).

Other important factors are the siting of the property in relation to roads, footpaths and neighbouring properties. Properties either near to main roads and/or on corner plots are more vulnerable to attack, whilst those which are protected by perimeter fences preventing easy access to the rear of the property are less at risk. ( These factors are discussed further in Chapter 6).

### **1.4.2. Type of Dwellings most at Risk**

There appears to be a correlation between the number of burglaries and the

type of dwelling as illustrated in the Home Office survey (18). This survey found that although 15% of dwellings in the survey were detached properties they accounted for 50% of the burglaries. This indicates that a detached property has a greater risk of being burgled than a semi-detached or terraced house ( see Table 1.1). The study found that detached houses had a 1 in 31 chance of being burgled compared with a house in a long terrace which had a 1 in 540 chance. The study calculated the risk to each type of dwellings and the results are shown in Table 1.1. The figures are an average for the whole country and will vary according to the area and the factors discussed in Chapter 6. Detached houses situated in their own grounds in the country, distant from other houses and not easily visible from public areas were at most risk. Also highly at risk were houses situated on a busy through road in town with large private gardens which would prevent the house being easily seen from public areas. Baldwin and Bottoms (19) found the number of burglaries increased eight-fold from low to high rated property, as defined by the system of valuation used prior to the community charge and for water rate purposes. The means of assessing the risk by the type of dwelling is shown in Table 1.1.

Table 1.1 Annual Risk of being Burgled

Small detached house	1 in 20
Large detached house	1 in 42
Bungalow	1 in 68
Semi-detached house in short terrace	1 in 209
Long terraces	1 in 540

Source: Jackson and Winchester (20)

The reasons for the greater risk to detached dwellings could be due to:

1. Such properties offer the burglar a greater chance of gaining access into and out of the property without being detected due to the property being:

a. set in its own grounds. This will give the burglar visual protection in his approach and for gaining entry especially when trees are in foliage.

b. a greater distance from neighbouring properties there is less risk of neighbours or people passing by hearing any noise.

c. large, thus offering a greater choice of entry points.

2. The perception of the potential reward being greater in expensive houses or from potentially more affluent people who live there.

Another possibility for the greater risk is that people who live in detached dwellings are more likely to report any break in to the police (21); a fact which may have some affect on the statistics. In comparison, terrace houses are normally overlooked from the front and may have shared passageways to the rear, which would increase the chance of a burglar being seen by neighbours.

Research has been undertaken as to who is most at risk of being burgled, though many of the studies contradict each others findings. One study has found that the risk of being burgled will increase with the level of income (22). Another (23) found the opposite to be true. Another study (24) found no significant relationship between the wealth of occupants and being burgled. This disparity could be due to the fact that many high valued properties are within a short distance from the more disadvantaged areas (See Chapter 1.4.3 ) and that a burglar may select the property which has the most affluent looking occupants within that area.

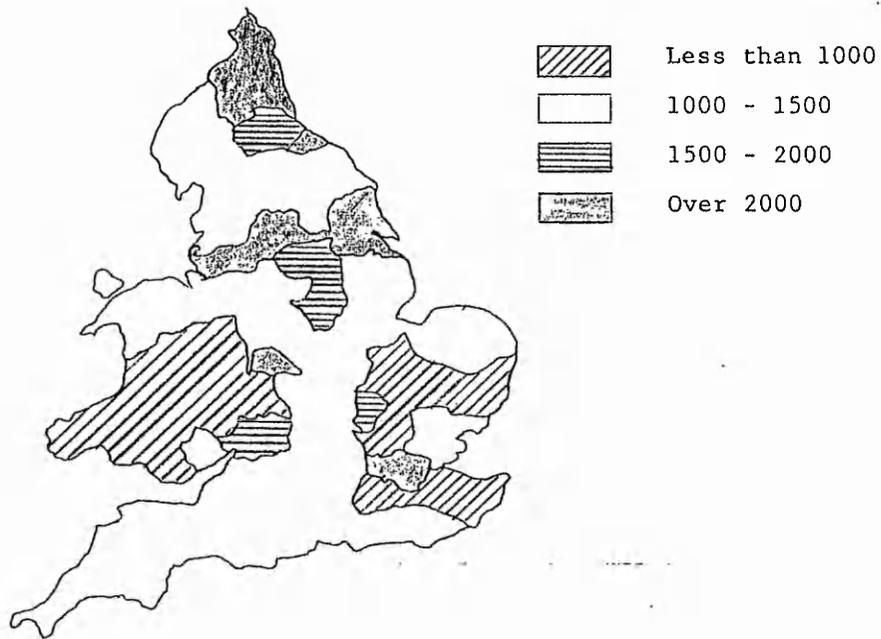
#### 1.4.3. Risk by Area

The average rate of burglaries recorded by the police in England and Wales varies between 10 and 15 offences per 1,000 dwellings (25). On average, a person will be burgled once every 30 to 40 years (26).

No even pattern can be found for burglary across the country, and some areas can expect a greater than average risk. Areas within one mile or less distance from each other can vary greatly in the risk of being burgled dependent on its access and situation, and the socio-economic group who live

there. Figure 1.6 shows burglaries per 100,000 population in England and Wales (27).

BURGLARIES PER 100,000 POPULATION IN 1987



Source: Which Magazine Nov 1989

Figure 1.6 Burglaries per 100,000 population in 1987

Hough and Mayhew (28) characterised areas as being low, medium or

high-risk and used the ACORN<sup>\*</sup> neighbourhood groups of classification formulated after the second British Crime Survey in 1984. Although this classification lacks clearly defined parameters it does give some indication of the risk to an area as shown in Table 1.2.

Footnote:

\* ACORN stands for 'A Classification of Residential Neighbourhoods'. It is a marketing segmentation system which enables consumers to be classified according to the type of residential area in which they live.

Table 1.2 Classification of ACORN groups according to risk of crime.

- Low risk areas:
- A. Agricultural areas
  - B. Modern family housing, higher incomes
  - C. Older housing of intermediate status
  - J. Affluent suburban housing
  - K. Better-off retirement areas
- Medium risk areas:
- D. Poor quality older terraced housing
  - E. Better-off council estates
  - F. Less well-off council estates
- High risk areas:
- G. Poorest council estates
  - H. Multi-racial areas
  - I. High status non-family areas

McClintock and Avison (29) found that the instances of burglary increased according to the size of the town or city; the greater the urbanisation the greater the rate of burglaries per population. Dwellings in large cities and towns are more prone to burglary than those in rural areas.

There are however exceptions and a study carried out in Gerrards Cross, a London stockbroker belt, found that its rate of burglary exceeded that of London. Other towns situated within an hours driving distance of London experienced the same high rate of burglaries (30). This could be due to the fact that professional burglars will travel extensively in order to carry out a burglary.

Another pattern is that people living on or near to council housing estates or poorer housing areas, especially rented areas in the centre of town (Disadvantaged housing<sup>\*\*</sup>), are at greater risk than those on the outskirts away from such housing. This was confirmed by research carried out in Sheffield (31 & 32) and also by studies in the USA (33).

Footnote:

\*\* Disadvantaged housing refers to that housing which lacks basic amenities ie. a bathroom and an indoor WC.

## 1.5. Access by Burglars

### 1.5.1. Means of Access

The means of access for a burglar will depend on the type of property and its location. For example, a survey carried out by the Home Office (33) found that in Kent 49% of burglars gained entry by a rear window and that in the Thames Valley Police area it was 48%. However, in Kent 7% gained entry by the front door, while in the Thames Valley area 20% gained entry this way. These statistics may reflect the type of properties in the area, although between 33 and 39% of doors which were used were in fact left insecure by the residents. The same survey found that 26.8% of windows and doors used for entry were left insecure.

The education of the public with regard to security is therefore, shown to be needed as in many cases of burglary doors and windows have been left open or unlocked.

The methods of entry from the survey of the Thames Valley (35) is shown in Table 1.3.

Table 1.3. Methods of Entry used in the Thames Valley Area in 1984

Source: Jackson and Winchester (36)

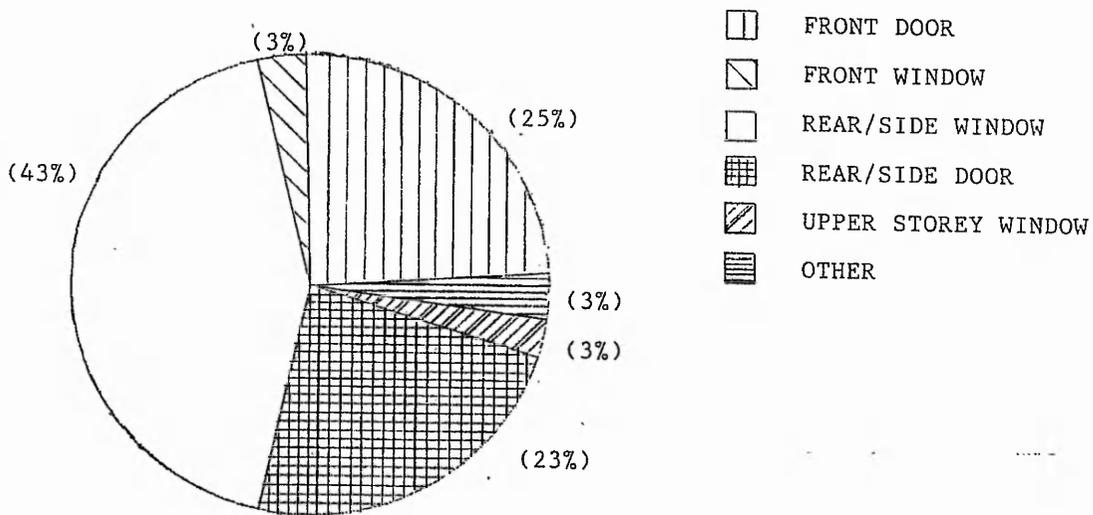
	Open/ insecure	Forced	Pane smashed	Other/ Not known	Total
Window	15.5%	21.8%	21.7%	2.1%	61.1%
Door	11.3%	10.2%	7.4%	3.9%	32.8%
Not known/ other	-	-	-	6.1%	6.1%
Total	26.8%	32.0%	29.1%	12.1%	100.0%

The statistics nationally for the points of entry for burglaries are illustrated in Figure 1.7 (37). This shows that 65% of properties burgled were entered from the rear or side of the building of which 43% were through a window. 28% of entries were effected at the front, of which 25% were through a door. It is important, therefore, that doors and windows should be of a nature which will either resist or deter potential burglars from effecting an entry. Appendix B details the types of doors which will resist or deter potential

burglars.

The methods used to gain entry are illustrated in Figure 1.8 (38).

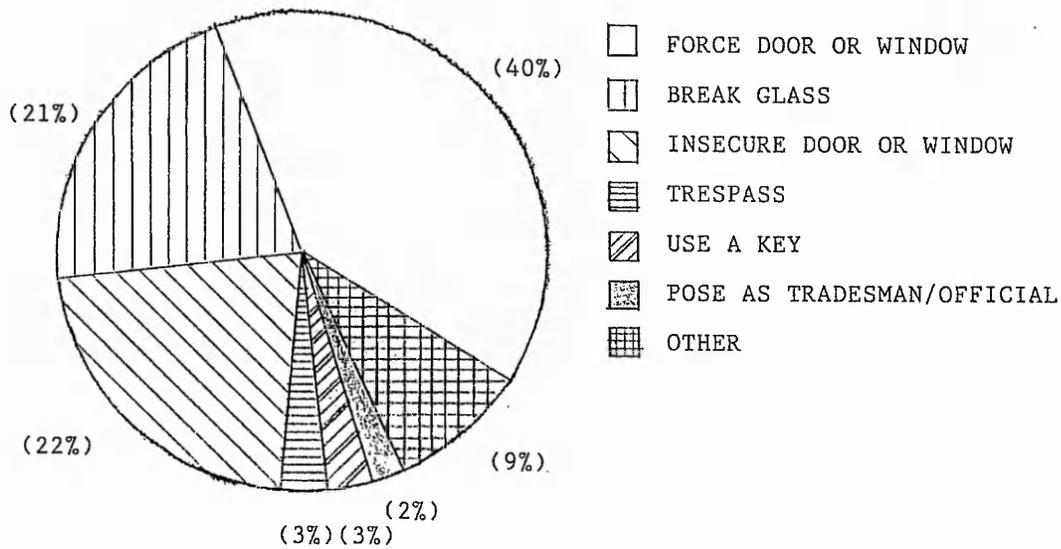
## POINTS OF ENTRY IN BURGLARIES



Source : Which Magazine Nov 1989

Figure 1.7 Points of entry in Burglaries

## METHODS USED TO GAIN ENTRY



Source : Which Magazine Nov 1989

Figure 1.8 Methods used to gain entry

Insecure doors and windows can be prised open or glass can be smashed or removed to allow the burglar to undo a lock or catch. Alternatively, bodily pressure can be exerted to open the door. On doors and windows that open

outwards the hinges can be attacked allowing the door or window to open from the hinge side.

Methods of breaching doors and windows are examined in Appendix B on Physical Security.

### 1.5.2. Timings of Burglaries

The proportion of day and night burglaries is related to the geographical and topographical location, the socio-economic group of people within the area, their life style and the hours that they work or are away from home (39).

Most burglaries are committed during the day between 0600 hours and 1800 hours. (40). This is because many dwellings are left unoccupied while the occupants are out at work.

Of the burglaries committed between 0600 hours and 1000 hours, 94% occur when a dwelling is unoccupied. 80% of burglaries occur when a dwelling is unoccupied (41). Of the 20% which occur when the property is occupied 78% of these occur during the night (2200 hours and 0700 hours) when the occupants are likely to be asleep.

The risk of burglary is greater if the property is left unoccupied for a number of days rather than for one or two hours (42).

## 1.6. Summary

The magnitude of the problem of burglaries in dwellings can be assessed by the fact that in 1987 property with the value of £271,159,000 was stolen, of which £10,440,000 was recovered.

The average rate of burglaries recorded by the police in 1987 was between 10 and 15 offences per 1000 dwellings. This means one offence for every 70 to 100 dwellings. Though other sources which look at the number of burglaries indicate that the true figure is 1 in 40 or even 1 in 20.

The risk of being burgled will depend on the part of the country and the type of area in which the dwelling is situated. It will also depend on the type of dwelling and its siting with respect to other properties. Detached dwellings are at the greatest risk particularly if the dwelling is on or near a council estate or near to a poorer housing area.

The majority of burglaries are committed during the day when the dwelling is unoccupied. 61% involve forcing a window or door or breaking glass, while 22% of burglars gain entry through an insecure window or door.

## REFERENCES

1. Criminal Statistics England and Wales, HMSO, 1987, 1989 & 1990.
2. Ibid.
3. Interview by author with Senior Police Officer from Lincolnshire Police.
4. Article in Daily Telegraph, Jones G, 4 Mar 1989.
5. Hugh M & Mayhew P, Taking Account of Crime: Key findings from the 1984 British Crime Survey. Home Office Research Study No85, London, HMSO,1985.
6. General Household Survey, HMSO, 1980.
7. Hugh M & Mayhew P, The British Crime Survey: First Report, Home Office Research Study No76, London, HMSO, 1983.
8. Op. cit. Ref 1.
9. Bottomley K & Coleman A, Understanding Crime Rates, Farnborough, Gower, 1981.
10. Sparks R F, Glenn H & Dodds D, Surveying Victims, London, Wiley, 1977.
11. Interview conducted by the author with a Police Officer.
12. Interviews conducted by author with householders.
13. Op. cit. Ref 7.
14. Guidance on how the Security of New Homes can be Improved, NHBC, 1986.
15. Ibid.
16. Op. cit. Ref 1.
17. Op. cit. Ref 7.
18. Jackson H M & Winchester S W, Residential Burglary, Home Office Research Study No74, HMSO, 1982.
19. Baldwin J & Bottoms A E, The Urban Criminal, Tavistock, London, 1976.
20. Op. cit. Ref 18.
21. Ibid.

22. Waller I & Okihro N, *Burglary: The Victim and the Public*, University of Toronto Press, Toronto, 1978.
23. Ennis P H, *Criminal Victimization in the United States*, Government Printing Office, Washington DC, 1967.
24. Op. cit. Ref 10.
25. Op. cit. Ref 1.
26. Vice-chairman of the Lincoln Crime Prevention Panel.
27. *Securing Your Home*, Article Which Magazine, November 1989.
28. Op. cit. Ref 5.
29. McClintock F H & Avison H N, *Crime in England and Wales*, Heinemann, London 1968.
30. Maguire M & Bennett T, *Burglary in a Dwelling*, Heinemann, London, 1982.
31. Op. cit. Ref 18.
32. Mawby R, *Policing the City*, Saxon-House, Farnborough, 1979.
33. Shaw C & McKay H, *Juvenile Delinquency and Urban Areas*, University of Chicago, Chicago, 1969.
34. Op. cit. Ref 18.
35. Ibid.
36. Ibid.
37. Op. cit. Ref 27.
38. Ibid.
39. Roudabush D E, *The Need for Security*, from *Handbook of Building Security Planning and Design*, Ed. Hopf P, McGraw Hill, 1979.
40. Pyle D, Article Daily Mail December 28 1989.
41. Op. cit. Ref 1.
42. Op. cit. Ref 39.

## CHAPTER 2

### 2. THE BURGLAR - MOTIVES AND METHODS

#### 2.1. Why Burglars Commit Crimes

Burglary is a crime against a place or property, not against a person. When deciding on a house to burgle the burglar generally looks at the house itself rather than the people who live in that house (1).

The act of burglary is committed because a certain need is felt and like all behaviour it is affected by a number of other factors. The opportunity to meet those needs must be there as must the perception of the opportunities. The burglar then needs the means to take advantage of such opportunities, and he must obtain satisfaction when the needs are met. He must take a decision about alternative ways of meeting his needs ie. whether to burgle or to get a job. He will also possibly consider the result of outside interference in him satisfying his needs through each course of action.

It is important to be able to understand why people commit crimes of certain types but not others, what makes them commit crimes, why they start and why they stop, and why they will select a certain target and leave others alone.

The majority of burglars come from a disadvantaged background (2) and can be found to come from areas of poorer housing areas. A strong correlation was found between rates of offences and the rates of offenders with regard to areas (3). It has been suggested that middle-class children commit as many

offences as working class children, though are less likely to be arrested and prosecuted (4) for they may have devised strategies to avoid apprehension. Though there is no evidence to suggest that burglary is not committed predominantly by the lower socio-economic class.

Whether a person becomes a burglar will depend on a number of factors (5):

1) the persons psychological make-up, temperament, intelligence and strength of personality will affect his inclination towards crime and whether he will follow others into crime.

2) his experiences, his moral attitudes, experience of crime and the law together with his attitude towards others and his sense of fairness will determine whether or not he is able to resist temptation.

3) the persons upbringing and the type of home he came from, ie. whether it was a broken home. The attitude of his parents towards the police and other peoples property and towards crime can have a marked effect on a young person.

4) the socio-economic group he belongs to, his education, the neighbourhood in which he was brought up and the sort of people he mixed with will all help to determine and influence whether he is likely to turn to crime.

Other factors are his personal circumstances, including whether or not he is married, a parent, whether he is employed, to what extent money is required or if he needs the excitement. Does the fact that he may be sent to prison frighten him, or is he part of a group which he needs to impress will also

have a bearing on whether or not he turns to crime.

Some crimes are committed out of a need to demonstrate a toughness in order to be accepted by their peers (6). This may be particularly true of adolescents. Though they can also be seeking a means of satisfying a craving for action and excitement.

The decision to turn to burglary can be influenced by the fact that burglary offers an offender a reasonable chance of success with a minimum amount of risk of being caught. The majority of burglars will seek out a dwelling which offers them the least amount of difficulty getting in (7 & 8). They will also try and avoid being seen or coming into contact with the residents or neighbours for to do so will increase the chances of them being caught or later identified.

Extensive research has been conducted on why burglars commit their crimes (9 & 10), and how they select their targets.

Bennett and Wright (11) interviewed 128 convicted burglars and found that 46% committed the offence due to needing the money. 46% did it at the bidding of a friend.

22% of those who committed the offence did not plan it (12). This does not mean that 22% of burglaries are opportunist, for even those who had made a decision to commit a burglary did the selection of the actual dwelling on the grounds of what would give them the best opportunity.

The number who carried out the crime because they were bored, depressed

or upset was 14% (13). This group wanted to take the risk, or did not care if they got caught. This makes it more difficult to deter as the normal reasoning by a burglar in selecting a dwelling to burgle is missing. It is also difficult to deter the group of 10% who stated that alcohol was a reason, being intoxicated at the time of the burglary.

For 20% burglary was a part of their life and they had no particular reason for committing the burglary (14).

Some burglars are motivated by the challenge of the work, though no statistics are available for this group.

One of the findings of Bennett and Wright (15 ) was that 70% of the burglars were unemployed at the time of their offence. Of this number 88% put this fact as a factor for them committing the crime. Those who committed the crime because they were in debt amounted to 44%.

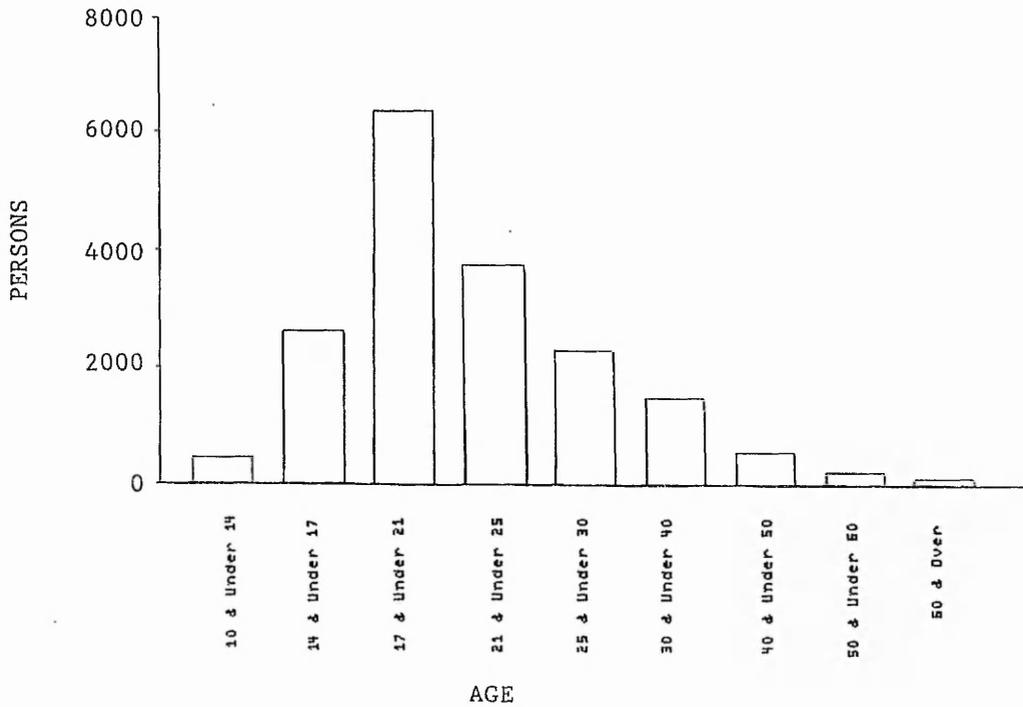
Bennett and Wright (16) found that 51% said that if they knew they would get a tough sentence then they would "think twice" before committing the offence. Though 70% stated that they did not think about what would happen to them if they were caught.

For the burglar fraternity burglary is looked upon as an acceptable way of meeting their needs. Some burglars the author spoke with thought that their crimes were very minor in comparison to those committed by the "respected members of society" in their business dealings (The methods of conducting these interviews is discussed in Chapter 8).

A convicted person may find it more difficult to turn away from burglary as conviction may make it more difficult for him to obtain a job and the ties with his family are weakened as he associates more with other criminal elements (17). Though it appears from the statistics on the age group of burglars as shown in Figure 2.1 that many do turn away from crime as they get older. The author could find no research on the reasons for this finding.

# PERSONS FOUND GUILTY OF BURGLARY

IN DWELLINGS BY AGE IN 1989



Source: Criminal Statistics England and Wales 1978, HMSO

Figure 2.1 Persons found guilty of burglary by age

Burglary has a high rate of re-offenders. The Criminal Statistics (18) indicate that 89% of those over 21 years of age who were convicted of burglary had committed the offence before. There is also a greater chance of those convicted of burglary being convicted again in the future (19).

Juveniles (persons 17 years of age and under) make up a large proportion of those convicted of burglary (20). Juveniles commit 40% of all burglaries, though over half are first offenders and the majority do not re-offend. Juveniles are, however, less likely to offend on their own and in some areas as much as 50% of detected case involving juveniles produced more than one offender.

Research has been undertaken to determine the patterns of personality characteristics of a number of different types of offenders (21) though no distinct pattern was found in burglars.

Obtaining information on burglars is difficult not because burglars will not talk about their activities or themselves, but because information is only available on burglars who have been caught. Approximately 80% of burglars are not caught, therefore it is not possible, under normal circumstances, to interview those who could be classed as being proficient at this type of crime.

## 2.2. How Burglars Operate

Many burglaries are committed by a member of the family or a close friend. Scarr found that it was quite common for young drug users to steal from increasingly socially close individuals as their needs increased (22).

Some police officers (23) believe that many burglaries are committed by the victims in order to conceal that they have broken into the gas or electricity meter; such offences being known by the police as 'do-it-yourself', 'own goals' or 'home industry'. It is possible that a number of such burglaries are committed in order to collect insurance money, though no statistics are available on this.

Bennett suggested that the initial decision to commit an offence is either socially or psychologically determined and not situationally (24), it is the final decision which is governed by the situation with regard to a particular target.

A potential burglar will assess the situation as to the degree of effort required and the likely return for that effort. He may also look at the possibility of being caught and what would be the consequences of this, though many do not consider the fact that they may be caught (25).

The majority of offenders interviewed by Bennett reported that they had decided to commit a burglary before they had actually selected a target. The decision to offend was dependent on a number of factors, though the main ones were:

1. it depended on the socio-economic background of the person which determined if the person would commit a crime; and
2. on the physical security installed. Good physical security measures installed in a dwelling deterred the majority of burglars interviewed from selecting that dwelling.

Although the majority of burglaries may be opportunist in some respects, an unqualifiable amount of predetermination must be pertinent, for the statistics show (See Chapter 1) that the majority of burglars get into a dwelling through a back window which is out of sight from people passing by. It must, therefore, be concluded that if the burglar cannot see the window at the back to know if it is secure or not then he must have gone round to the back in order to see if the property is suitable for an entry, which is therefore not strictly opportunistic.

Maguire (26) suggested that the burglar made the initial choice in his decision to burgle by selecting the area, this was borne out by the research done by Jackson and Winchester (27). Once the area was selected the burglar would select a dwelling in that area.

The method of selecting would then depend on whether the property was occupied, which would automatically rule out a property to the majority of burglars. They would also look for an unobserved approach and for cover from view while on the premises. These can be gained from viewing the premises while casually walking by. If the property offers concealment and ease of access the occupancy can then be ascertained by knocking on the door.

If a dwelling is obscured from the view of the neighbours and the public, then merely fitting good locks will not present too much of a deterrent, for the burglar will be able to devote time and effort in breaching that security without the risk of being seen. However, if good means of security are employed the burglar may decide to look for a softer target.

The research by Maguire (28), Jackson and Winchester (29), and the authors research (30) confirm, however, that factors of the access to a dwelling and the risk of being seen appear to be more important than the level of physical security employed.

Where opportunities are actually sought by burglars the standard of security must be of a much higher standard than would be required for passively presented opportunities. Escape routes are normally looked for in case of trouble, corner houses offer good means of escape as does a property with a footpath or alleyway to the rear or side.

The easiest opportunities for burglars in a dwelling are on weekdays during school term times, between 1030 hours and 1200 hours and then again between 1330 hours to 1500 hours. Many households have one partner at work so if the children are at school, the other partner may go out during these periods for shopping or to visit friends.

Professional burglars may selected high value targets and travel to that target, with the intention of stealing items like jewellery and antiques. The main area for this is around London (31).

Repetto (32) in the USA agreed with Waller and Okihiro (33) that the rates of burglary for the inner-city were greater than the suburban rate. However, there were concentrated attacks on some particularly affluent parts of the city outskirts. The reason for this is due to the disadvantaged housing frequently found in the inner-city. However, when large council estates are located on the outskirts instances of burglary will increase in that area.

Repetto found that age was an important factor in determining where the burglar operated. Juveniles tended to operate around their own neighbourhood without any planning. 18 to 25 year olds would move out of their own neighbourhood to operate for at least half of their jobs. The over 25 year old was more concerned with the affluent neighbourhood and would therefore travel in order to burgle in that type of area.

This is borne out by the situation in Gerrards Cross near London where police believe that the majority of burglaries in that area are committed by people from outside (34).

Research carried out in England (35) found that although adult burglars would travel further than juveniles there was not such a clear cut distinction as there was in the USA. The research also determined that the majority of detected burglaries took place within two miles of the offender's home. In a study carried out in Sheffield this amounted to 70% (36).

### 2.3. Type of Goods Stolen

The type of goods taken will depend on the motive for the burglary and also what the burglar feels he is able to convert to cash. Some burglars will only take cash, or they will select items of a particular type ie. television, videos. Others select cigarettes and drink and leave other valuable property. The reason that items of value are left behind is due to the difficulty that many amateur burglars would have in disposing of these items. Some will sell their haul at very low prices in public houses. Others will work through a 'fence' who buys the goods from a burglar. In this case the type of goods stolen will depend on the type of goods that the 'fence' can dispose of.

Those who steal in order to buy drugs can in some cases dispose of the stolen goods through the person from whom they buy their drugs. One of the main reasons given for the needs of burglars as far back as 1972 in the USA was the need for money to obtain drugs.

For bulkier goods like television and videos a method of transporting the goods away is required. Also if a car is used consideration must be given to where it can be parked. Most burglars will avoid cul-de-sacs where there presence is more difficult to explain, a verification of Newman's Defensible Space Theory (37). It is better to park in a drive way which is hidden from the road, especially if the road is a main through road where strange cars are not going to attract any attention.

#### 2.4. Summary

The majority of burglars come from disadvantaged backgrounds where their upbringing is a major factor in determining whether they turn to crime.

The reason for them committing burglaries will depend on their psychological make up and their personal circumstances, though many attribute committing burglaries to them being out of work.

In selecting a target the burglar will first select the area, the dwelling is then chosen in that area. The choice of the property will depend on occupancy, the degree of cover provided to the burglar, and the amount of physical security installed. The risks and the possible rewards will then be assessed.

The age of the burglar will influence the area and the type of dwelling chosen and the type of goods stolen. The type of goods stolen will depend on the motives and the prospects that the burglar has of converting the stolen property to cash.

## REFERENCE

1. Bennett T & Wright R, Burglars on Burglary, Gower Publishing, 1984.
2. Baldwin J & Bottoms A, The Urban Criminal, Tavistock, London, 1976.
3. Ibid.
4. Hurd R & Sparks R, Key Issues in Criminology, Weidenfeld & Nicolson, London, 1970.
5. Cornish D & Clarke R, Situational Prevention, Displacement of Crime and Rational Choice Theory. Situational Crime Prevention from Theory into Practice, HMSO, London, 1986.
6. Gladstone F J, Co-ordinating Crime Prevention Efforts, Home Office Research Study No 62, London, HMSO, 1980.
7. Authors interviews with burglars.
8. Op. cit. Ref 1.
9. Ibid.
10. Kirkholt Burglary Prevention Project, Rochdale, Crime Prevention Unit Paper 13, Home Office, 1988.
11. Op. cit. Ref 1.
12. Ibid.
13. Ibid.
14. Ibid.
15. Ibid.
16. Ibid.
17. Interviews conducted by the author with Convicted Burglars.
18. Criminal Statistics England and Wales 1987, HMSO.
19. Phillpotts G J O & Lancuucki L B, Previous Convictions, Sentence and Reconviction, Home Office Research Study No 53, London, HMSO, 1979.

20. Roudabush D E, The Need for Security from Hand book of Building Security Ed. Hopf P, McGraw-Hill, 1979.
21. Kolodney S, A Study of the Characteristics and Experiences of California Prisoners, San Jose, Calif. Public Systems Inc. 1970.
22. Scarr H A, Patterns of Burglary, US Department of Justice, 1972.
23. Op. cit. Ref 10.
24. Bennett T, Situational Crime Control and Rational Choice: a critique. Situational Crime Prevention from Theory into Practice, HMSO, London, 1986.
25. Op. cit. Ref 1.
26. Maguire E M W, Burglary as Opportunity, Home Office Research Bulletin No 10, HMSO, 1980.
27. Jackson H M & Winchester S W, Residential Burglary, Home Office Research Study No 74, HMSO, 1982.
28. Op. cit. Ref 26.
29. Op. cit. Ref 27.
30. Op. cit. Ref 17.
31. Maguire M & Bennett T, Burglary in a Dwelling, Heineman, London, 1982.
32. Reppetto T A, Residential Crime, Cambridge Mass. Bellinger, 1974.
33. Waller I & Okihiro N, Burglary: The Victim and the Public, Toronto, University of Toronto Press, 1978.
34. Op. cit. Ref 31.
35. Op. cit. Ref 2.
36. Op. cit. Ref 26.
37. Newman O, Defensible Space, People and Design in the Violent City, London, Architectural Press, 1972.

## CHAPTER 3

### 3. CRIME PREVENTION

#### 3.1. Introduction

It has been postulated that crime prevention strategies should be based on the elimination of the causes and the conditions which give rise to or encourage crime (1). Social inequality, racial and national discrimination, unemployment, and low standards of living contribute to crime (2). Certainly, economic and social conditions are important when considering crime prevention and control, for if economic growth is poorly planned or unplanned, this can result in social imbalances and an increase in crimes including burglary. The cost of crime to society can, therefore, be seen as either a hindrance to development or as a consequence of development.

Over the last twelve years there has been a greater interest in crime prevention. Social workers, probation officers and voluntary workers as well as the police are becoming more involved, and criminologists and psychologists are developing new ideas relevant to the prevention of crime.

No matter how hard a person tries it is not always possible for him to protect his property from crime if the basic design is at fault. It could be argued that it is the duty of the government to ensure that all those who are responsible for that design do whatever is required to ensure that crime prevention issues are considered at the design stage. The public should not have to suffer due to the consequences of poor design caused by the mistakes or lack of knowledge of security by designers. It is action by

Government which should try to remove the opportunity for crime (See Chapter 7).

### 3.2. Methods of Crime Prevention

According to Scarr (3) the prevention of burglaries depends on five factors:

1) the background and demographic information. This includes the type of dwelling, neighbouring buildings, the degree of lighting, type of land or sites surrounding the dwelling and the amount of people and vehicles passing by the dwelling.

2) the individual's experiences. This will depend on whether the individual has been a victim of a burglary or another crime, and how the police and the courts treated the victim.

3) psychological orientations. This is determined by whether the individual perceives burglary as a problem, and the fear that they will become a victim. Also, if they feel that they can do something about reducing the likelihood of them becoming a victim.

4) the response to the crime problem as perceived or experienced by the individuals. This may include target hardening or the introduction of preventative measures such as leaving lights on when they go out at night and joining a Neighbourhood Watch Scheme. (Neighbourhood Watch Schemes are discussed in Chapter 5).

5) physical characteristics of the dwellings site. This will depend on whether it has fences which will prevent easy access and egress to the site and whether there are bushes which will prevent the burglar from being observed while breaking into the dwelling.

Crime prevention can, therefore, be approached in five ways:

1) **Target Hardening.** This makes it more difficult to break-in to a dwelling by physically increasing the amount or standard of physical methods of keeping burglars out and by dissuading them from tackling a potential target for fear of being caught.

2) **Educating the public to become more security conscious.** This can be done by the crime prevention campaigns the purpose of which are to:

a. reduce the situations where temptation may be placed in the way of those who may be motivated to commit a burglary.

b. discourage those who are motivated to commit a burglary from actually carrying out their decision by increasing the risk of being apprehended.

Riley and Mayhew (4) questioned the effectiveness of crime prevention publicity. Their research raised doubts that the publicity would affect the public, for although the publicity would improve peoples knowledge it did little to change their attitudes or behaviour. The reason for this could be that:

i) people have become set in their ways and unless something occurs which directly affects them they tend to believe it will not happen to them.

ii) they may simply forget to carry out the measures recommended.

iii) they may put off for another day, when either the time or the money can be found in order to take some positive action.

Insurance companies can and do a great deal in educating the public. Reductions in premiums offered by a number of companies for certain standards of security, ie. 10% discount off content insurance premiums for an approved alarm system and a 2.5% reduction for being a member of the Neighbourhood Watch Scheme can only be beneficial to society in general. No-claims bonuses being offered by some companies are an incentive to the householder to prevent burglaries to their dwelling.

People who have an interest in the prevention of crime form local Crime Prevention Panels. Located throughout the country such Panels are involved in devising and implementing ways that will result in the reduction of crime within their area. Panels also distribute leaflets and members attend public events where crime prevention advice can be obtained.

3) Instil a sense of moral and social responsibility in the public. This is perhaps the most difficult for it means re-educating the public.

In Ontario, Canada the police used community committees and peer pressure to reduce vandalism in schools. The municipal government gave local schools a budget for films, though the cost of all repairs for vandalism came out of this budget. Consequently the more vandalism the fewer films for the school. This approach resulted in a drop in school vandalism of 40% in the first

year.

At the end of 1983, the city of Marseille in France and the National Council for Crime Prevention decided to conduct a social integration campaign in Bellevue, a particularly problem-ridden housing estate of 850 dwellings (5).

By early 1984, the conditions of security and amenities had been improved, although the experiment did not stop there, for better cultural and leisure facilities were also opened.

In 1981, 130 juveniles from that estate were imprisoned. In 1984, 32 cases of detention were recorded. In 1986 no serious case of criminal behaviour was reported.

Marseille also does much in providing places for young people under their community employment scheme and has set up a special unit for generating job opportunities for youth. During the summer holidays Marselles set up a scheme which provides recreational opportunities for youth. This works on the premise that idleness contributes towards crime and disorderly behaviour.

The indications are that this policy is reducing the amount of crime committed by young offenders (6).

Such schemes are being operated in Britain. Lincolnshire Police have a number in operation in the summer holidays which their Community Affairs Officer reported as being beneficial to the reduction of juvenile crime (7).

Marseille has a "service to the community" scheme which is designed to

prevent young offenders from re-offending. For some youngsters it is the first experience that they have had of working and a number, it is claimed, would work enthusiastically (8).

4. **Prevention by Legislation.** These are the legal sanctions which are imposed in order to deter offenders. (See Chapter 4.1).

5. **Intervention.** This identifies the individuals who are most likely to commit a crime and intervenes in their lives in order to try and prevent them from committing an offence.

A number of Police forces in England set up special burglary squads in the 1970's in order to watch certain people who were known burglars. This was a considerable success in certain areas, particularly in Surrey which claimed an improvement in the number of arrests and in the reduction in high value burglaries (9) where the value of goods stolen was in excess of £1000.

### 3.2.1. Situational Crime Prevention

Situational crime prevention involves the management, design or manipulation of the environment in which crime occurs in a systematic and a permanent way in order to reduce opportunity (10).

It is designed to operate at three levels:

1. Individual
2. Community

### 3. Physical environment

#### 1. Individual

This aims to encourage the individual to make their home more secure by the education of the public that insecure homes are potential targets. They should, therefore, ensure that their home is locked and that good locks are fitted.

Attempts to educate the public have been mounted by the Police and the Home Office through publicity on television and by the press and leaflet distribution campaigns.

Neighbourhood Watch Schemes have also done much in the education of people with regard to security. (See Chapter 5). This is done by the police beat officer and the crime prevention officer who will visit any home by invitation to conduct a free survey to advise on dwellings security.

Improved security will either deter a person from attempting to burgle a dwelling, or it will increase the amount of time, effort or noise required to overcome the security. Though it could be argued that it is the lax security which actually invites a burglary.

Where the purpose of hardware (ie. locks and bolts) is to obstruct and deter the burglar from attempting a burglary, the purpose of an alarm is to increase the perception of the burglar that he may get caught.

## 2. Community

The main community orientated crime prevention method is that of the Neighbourhood Watch scheme. This is discussed fully in Chapter 5.

## 3. Physical Environment

This looks at crime prevention through the environmental design including the layout and positioning for buildings, roads, lighting. It divides the surrounding area into spaces which can be classified as defensible. These are based on the ideas of such people as Jacobs (11), Wood (12), Angel (13) and Newman (14).

Newman's theory of defensible space (15) looks for people to be given an area and to be responsible for that area, it also allows them to be able to keep their area under surveillance. By giving people a territory they are more likely to be motivated to watch over and defend that territory and to join together in social groups for that purpose. If this fact becomes obvious then intruders are less likely to encroach onto that territory.

The reduction of crime through environmental design is developed in Chapter 6.

### 3.3. Displacement

If a potential offender is frustrated in an attempt he can either not commit an offence or he can choose another target. If the offender commits the offence on another target then the crime is considered to be displaced. Displacement is taken by Bennett (16) to mean that the crime must be committed on the same day in order to be displaced.

Displacement will to some extent be governed by the motivation of the potential offender, the greater his motivation to commit a crime, the less chance there will be of deterring him and the greater the chance of displacement (17).

Bennett (18) found that 40% of burglars would not commit another offence on that day if they were frustrated, while another 40% said that they would find an alternative target. The remainder said that their behaviour would depend on the circumstances. This indicates that the motivation for committing an offence can be controlled and suppressed even if it is just for a day.

Bennett also found that the final decision as to whether or not to offend was dependent on the person's perception of the risk of being caught. The most important factors in relation to this were, surveillability, the presence of neighbours and signs of occupancy. The difficulty in gaining entry was much less of a factor.

Cornish and Clarke (19) argue that the decision to commit a crime or not and the target chosen will depend on a number of factors, including: his needs,

his values, the likely benefits, the chances of being caught and the possibility of selecting an alternative target. Heal and Laycock (20) believe that the more that this decision process is understood the more successful will be any form of preventive measures in ascertaining if these measures will lead to displacement.

The upgrading of physical security of an area was found by Allatt (21) to have both positive and negative effects. Her study found that there was an increase in burglaries in adjacent areas and in other types of offences such as vandalism and theft from vehicles.

Allatt did show a reduction of burglaries on the housing estate which had had security hardware improved. This is to be expected for as most burglary is committed by people that live in or within a short distance from the area, any interest shown by agencies in the amount of burglary will be known by many of those who commit the crimes. Consequently, it would be wise to avoid carrying out a burglary in an area when every ones attention is focused on that area. It is therefore likely that the incidences of crime will fall while such a study is being undertaken.

Displacement is not necessarily likely to happen as actions taken to reduce certain types of crime have proved to be successful in the past ie. the improvements in airport security reduced high-jacking from seventy in the early 1970s to fifteen towards the end of the decade (22). Thefts from the new type of public telephones were virtually eliminated by replacing the aluminium coin boxes with steel ones (23).

In Germany (formally West Germany) there was a 60% reduction of car thefts

in 1963 when it became compulsory to have steering-column locks for all vehicles (24). In Britain, however, the introduction of steering-column locks was only for new cars and this led to a displacement from the theft of new cars to old ones and not to a general reduction.

Research carried out in the USA on the results of the police trying to reduce crime on the subways found that there was an increase of street crimes to correspond with the reduction in the subway (25). This indicated that a person who was prevented from committing a crime in the subway due to the increased security would commit the crime in the street instead.

Displacement may result under certain condition, but may not under others, it being dependent upon the individual. Some will not be prepared to take the extra risk, or to travel in order to carry on, or to switch to another type of criminal activity, while others will be quite prepared to do so.

Target hardening may not necessarily reduce the amount of crime but may cause potential offenders to change the way that they commit the crime, ie. the use of security firms to transport cash and valuables has not, it appears, reduced the amount of robberies of this nature (26).

The way that crime prevention is implemented will be affected by the situation, as different locations may require different methods of preventing burglaries. Council housing estates could adopt target hardening to keep out opportunist juveniles, though such measures would have little effect in preventing professional burglars in other locations.

### 3.3.1. Types of Displacement

According to Hakim and Rengard the main types of displacement are (27):

1. spatial displacement - where the potential offender moves to another area where environmental control has not been adopted.
2. temporal displacement - here the time of day, the particular day or the time of year is changed to one where criminal activity is safer.
3. tactical displacement - the burglar changes or varies his techniques and methods of working.
4. target displacement - here the burglar will look for easier targets avoiding targets which have an alarm or which require putting himself at a greater risk.

### 3.4. The Cost of Burglaries

Although crime prevention costs money it also saves money. Financial costs, however, are not the only costs associated with burglaries.

When a burglary is committed there are three types of costs (28):

1. The emotional cost which the householder suffers due to the break-in and for the cost incurred for loss of time at work due to distress or for helping the police. Also he would have to bear the loss of any item which was not adequately insured.
2. If the householder is insured then it is the insurance company who must pay for the loss and damage sustained due to the burglary, plus their administration costs.
3. The time spent by the police investigating the crime is another cost, as is the cost of the court and the penal system if the culprit is caught and found guilty.

The Northumbria Police have drawn up a model of average costs in the Criminal Justice System when dealing with certain crimes. For a burglary where the offender is arrested and pleads guilty in court and is sentenced to 240 hours community service and where the victim receives advice from a victim support volunteer, the cost is £13,900. at 1990 prices (29).

It could be argued that insurance companies should do more to enforce standards of security. This could, however, not be cost effective as in many

cases it would cost them more to survey or to investigate each dwelling than they would pay out in claims.

Insurance companies will require a security survey if the value of the property or the contents to be insured are above a certain amount. The security surveyor interviewed by the author had not in the 15 years he had been conducting such surveys ever found a property which did not require improvements in the security to make it acceptable to the insurance company (30).

Certainly some insurance companies are now giving incentives to householders by reducing premiums for those who do improve their security. However, there is no standardised requirement by all the insurance companies, so if one company requires a householder to fit certain types of locks and the householder does not wish to go to the expense of doing so, he could go to another insurance company who does not stipulate specific locks. The insurance companies must get together and lay down the minimum requirements which all companies will adopt.

Insurance companies have for many years been aiding the fire service by paying a levy on fire insurance premiums. The same could be done on household insurance, the levy on which, could go to helping the police. An additional levy could be charged if the police are called to an insured dwelling which was left insecure, or is fitted with sub-standard locks. Smith (31) advocates taking up the Association of Metropolitan Authorities notion of

security grants<sup>‡</sup> which it is claimed would provide everyone with the minimum level of protection for £60m over three years. This sum being about one-twentieth of the cost involved in solving all the burglaries which are solved over one year.

In 1986 the contribution from the government to crime prevention was £1.5 million (32). This, however, covers the full spectrum of crime prevention and not just burglaries.

Footnote:

\* Smith advocates that grants should be available from the Government to improve the standards of security.

### 3.5. Problems of Crime Prevention

There are a number of problems in selecting a course of action to reduce burglaries. The main ones are:

- i) crime prevention costs money.
  
- ii) there are a number of strongly held opposing views with regard to what does prevent crime. This ranges from the type of punishment to the improvement of social conditions (33).

Some writers on the subject of burglary offer no hope that a solution can be found. Waller and Okihiro (34) state: "burglary is something we must learn to live with". They state that the "peaceful nature" of the crime should be publicised in order to reduce fear and to increase insurance arrangements to compensate victims.

For any method of crime prevention to be used and to be effective there must be an incentive to adopt the method, ie. there is a tendency for crime prevention to work more in the low and medium risk areas than in the high risk areas. This serves to drive criminal activity into the high risk areas which are less able to take the measures which are likely to reduce the likelihood of them becoming a victim. The socio-economic groups who live in these areas are more likely to have money around the house than those who live in the low or medium risk areas who are normally paid by cheque. The occupants of the high risk areas are more likely to pay for their gas and electricity by a pre-payment coin meter than on a credit account, although there is a move away from coin meters by the gas and electricity companies

in favour of pre-payment card meters.

In certain areas the Police may be as unpopular to many of the occupants in that area as the burglar himself. Crime prevention must therefore, be adopted by all agencies who are involved with the welfare of people in any way (ie. social services) and these agencies must work together for the good of society. This is now recognised by the Government and is detailed in the Home Office Circular issued in 1990 (35).

### 3.6. Summary

Crime prevention strategies should try to eliminate the causes and the conditions which give rise to or encourage crime. This they do by considering some of the issues including the socio-economic factors which are likely to prevent a person turning to crime.

Crime prevention strategies also consider factors involving the education and the encouragement of the public to make their home more secure and keeping a watch out for potential burglars.

If a person is prevented from committing a burglary on a property at a particular time he may be deterred from committing a burglary at all. Alternatively, he may choose another property, in which case the burglary has not been prevented but displaced.

The success of preventing crime would reduce:

- i) the financial costs involved in the replacement of stolen items and the repair of damage done to the property, costs which are borne by the victim or their insurance company.
- ii) the costs involved in the investigation and subsequent trial and punishment of offenders.
- iii) the emotional costs to the victim.

## REFERENCES

1. Sixth United Nations Congress on the Prevention of Crime and the Treatment of Offenders. United Nations, New York, 1981.
2. Ibid.
3. Scarr H A, Patterns of Burglary, US Department of Justice, 1972.
4. Riley D & Mayhew P, Crime Prevention Publicity: an assessment, Home Office Research Study No 63, London, HMSO, 1980.
5. Cordonnier J V, Standing Conference of Local and Regional Authorities of Europe, Urban Violence and insecurity: The Role of Local Policies, Strasbourg 15 -16 Sept 1986.
6. Ibid.
7. Interview by the author with a Senior Police Officer, Lincolnshire Police.
8. Op. cit. Ref 5.
9. Burden P, The Burglary Business and You, London, Macmillian, 1980.
10. Bennett T, Situational Crime Prevention from the Offenders' Perspective, from Situational Crime Prevention from Theory into Practice, London, HMSO, 1986.
11. Jacobs J, The Death and Life of the Great American Cities, Penguin, Harmondsworth, 1965.
12. Wood E, Housing Design: A Social Theory, New York, Citizens Housing and Planning Council, 1961.
13. Angle S, Discouraging Crime Through City Planning, Paper No 75, University of California, Institute of Urban and Regional Development, Berkely, 1968.
14. Newman O, Defensible Space, People and Design in the Violent City, London, Architectual Press, 1972.
15. Ibid.
16. Op. cit. Ref 10.

17. Ibid.
18. Ibid.
19. Cornish D & Clarke R, Situational Prevention, Displacement of Crime and Rational Choice Theory, from Situational Crime Prevention from Theory into Practice, London, HMSO, 1986.
20. Heal K & Laycock G, Principles, Issues and Further Action, from Situational Crime Prevention from Theory into Practice, London, HMSO, 1986.
21. Allatt P, Residential Security: Containment and Displacement of Burglary, from The Howard Journal Vol. 23 No 22 June 1984.
22. Wilkinson P, Terrorism and the Liberal State, London, Macmillian, 1977.
23. Mayhew P, Clarke R, Sturman A & Hough J, Crime as Opportunity, Home Office Research Study No 34, London, HMSO, 1976.
24. Ibid.
25. Chaiken J, Lawless M & Stevenson K, Impact of Police Activity on Crime: Robberies on the New York City Subway System, Santa Monica, California, Rand Corporation, 1974.
26. Trasher G, Situational Crime Control and Rational Choice: a critique, from Situational Crime Prevention from Theory into Practice, London, HMSO, 1986.
27. Hakin S & Rengard G, Crime Spillover, Beverly Hills, Sage, 1981.
28. Pearse K, Some Futures in Crime Prevention, Home Office Research Bulletin, HMSO, 1979.
29. Ovens N G, Chief Constable, Lincolnshire Police, Opening address at Crime Prevention Seminar, 11 December 1990, The Lawns Conference Centre, Lincoln.
30. Dobson M, Association of British Insurers, Interview with author.
31. Smith S J, Design against Crime? Beyond the Rhetoric of Residential Crime Prevention, Property Management Vol.5 No2, 1987.

32. Hurd D, Address made to the Crime Concern Conference at Loughborough University, 7 July 1989.
33. Op. cit. Ref 28.
34. Waller I & Okihiro N, Burglary: The Victim and the Public, University of Toronto Press, Toronto, 1978.
35. Crime Prevention - The Partnership Approach, Home Office Circular 44/90, HMSO, 1990.

## CHAPTER 4

### 4. PUNISHMENT AND PSYCHOLOGICAL ASPECTS

#### 4.1. Punishment as a Deterrent

Cook stated (1) that: " The profit of the crime is the force which urges a man to delinquency: the pain of punishment is the force employed to restrain him from it. If the first of these forces is the greater the crime will be committed; if the second, the crime will not be committed".

A report (2) by criminologist Donald Lewis for the Independent Policy Journals group published in May 1988, states that burglary could be cut by almost 3.5% if sentences were increased by 10%. The report states: "Criminologists and decision makers have placed too much emphasis on rehabilitation and paid insufficient attention to the deterrent effect of punishment". It states that even allowing for the limitations of statistics, evidence of the deterrent effect of longer sentences is strong. This is borne out by the moving away from dwellings by burglars and into commercial buildings due to longer prison sentences imposed on people convicted of burglary in dwellings.

Interviews were conducted with over 20 convicted burglars (See Chapter 8) who stated that they would on release from prison return to burglary though on buildings other than dwellings. The reason for them turning away from dwellings is the increased sentences they would get if convicted of burglary in dwellings (3). However, in Lincolnshire there has over the last decade been a decline in burglaries of commercial properties in comparison to

burglaries of residential properties. Residential burglaries doubling whilst commercial burglaries rose by 33% for the same period (4).

The deterrent effect is borne out by Dr David Pyle a former Home Office adviser who now lectures in economics at Leicester University (5). He states that it would be more cost effective to increase the length of prison sentences for those convicted than to increase the size of the police force. This policy if adopted would cost £3.6 million per year at 1989 costs, whereas, Pyle concludes that it would cost £51.2 million to employ enough additional police to cut the number of property thefts by 1%. This is particularly applicable when considering burglary as this type of crime is not really prevented by having additional police on the beat. The additional manpower would only be useful in detecting the offenders.

In April 1988, however, a grading system, known as screening, was introduced by the Police which awarded points to all but the most serious crimes on a basis of the clues available. This meant that the Police would only investigate the crimes which they felt they had a reasonable chance of solving.

The Home Secretary, Douglas Hurd released figures in July 1989 (6) which gave the Metropolitan Police figures as 30% of offences being screened in, which were deemed worth the Police investigating.

This approach has advantages from the police point of view though it meant that unless a burglar was seen committing the offence, or the police had a good description of a suspect, they would not make any attempt to catch the offender, or recover the stolen property.

Such a policy allowed a burglar a greater chance of avoiding detection and apprehension. It also meant that although the improvement of security measures in a dwelling may deter a prospective burglar from attempting a forced entry, the knowledge that unless he was actually seen he would probably not be apprehended could encourage a burglar to commit an offence.

The points system was not liked by the public (7), which was seen by them as a "Thieves Charter". This system was discontinued on November 6th 1989.

The effectiveness of the deterrent effect can be shown by the number of burglaries performed by professional burglars in Montgomery County, USA (8). A professional gang of burglars had equal access to Montgomery County, Fairfax County and Prince George's County. All areas were similar in socio-economic terms and were thus equally promising targets, however, the bond required in Montgomery County for bail was \$50,000 whereas in the over Counties it was \$2,500 and \$3,000. It therefore made no sense to the burglars to commit burglaries in the Montgomery area.

The burglars would also only work during the day due to the differential punishment between day time and night time offences. Day time burglary could be classed as a misdemeanour with a relatively light sentence ie. a fine or a short prison sentence, while night time burglary could result in a sentence of up to 5 years imprisonment.

In England and Wales in 1978, 64% of adult offenders charged with burglary in a dwelling were committed for trial or sentence to a higher court. 49% of

burglars received a custodial sentence, while for juveniles 20% of all offenders sent to borstal were convicted of burglary in a dwelling (9).

Some judges are now taking a more serious view of burglary even though no violence is performed in the perpetration of the offence. This is particularly applicable in the case of habitual burglars. One judge when sentencing two burglars stated that it would only be a matter of time before they encountered an occupant in the carrying out of their crime and this could lead to violence (10).

The 1984 British Crime Survey (11) found that 86% of people favoured giving some non-violent offenders community service instead of a prison sentence and 82% favoured the offenders paying compensation to their victims instead of being sent to prison.

The cost of keeping a person in prison per week is approximately £275, while Community Service costs £15 per week (12). Alternatives to prison although less expensive appear to produce no better results (13).

The instances of re-conviction of burglars indicates that there does not exist a strong enough deterrent in the way that burglars are dealt with by the courts. Many burglars believe that the actual risk of being caught is small and the rewards are high.

## 4.2. Fear of Burglaries

The fear of burglary can affect a person's health causing them illness from worry or by affecting their sleeping habits. It can affect their way of life by preventing them from going out, or it can force them to adopt a siege mentality by the fixing of bars at windows and metal doors.

The effect of the fear of burglary was highlighted by the visit of John Patten MP to the Grantham Road Estate, Stockwell, South London in January 1989 (14) after the death of a man in a fire due to the level of security used in a high crime estate. The security measures employed prevented the fire brigade from being able to get into the house to rescue the man.

Douglas Hurd when Home Secretary acknowledged the fear of crime in a speech to the Standing Conference on Crime Prevention (15) when he said: "In our cities, certainly, but also in country villages, the fear of crime can stunt and cripple the lives of law-abiding folk; but often the fear far outruns the danger".

Fear of crime really means the anxiety of becoming a victim of a crime and experiencing the results which this will bring i.e. the loss of property or the invasion of privacy.

The fear of being burgled will to some extent depend on the psychological make up of the person. Some people may be in the high risk area and accept the fact that there is a high risk of being burgled and yet remain unworried about it. Others may feel that the chances of them becoming a victim are small and yet continually worry about it. The consequence of becoming a

victim will also affect the amount of fear; a person who has prized possessions which have been in the family for years and have great sentimental value will suffer more if they are stolen. The elderly or a woman alone may fear that a burglar may enter the premises while they are there with the result of physical or sexual attack. Fear will also be based on the level of income in the respect of being able to insure the property or replace goods stolen and damage done.

Allatt (16) found that the most fearful of crime were lone adults with children of school age or below. This is important as this group can make up a large proportion of the inhabitants on local authority council estates. The elderly, separated or divorced women and people with manual occupations are most affected by victimisation and tend to have a greater fear of becoming a victim.

Women tend to suffer greater psychological effects of a burglary than a man, particularly if they live alone and/or with small children. These effects can be long lasting and include depression, fear, sleeplessness and lead to the distrust of others.

For some people the fear of crime is a very important facet of what they do to improve the security of their home. While others can be burgled repeatedly and they do not seem to learn or take appreciable steps to improve the chance of it not happening to them again.

The effect of a burglary can mean that a household stops being apathetic about security, though fear of becoming a victim is not necessarily related to the incidence or experience of a burglary or crime (17). Though people

who have been burgled do tend to be more fearful than those who have not been burgled (18).

According to Reppetto people who had been burgled worried more over the possibility of being burgled again than those who had not gone through the experience (19). His findings indicated that 73% of victims expressed considerable fear of a repercussion.

The feeling of insecurity, the fear of crime and the fear of being a victim of crime are among the major concerns of town-dwellers (20). This is highest in multi-racial areas and in the poorest council estates, where the crime rates are the highest.

Insecurity tends to produce an urge for individual self-defence among certain sections of the community (21). The privatisation of security where the public take on the roll of the police is yet another social response and a particularly dangerous one because it implies that the authorities have relinquished their responsibilities.

In a controversial speech Sir Robert Mark in 1978 (22) admitted the shortfalls of the police in the attempt to reduce and detect instances of burglary in London. He stated: " The simple truth is that crimes against property are now so numerous that both police and courts are of little relevance from the point of view of the victim and the insurer. I am suggesting quite bluntly that for the first time in this century the belief that the State can, or even wishes to, protect people effectively from burglary, break-in offences and theft should be abandoned, at least in the great cities, where inadequate numbers of police have other and much more

demanding priorities".

### 4.3 Summary

Many burglars perceive the risks taken are small in comparison to the possible rewards from burglary. They also are not deterred by the prospect of a relatively minor punishment if they are caught and convicted.

Other burglars are moving away from domestic burglary due to the higher sentences handed out by the courts to those convicted of domestic burglary in comparison to commercial burglary.

Higher custodial sentences appear to produce better results of preventing a person from re-offending than the alternative methods of punishment. Measures can be taken which will cause a potential burglar to be dissuaded from choosing a particular dwelling as a target.

These measures will also help to reduce the fear of the occupant of being burgled, a fear which can deeply affect the lives of those who are particularly vulnerable ie. single parent families with children of or below school age. Women more than men are more likely to suffer the after effects of a burglary which can be deep and long lasting.

## REFERENCES

1. Cook P J, Criminal Deterrence: Laying the Groundwork for the Second Decade, in Crime and Justice: an annual review of research, Chicago, University of Chicago Press, 1980.
2. Article Daily Mail, 25 May 1988.
3. Authors Research: Interviews with convicted Burglars.
4. Coates T M, Chief Superintendent, Lincolnshire Police, Address at Crime Prevention Seminar, The Lawns Conference Centre, Lincoln, 11 December 1990.
5. Pyle D, Article in Daily Mail, 28 Dec 1988.
6. Jones G, Article Daily Mail, 18 July 1989.
7. Gibb-Grey, Detective Supt, interviewed by Daily Mail, 6 Nov 1989.
8. Scarr H A, Patterns of Burglary, US Department of Justice, 1972.
9. Burden P, The Burglary Business and You, London, Macmillian, 1980.
10. Ibid.
11. Hough M & Mayhew P, The British Crime Survey: First Report, Home Office Research Study No 76, London, HMSO, 1983.
12. Interview by Author with Chief Probation Officer, Lincolnshire Probation Service.
13. Brody S, The Effectiveness of Sentencing, Home Office Research Study No35, London, HMSO, 1976.
14. Edwards J, Article Daily Mail, 19 Jan 1989.
15. Crime Prevention News, Home Office, HMSO, June 1989.
16. Allatt P, Fear of Crime: The Effect of Improved Residential Security on a Difficult to let Estate, Howard Journal, Oct 1984.
17. Op. cit. Ref 11.

18. Skogan W G & Masefield M, *Coping with Crime: Individual and Neighbourhood Reactions*, London, Sage, 1981.
19. Reppetto T A, *Residential Crime*, Cambridge Mass, Ballinger, 1974.
20. Ruiz I & Pena G, *Standing Conference of Local and Regional Authorities of Europe, Urban Violence and insecurity: The Role of Local Policies*, Strasbourg, 15 - 16 Sept 1986.
21. Ibid.
22. Mark, Sir Robert, *Speech made to Conference for Security Experts*, London, 17 Oct 1978.

## CHAPTER 5

### 5. Neighbourhood Watch Schemes

Neighbourhood Watch Schemes developed in the United States of America in the 1970's, the first scheme in Britain was launched in Mollington, Cheshire in 1982 (1). By 1988 there were nearly 60,000 similar schemes with more than one household in six being a member of such a scheme.

Neighbourhood Watch (NW) works on the principle that potential burglars will be deterred from committing a crime if there is a risk that they will be seen by the residents who are keeping a watch over their neighbourhood and reporting anything suspicious to the police.

To act as a deterrent the NW Scheme must have a high profile which is obtained by the erection of signs in the street and the display in windows of stickers announcing that such a scheme is in operation.

Husain (2) states that it may be sufficient in the short term to rely on the existence of a scheme to deter potential offenders, though it will only continue to deter if it is known that the risk of detection will be greater in a scheme due to residents taking protective action.

When NW Schemes were first introduced the size of the schemes ranged from a few households to in excess of 3000. It was thought by the police at that time that the optimal size of a scheme was between 300 - 500 dwellings. The current trend is to have schemes of around 10 to 20 dwellings, making them more manageable.

The aims of NW (3) are to:

1. reduce crime.
2. heighten public awareness to safeguard property.
3. improve contact between neighbours.
4. improve liaison between the public and the police.
5. reduce the fear of crime.
6. produce greater participation by members of the public thereby reducing the demand on the police.

As well as consisting of the NW Schemes other aspects of security come into consideration (4), these are:

1. property marking schemes - this uses the owners post code which is marked on all valuable items either visibly or by the use of a ultra-violet pen.
2. home security surveys - here the police will visit any property upon request to give free advice on security.
3. community crime prevention and environmental awareness - crime

prevention is promoted by making members more aware of the situation within their area.

4. community spirit - this is encouraged in order that people will get to know each other and be prepared to watch over their neighbours property.

The 1984 British Crime Survey (5) found that less than 1% of the sample were involved with a NW Scheme although over 50% had heard of it, the majority of which would be willing to join a scheme should one start in their area. Almost 90% of the sample thought that NW Schemes would work and two thirds said they would be prepared to join a scheme in their area, although the locations which are most prone to burglary were not particularly enthusiastic in their support.

The survey found that there were a number of reasons why people did not join a NW Scheme. Reasons such as the person was away too much, too ill, too old, or too busy. Some liked the idea but thought it would not work in their area for reasons including lack of motivation or the untrustworthiness of the local people, the physical difficulties of keeping a watch on each other's homes and the problem of distinguishing between intruder and legitimate caller. Others were sceptical about the effectiveness of the schemes.

One of the greatest problems which the police have to overcome in their fight against crime is that of apathy. Most people adopt the attitude that it can not happen to them, or they just do not want to think about it.

Lincoln Police fitted out a house in order to show how a dwelling could be

made more secure. The house was situated on a council estate to the south of the city and it was open to the public from 1200 hours until 2000 hours on week days and from 1000 hours until 1800 hours at the week end. Although the 'secure' house was well publicised and easy to get to the number of people visiting the house over the seven days amounted to under 200 people.

The police stated that the reason for the poor attendance was that the house was in an area with a low incidence of crime, and that the crime figures released by Lincoln Police the week before the house being opened showed a marked reduction in instances of burglary in the city. The police, however, were the first to admit that apathy was possibly the main reason for the low attendance.

People from the professional classes, those over 30 and people well disposed to the police are more likely to report a burglary and be involved with NW.

Neighbourhood Watch will only work where people are willing and able to watch and are willing to call the police if they see something which is suspicious. If the properties are surrounded by bushes or high fences, or most of the occupants are away all day then NW will not work as it is supposed to. Consequently, although the idea may be sound and may work very well in some areas, in others it may not work despite the willingness of scheme members.

A study carried out by Husain (6) found that once a NW is established the complete failure of the scheme is an unusual occurrence. The probability of failure is highest in high-risk areas, particularly if the relationship between

residents and the police is poor.

The police and government attribute the falling rate of burglaries between 1986 and 1989 to the effectiveness of the NW Schemes (7), however, a study carried out by Professor Young of the Criminology Centre at Middlesex Polytechnic concluded that NW had been a failure in tackling burglary (8).

An evaluation of NW in London (9) failed to show any positive changes associated with NW and its impact on crime, or its reporting or detection. One of the areas investigated in the London evaluation was Acton which just before the test had a very low rate of crime. It could be argued therefore that this rate would have increased even if no evaluation was done, and no NW was introduced, but merely because the statistics regressed to the mean.

Another factor to consider is whether any of the burglars who live or work in that area were imprisoned or released from prison during the evaluation, as this could affect the results. Changes in the environment, eg. new footpaths, must also be considered. It is important that all factors affecting the area are considered when assessing the outcome of any experiments or evaluations or a false conclusion can be reached. Although there is no evidence to show the reduction of crime within NW Schemes, the evaluation in London did find that there was some reduction in the fear of crime and an improvement in the social cohesiveness of the area.

Residents on the estates investigated by Allatt (10) saw local youths as the perpetrators of the crimes in the neighbourhood and they believed that they had most to fear from their neighbours. This can explain the lack of interest the police have had on certain high crime estates when they have tried to

start a NW Scheme.

For some NW has been taken a step further. In Gosforth, Newcastle upon Tyne, a 110 man force of vigilantes has been formed to patrol the area in which they live (11). They were formed as a result of the frustration of the residents at the police's failure to stem burglaries and vandalism. Since the patrols, burglaries have been cut dramatically.

People in other parts of the country are also turning to mounting their own patrols as in the village of Grimethorpe, South Yorkshire (12).

John Patten, the Home Office minister, stated in the House of Commons in March 1989 that the Government do not want private citizens taking up the policing of this country (13). More people are, however, turning to this method of crime prevention either by doing it themselves, or by hiring security firms (14).

## 5.1 Summary

Neighbourhood Watch Schemes have grown in popularity in this country since they were first introduced in 1982. Within six years of their introduction nearly one household in six is a member of a scheme.

The number of households in the schemes has changed from large schemes of between 300 to 500 to between 10 and 20 households.

Although researchers are divided as to the benefit of the schemes, the police maintain that they have contributed to the reduction of burglaries in dwellings. It is also stated by the police that they do improve the social cohesiveness of the area and increase the knowledge that individuals have of crime prevention.

## REFERENCES

1. Practical Ways to Crack Crime, 2nd Edition, Home Office, HMSO, 1988.
2. Husain S, Neighbourhood Watch in England and Wales: a Location Analysis, Crime Prevention Unit Paper 12, Home Office, London, 1988.
3. Russel J, A Guide to Neighbourhood Watch Schemes, 'A' Dept, Metropolitan Police, Undated.
4. Bennett T, An Evaluation of Two Neighbourhood Watch Schemes in London, University of Cambridge Institute of Criminology, 1987.
5. Hough M & Mayhew P, The British Crime Survey: First Report, Home Office Research Study No 76, London, HMSO, 1983.
6. Op. cit. Ref 2.
7. Article Daily Mail Newspaper, 10 May 1989.
8. Young J, An address given at Criminology Conference in Bristol, July 1989, Reported in Daily Mail Newspaper, 18 July 1989.
9. Op. cit. Ref 4.
10. Allatt P, Fear of Crime: The effect of Improved Residential Security on a Difficult to Let Estate, in The Howard Journal, Oct 1984.
11. Craig J, The Sunday Times, 5 Mar 1989.
12. Ibid.
13. Ibid.
14. Ibid.

## CHAPTER 6

### 6. PLANNING AND DESIGN

#### 6.1. Considerations

Sociologists postulate that there is a relationship between behaviour and the environment and that this relationship is directly correlated with the instances of crime within an area (1).

Newman (2) and Jacobs (3) research has led to a better understanding of the environmental factors which affect crime and it is important that these factors are understood when planning developments and designing dwellings.

The examination of housing estates that have been affected by crime has indicated that the risk of crime is greater on large estates than on small ones (4). The reason for this is that large estates provide numerous hiding places and a greater number of entry points which makes that estate attractive to criminals.

Although the author stresses the need for design and planning to reduce security problems, it is not intended to understate the importance of good physical security devices; however, the correct measures must be specified according to the situation. In many cases of speculative house building no specification has been proposed by the designer or architect which leaves the builder to choose which specification to include in each property. Many house builders in the past having no guides to work on have chosen the

standard on the basis of cost rather than effectiveness (5).

This research (See Chapter 8) shows that many house builders have little knowledge of the devices available. Therefore, a section on the types of physical security is given in Appendix B.

Physical security does much to reduce incidences of burglary and make the occupants feel safer within their home. It does not, however, reduce the instances of other crimes ie. vandalism and muggings in an area, if the environment is conducive to these crimes (6). Designers must discourage crime through environmental design of a whole area.

Lincoln City Council experienced an outbreak of burglaries on their Birchwood Estate due to poorly designed windows which could not close properly. This resulted in complaints from tenants which led to the Council having to replace the windows at the cost of several thousand pounds.

The designer of a dwelling must also consider the weaknesses of adjoining buildings. It is possible for a burglar to gain entry to an adjoining building and then make an entry via the roof or party wall, or to use that building as a form of cover while forcing an entry.

It has been demonstrated that once a dwelling has been burgled, it stands a greater chance of being burgled again (7). In fact, the probability of being burgled more than once has been put at 3 or 4 times as high as being burgled for the first time (8). The authors survey of Householders found that 48% of those who had been burgled had been burgled more than once.

The reason for this multiple burglary is if a dwelling has the prerequisites which make it attractive to a burglar, eg. it is near to a main road, it backs onto waste ground, or it is set at some distance from the nearest house; it is unlikely that these prerequisites will be changed after one burglary. Hence, it will at some time in the future be attractive to another burglar.

The number of multiple burglaries does indicate that the design and situation do play a major factor in determining if a burglar will select a dwelling as a target. Newman claims that design features can account for a difference in crime rates of as much as 50% (9). This is further confirmed by Coleman (10). Though Smith (11) contends that such a link between crime and design may be criticised on methodological grounds.

The design of a building is also a statement to a prospective burglar of the concern of the resident with regard to security. Burglar alarms, security lighting, good strong doors, window locks, the features of the building and its positioning all indicate to a burglar whether it is a well protected building which he would be well advised not to attempt to burgle.

In order to make buildings more secure it may necessitate some concessions being made, for instance:

- 1) the cost of the building is likely to be greater resulting from the improved materials or standards required ( See Chapter 7.4).
- 2) the type and nature of components and materials may be restricted, ie. softwood windows offer little resistance to a forced entry.

3) the type of building layout may be restricted reducing the number of doors or the appearance of the building.

4) freedom of movement may be reduced around a building in order to restrict access.

5) personal choice may be reduced whereby materials or designs which are not conducive to good security are not offered.

Personal choice will in some cases reduce security; for example many people do not want to be overlooked by neighbours, or they want to have their house backing onto open ground. For them the benefits that they obtain far outweigh the risk involved with making the property less vulnerable to burglary.

## 6.2. Designers and Planners Responsibility

As the pattern of crime and the behaviour of burglars are known these can be taken into account when designing a dwelling for certain locations which may be more susceptible to burglary.

In California all building designs and development plans are required to be inspected with a view to security. The crime patterns of the location in which construction will take place is considered (See Chapter 7) as this has been found to affect the likelihood of a burglary occurring.

An important advantage in the increased awareness of security in the USA is that architects, builders and developers are finding security an important ingredient in successful marketing (12).

In Britain, Bellway Homes introduced a security package which research found had had an influence on purchasers decision to buy (13). The package included hardware recommended by the police and the design incorporated the recommendations advocated by Newmans theory on defensible space (14). 68% of Bellways purchasers who had purchased in the Northumbria area had chosen a Bellway home in preference to competitors because of improved security arrangements.

Although advances have been made in environmental planning with regard to security, they have been achieved in an uncoordinated and arbitrary way. A great deal more could be achieved if preventive measures were incorporated into town planning in a more formal manner. It has been suggested that the imposition of a code of practice on builders and

developers for crime prevention could be applied to planning applications and building regulations (15). (This is discussed in Chapter 7).

The author found (16) that planners had not been formally educated in security matters (See Chapter 8) so that they do not have the skills to be able to assess plans which are submitted for planning approval, nor do they have the authority to make recommendations with regard to security. As a consequence many local authorities seek guidance from the local Police Architectural Liaison Officer, a service which is available throughout the country. This ensures that buildings and developments are constructed which have been designed to reduce the likelihood of burglary.

### 6.3. Surveys Prior to Design

Before designing a building the architect will require a ground and site survey in order to ensure that the building proposed on that particular site is in keeping with the ground conditions. The building is then designed according to the ground and situation.

With regard to security, a local survey should be conducted to ascertain if the location for the dwelling is subject to a high risk of burglary. The design should take these findings into consideration with the design reflecting the amount of risk (17).

The purpose of the security survey at this stage is to identify the risk. The designer should ascertain the crime statistics for the area and whether there are any high risk areas in the vicinity. It will also be necessary to ascertain if any future development would have an effect on the security requirements of the project, for this could possibly affect the design, ie. the construction of a local authority council estate or new road systems.

As the location will have an important bearing on the type and standards of security employed a number of factors must be considered when designing the dwelling. These include the immediate surrounding area and will include:

- 1) the types of buildings. Certain types of buildings attract certain types of people e.g. a hostel for the rehabilitation of offenders, a social security office, or a place where prisoners who have just been released from prison can live. If these are nearby it would be prudent to increase the level of security in any dwellings, for these can have have a marked effect on the

vulnerability of nearby buildings (18).

The conditions and tenancies of dwellings can also give an indication as to the likelihood of a burglary occurring. (See No. 8 below).

2) types and position of roads and footpaths through the area. Where access and egress to an area is freely available encouragement is given to potential burglar to wander unchecked and at will through the area.

3) amount of vehicular traffic. Where large numbers of vehicles use the area, unfamiliar vehicles are unlikely to raise suspicion.

4) parks, commons and waste ground. Where people are allowed free and unobstructed movement around an area, they are unlikely to be challenged or have their motives for being there questioned.

5) the number and location of alleyways. These are frequently concealed and can make entry into the side or rear of a property relatively easy.

6) privacy of the dwelling. Burglars prefer to work where they cannot be seen. Buildings which are set back from the road with tall hedges or fences can provide burglars with the cover they need to effect an entry unobserved.

7) the amount of lighting. Criminals are discouraged if high lighting levels increase the possibility of them being seen.

8) the proximity of slums and low income or run down areas also play an

important part in assessing the amount of security and the type of measures to be taken. It is in the proximity of these areas that the majority of burglaries occur (19).

9) the location of facilities in the area which will mean that people from outside the area maybe drawn in is an important consideration. The type of people may be those who are liable to commit crimes, either there and then as in the case of football hooligans, or some one who will see a dwelling which is ideal for burglary. If this is the case and transport is not a problem, the distance from the area that the burglar lives is not important as many professional burglars commute great distances (20).

#### 6.4. Design Factors

When considering environmental design with regard to security the following should be borne in mind (21, 22):

- 1) the area should be aesthetically pleasing and instil a pride in the area by members of the community who live there.
  
- 2) the area should be able to be defined as a territory which belongs to the members of the community and which they have an influence on.
  
- 3) areas which are public and private should have clear boundaries and uses of the area should where possible be kept separate. Boundaries can be marked by physical or symbolic barriers such as a change in road surface or a narrowing into a form of entrance way. Plate 6.1 shows how a change in the road surface marks the boundary between public and private areas.



Plate 6.1 shows how a change in road surface marks the boundary between public and private areas.

4) there should be opportunities for residents to keep their area under surveillance, for even communal areas, if these are easily over seen, will discourage criminals.

5) the layout of the area should be a convivial clustered arrangement, as shown in Plate 6.2, rather than a formal linear one. This arrangement allows the community to watch over neighbours homes.



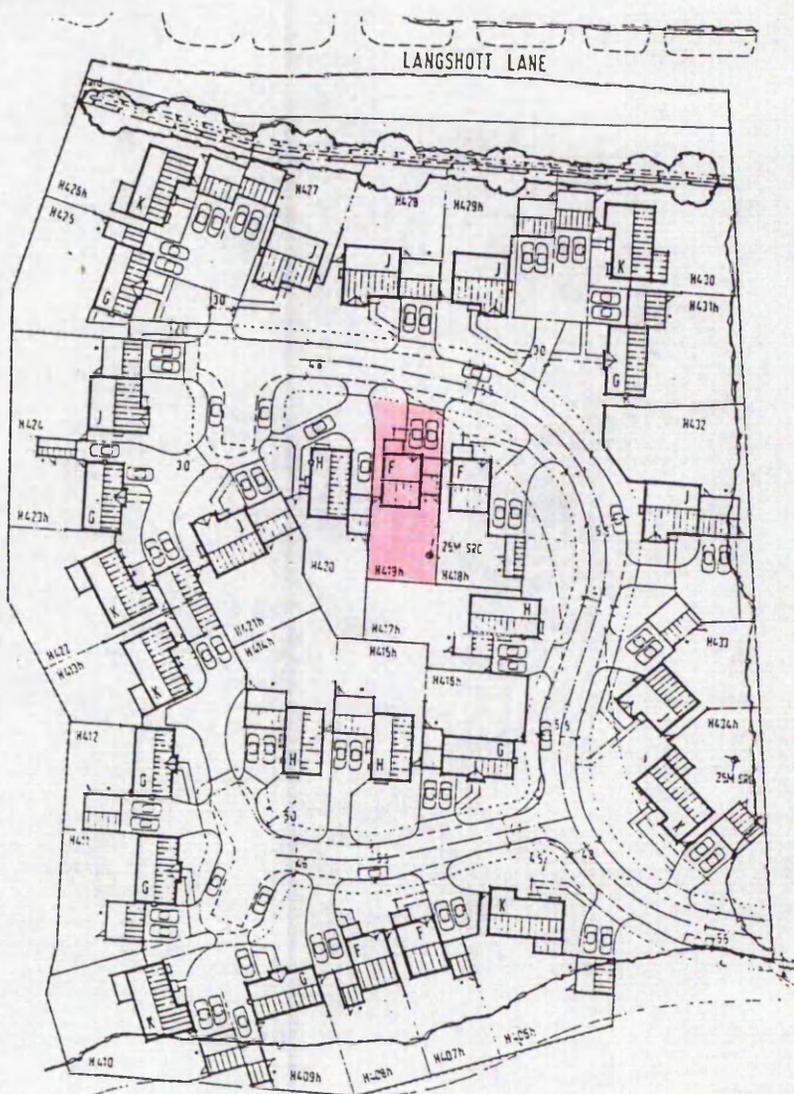
Plate 6.2 shows a convivial clustered arrangement. The effect of this is diminished by the high fence shielding the dwelling on the left of the plate. This prevents neighbours over seeing that particular property.

Ideally dwellings should be sited in cul-de-sacs and, in order to build up a community spirit, they should face each other. This also allows people to get to know their neighbours and see who lives where. It is also useful to mix the type of dwellings for by having bungalows, two and three bedroomed houses it increases the possibility of having someone at home throughout the day. Figure 6.1 shows an example of a well designed layout, while Figure 6.2 shows one which is likely to cause problems with security.

Dwellings should be positioned in order that they face each other and that all back gardens back onto another garden. This makes access more difficult by increasing the number of obstacles that a burglar will have to negotiate. Dwellings should not back onto an alleyway or pathway, or on to open easily accessible ground as shown in Plates 6.3 and 6.4.

There should be some form of secure boundary to prevent access from the front to the side or rear of the property. The ideal solution is a gate which is difficult to climb over and which can be kept locked. Gas and electricity meters should be sited where they can be read without the need for entering the secure area of the dwelling.

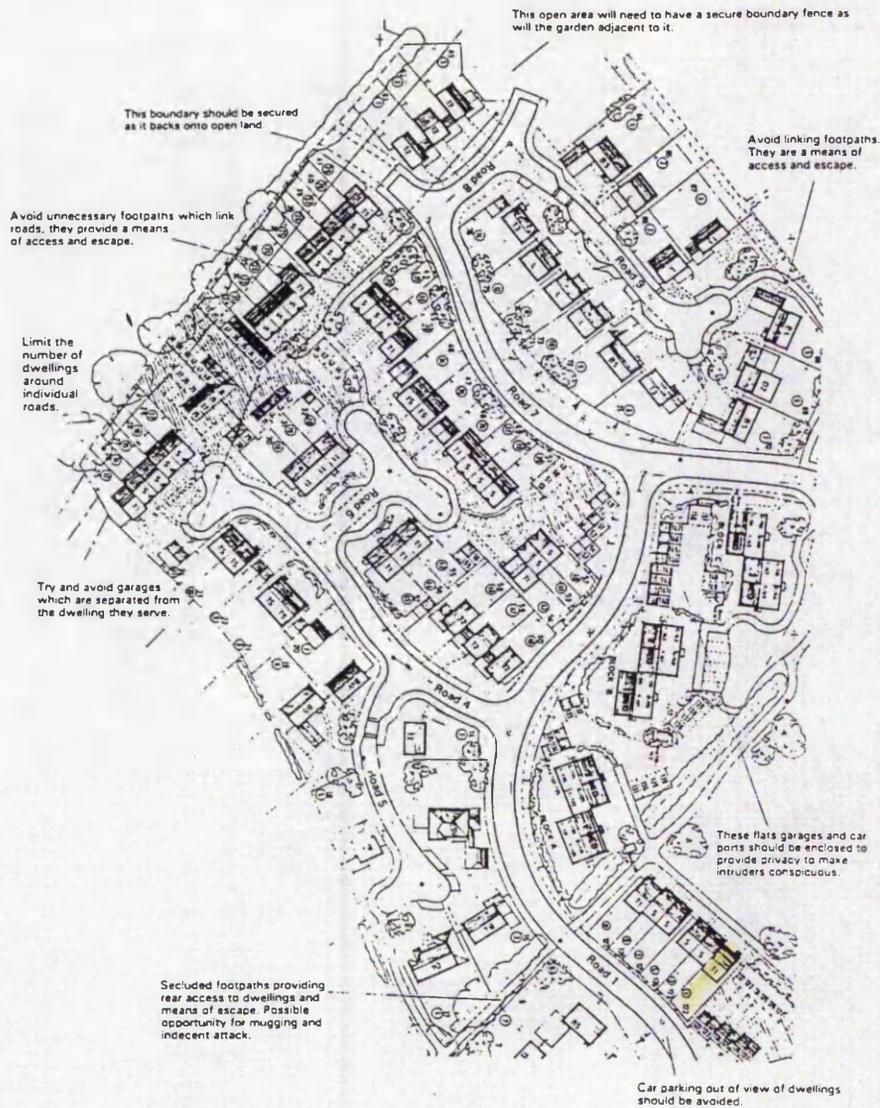
Problems can be caused by projecting features in that they restrict the line of view and also give cover to a potential burglar. Projecting porches which have the door to the side should be avoided, as should deeply recessed doorways which provide cover for a burglar to work. Doors should be sited where they can be seen by neighbours. Doors should not be concealed by projections as shown in Plate 6.6 as this would allow a burglar to effect an entry without being seen.



This estate layout uses small clusters of dwellings to create an attractive well liked environment. Dwellings are linked together with fences, gates are provided to rear access paths and boundaries are secured by walls and fences.

Figure 6.1 shows a well designed layout with no through routes and the dwellings in a clustered arrangement. The development is used to assess the vulnerability of the dwelling coloured pink. ( See Chapter 8.4 and Appendix G).

Source: NHBC Guidance on how the security of new homes can be improved (23).



Parts of this site layout will not encourage neighbourliness because except for the dwellings around the roads 5 and 9, the dwellings are not gathered into small clusters. The occupiers of dwellings sited on roads 1, 4 and 6 will not get to know each other because the community is too large and widespread. On this estate an intruder could go undetected. The number of interlinking footpaths would also facilitate ease of undetected entry and escape. Footpaths should be limited to those which are essential.

Much fencing will be required to make garden areas secure. The layout could have been improved by making greater use of the dwellings themselves for natural defences. Road 7 for instance could have been deleted and the garden areas on either side backed onto each other. Access from road 9 could have been directly from road 1.

Figure 6.2 Shows an example of an estate layout which is likely to cause problems with regard to security. The development is used to assess the vulnerability of the dwelling coloured yellow. ( See Chapter 8.4 and Appendix G ).

Source: NHBC Guidance on how the security of new homes can be improved (24).



Plate 6.3 shows an alleyway which runs along the rear of some dwellings. The winding nature of the alleyway and the walls either side make it easy for a potential burglar to gain entry to a dwelling while being hidden from view.



Plate 6.4 shows dwellings situated on easily accessible ground with a public footpath. The concealed access to the rear is protected from view by a high fence making a move from the public area to the private area very simple. Note the absence of any physical boundary to indicate where public property ends and private property begins.



Plate 6.5 shows rear gardens which back onto a road leading to isolated garages. The condition of the perimeter barrier allows easy access from the public ground to the rear of the property.



Plate 6.6 shows a linear arrangement with the doors concealed by projecting outbuildings. A burglar would be hidden by the projecting outbuildings while effecting an entry. The layout of the dwellings makes movement around the area an easy matter for a potential burglar.

The ideal distance from the dwelling to the boundary of the property with the public area is between 3 and 5 metres (25). Any distance greater than this allows a person to approach the dwelling without being so noticeable.

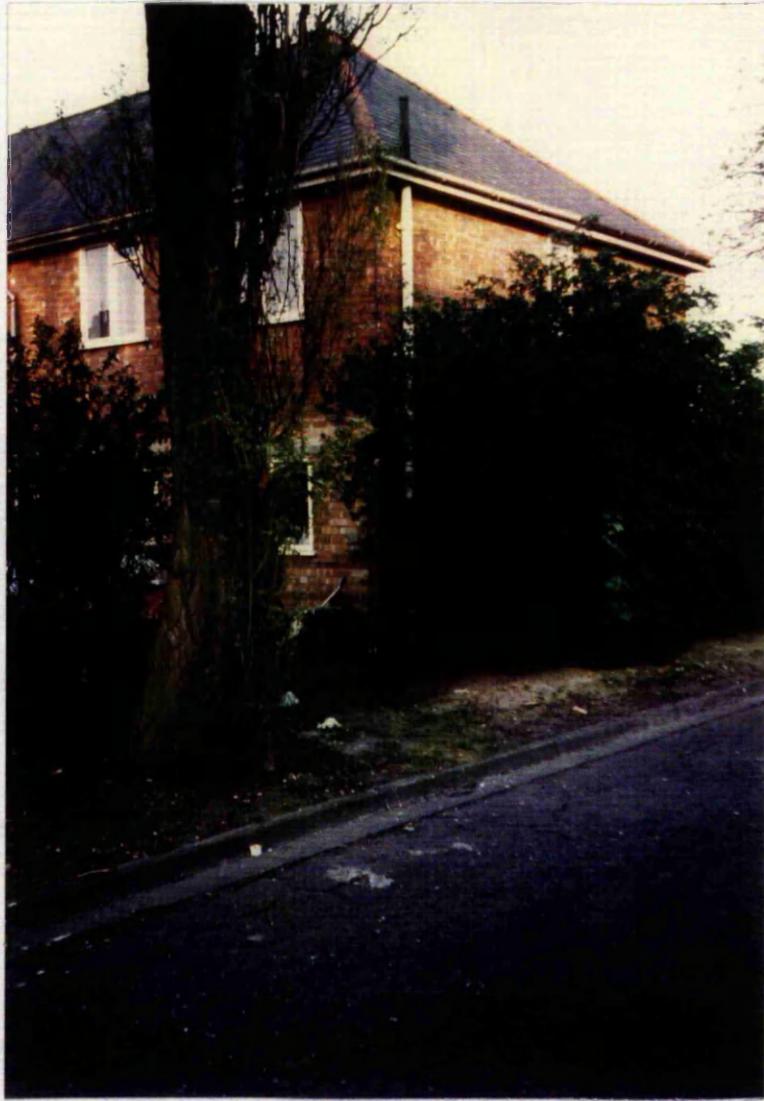


Plate 6.7 shows a situation which allows a person to step from the public area into the rear of the property, or to gain entry to the dwelling via a side window while hidden from view by the hedge.

#### 6.4.1. Perimeter Barriers

These are normally provided by fences, hedges or walls. The type of perimeter barrier used will depend on the location and what is on the other side. If an allotment or park is situated to the rear of the dwelling a fence of at least 1.5m with trellis on top should be used. Anything less than this offers little difficulty for an intruder to get over.

Many housing estates restrict the height of fencing on the front boundary. Even if the height is such that the fence can be stepped over easily, to do so by an intruder would mean him putting himself in a vulnerable position. The absence of fences to give cover may be a deterrent from attempting a break in, unless easy access is obtainable to the side or rear of the property. The absence of high fences and hedges at the front also makes observation easier so these should not exceed waist height.

Rear gardens should be fully enclosed. It may be that the occupants wish their garden to afford them some privacy so a wall or solid fence is selected.

Most timber fences, no matter how solid will allow a person close to the fence to see through to the other side, however, such a barrier would offer the intruder concealment once he has ascertained that no one is in the property, he would then be able to effect an entry without being seen by others.

Alternatively, wire fences, always place the intruder at risk of being seen, even at night, especially if the area is illuminated.



Plate 6.8 shows a fence which isolates a garden from a playing field. The gate to the right is barred by a cross piece which prevents the gate being opened by a kick or shoulder charge.

#### 6.4.2. Windows

These should allow the occupants a clear view of the approaches to their dwelling. This allows the occupant to be familiar with what goes on around

their home and to notice anything unusual or suspicious. It also puts a potential burglar in a vulnerable position which could result in him being seen by one of the occupants in the immediate area. Bay or oriel windows allow the occupant the best means of observation. End or corner houses should have windows which will allow the occupant observation of the end area. There should not be a brick wall which will allow a burglar to approach the dwelling unobserved.

As 49% of burglars gain entry to a dwelling via a window (See Chapter 1.5) careful consideration must be given to the design, siting and specification of windows their hardware and glazing (See Appendix B).

#### 6.4.3. Area Around a Dwelling

The area around dwellings is very important. Through routes should be avoided and all paths to an area should be for the use of the occupants of that area. Estate layouts which allow short cuts from one area to another should not be used as these give an intruder a reason to be there and a possible escape route.

The area should be in sections which belong to the occupants who live in it and which make any strangers who have no reason to be there noticeable. Some form of barrier should make any person aware that they are entering an area belonging to another person.

Trees, shrubs or other buildings should not allow a person a concealed route to the building thereby allowing them to breach security. The area

should be well lit at night thus avoiding concealment behind bushes or by shadows cast at night by inadequate lighting.

#### 6.4.4. Garages

These should not be sited so that they give concealment to a potential burglar. Rear or side entrances should not be concealed by garages or outbuildings, but should be able to be seen by neighbours and/or passers by.

On many housing developments garages are sited away from the dwellings the intention of which is to keep vehicles away from the area of the dwellings, thus allowing children to play in safety. This does however, have four distinct disadvantages from the security point of view, these are:

- 1) garages tend to be built where they are isolated and out of view. This gives the criminal a better chance of breaking into the garage without being detected.
- 2) it also makes the occupant walk some distance from the garage to his or her home. This is made worse if the routes are dimly lit.
- 3) it is unlikely that residents know all those who use the garages so strangers are less likely to be noticed.
- 4) it removes the feeling of the area belonging to them and thus they feel it is not their responsibility, that they are in fact in some one else's

territory.



Plate 6.9 shows the entrance to an isolated area, the high hedges offering concealment to the criminal.

## 6.5. Multi-Storey

A major problem which is particularly dominant in multi-storey blocks of flats, is the conflict between security and fire regulations. Security requires the minimum number of exits, while fire regulations require a number of exits which can be opened at all times.

With regard to multi-storey housing it is imperative that security is considered at the design stage in order to avoid producing buildings in which, because of the high crime rate, people do not want to reside. Also the more a building gets a reputation as an easy target for the burglar, the more it will be burgled.

In the 1960's little thought was given to the security or the social aspects of the design of a multi-storey building. The main criteria was that of cost. This was especially true of the public sector who built blocks of multi-storey flats for letting and sited them together on estates. The same can be said of the low rise sprawling developments which are joined by passageways. Some of these developments have over the past few years turned into places where crime and fear are every day occurrences.

Serious rioting has occurred in a number of inner-city areas, the most notable was that at the Broadwater Farm Estate in Haringey, North London in October 1985. Although the primary cause was unemployment and racial tension, the problems experienced by the police in dealing with the disturbance was made more difficult by the physical layout and design of the estate. Terraces of flats with deck access are linked by a labyrinth of walkways and underground passages. A situation which makes the

perpetration of most crimes and the escape thereafter a simple matter.

Alterations were carried out on the Mozart Estate in North Paddington which involved the demolition of four upper-level walkways and the splitting up of blocks by partitioning corridors. The estate was also given ground-level footways which created a more traditional streetscape. These alterations were found to be effective in reducing crime on the estate (26).

Vandalism is often considered purely antisocial and not a crime in itself. However, studies have shown that vandalism and the conditions in which it occurs may sow the seeds for more serious crime (27).

Vandalism usually occurs at the point of entry, by doors, lifts and lobby areas. Remedies include improving the access and by providing a receptionist or entry phone system. Lighting levels should also be improved.

Physical security hardware and security guards will not by themselves reduce crime. The design of the building and its layout help to shape the attitudes of the residents and is equally important as the functional design aspects. Dimly lit passageways with places for a criminal to hide will only invite problems and can have a significant effect on the buildings acceptability and the residents attitudes and behaviour. These factors are equally important for both multi-storey and low rise developments.

## 6.6. Summary

Architects and designers should assess the area in which a dwelling is going to be built prior to design in order to ascertain the likely risk of it being burgled. If the risk is great additional security measures will need to be considered.

It is important that the design and layout of any development considers security. By defining territory and allowing residents to keep their area under surveillance any stranger becomes noticeable.

Such a layout must ensure that no concealment is given to potential burglars which could allow them to effect an entry unobserved, nor should they be given a legitimate reason for being in an area by means of merely passing through.

## REFERENCES

1. Gatepain R J & Charlett A J, Safe as Houses? Architect and Surveyors Journal, March 1990.
2. Newman O, Defensible Space, People and Design in a Violent City, London, Architectural Press, 1972.
3. Jacobs J, The Death and Life of the Great American Cities, Penguin, Harmondsworth, 1965.
4. Secured by Design Information Pack, South East Region Senior Crime Prevention Conference 1989.
5. Authors Research interviews with House builders.
6. Op. cit. Ref 2.
7. Kirkholt Burglary Prevention Project, Crime Prevention Unit Paper 13, Home Office, 1988.
8. Ibid.
9. Op. cit. Ref 2.
10. Coleman A, Utopia on Trial, Hilary Shipman, 1985.
11. Smith S J, Design against Crime? Beyond the Rhetoric of Residential Crime Prevention, Property Management Vol5 No2, 1987.
12. Roudabush D E, The need for Security, from Handbook of Building Security Planning and Design, Ed. Hopf P, McGraw Hill, 1979.
13. Op. cit. Ref 4.
14. Op. cit. Ref 2.
15. Gatepain R J & Carter W G, Security Regulations and Housebuilding, Architect & Surveyors Journal, June 1990.
16. Authors Research, Interviews with Planners.
17. Op. cit. Ref 1.
18. Ibid.

19. Hugh M & Mayhew P, Taking Account of Crime: Key Finding from the 1984 British Crime Survey, Home Office Research Study No85, London, HMSO, 1985.
20. Ibid.
21. Op. cit. Ref 2.
22. Op. cit. Ref 3.
23. NHBC Guidance on how the security of new homes can be improved, 1986.
24. Ibid.
25. More Sensitive Design Criteria, House Builder Journal, October 1987.
26. Parker J, Standing Conference of Local and Regional Authorities of Europe, Urban Violence and insecurity: The role of local policies, Strasbourg, 1986.
27. Tackling Vandalism, Home Office Research Study No. 47, London, HMSO, 1978.

## CHAPTER 7

### 7. CODES AND REGULATIONS FOR SECURITY

#### 7.1 Introduction

In 1972 the city of Concord, California, USA, introduced a code which imposed minimum standards with regard to the security of locks, doors, windows and all potential points of illegal entry for any buildings which from that date are constructed or substantially remodelled. The code works along the same lines as the Building Regulations or Fire Regulations whereby laying down a minimum standard which must be achieved in the way of materials and workmanship.

This move by Concord was soon followed by a number of other areas and today in California, all building designs and development plans are required to be inspected with a view to security and the crime patterns of the location in which construction will take place.

As in Britain, the police in Concord will provide an Official to conduct security surveys of existing homes and to identify substandard locks, doors and windows. The Concord Police Department are of the opinion that this is a poor use of police manpower and that it would be better utilised by working with city officials devising mandatory security measures at the time of construction (1).

The police department in Concord, stated that there is value in having police officials meet with the City's planning department when new developments are

planned in order to make recommendations and suggestions concerning security. This is something that most of the Police Forces in Britain do and certainly the Lincolnshire Police, who have been liaising with a number of local authority planning departments have found to be beneficial. In California it is the city's building official and not the police department which is responsible for the enforcement of the security codes.

The introduction of the codes in California did bring criticism from builders and developers who maintained that it increased the expense of a project and involved another possible source of bureaucracy (2). The Concord police state, however, that their building security code has had a positive and beneficial effect on assisting in the prevention of burglaries.

## 7.2 Enforcing Codes in England and Wales

It has been suggested (3) that it would be a simple matter to introduce a similar code in England and Wales by making it part of the Building Regulations and introducing an Approved Document on Security. Such a document would be reasonably simple and inexpensive to produce. In the Building Regulations there already exists an established method of enforcing standards in building. Such a document could also relate to other types of buildings as well as dwellings. This would then make the Local Authority or other approved body responsible for ensuring that the standards of security are maintained.

The introduction of such a code in this country would not prevent all burglaries, in the same way that the Regulations appertaining to fire do not prevent all fires. What it does is to cut down the risk. It is a fact that the majority of burglaries are committed by opportunists; if the opportunity is denied in some way, so too might the risk of burglary.

It can be argued that such a scheme will not cut down crime but merely displace it, ie. to cause the burglar to move to an easier target. However, experience in the USA has shown that by increasing security it forces the opportunist to take risks which are greater than either his ability or his perception of a justifiable reward.

It is suggested by the author that unless commerce and industry is legally obliged to undertake change, ( unless there is an economic advantage ) it seldom happens. Aspects of security are likely to be no exception. Unless minimum standards are laid down by law, the majority of builders will

continue to install security fittings which might be regarded as barely adequate. The approach adopted by some builders is to build as cheaply as possible in order to be competitive. Further, research by the author (4), has shown that some house buyers are unwilling to meet the additional cost, because they have an indifferent attitude towards security matters.

Unless regulations are introduced, many house builders will not incorporate security whether the house buyer believes in the concept of security or not.

The introduction of minimum security standards could reduce the instances of opportunist burglaries, thus saving the resources of the police, of the courts and the prisons. On balance, the cost of introducing and enforcing such regulations is potentially very cost effective. These standards must, however, be adhered to and not just Codes of Practice. The British Standards Institution introduced BS 8220 in 1986 to cover security though its contents are not widely known, nor are its principles widely followed within the speculative house building industry.

Despite the introduction of security measures it is unlikely that the professional burglar will be deterred. It would not be designed for that purpose; it would be aimed at the 90% of opportunists.

The author wrote to the Home Office in December 1990. The purpose of the letter was to obtain the Government's reaction to the suggestions set out in this Chapter regarding mandatory regulations for security of dwellings. Although an acknowledgement was sent to the author no response was received, despite additional letters sent in April and July 1991. The absence of a reply indicates to the author either the unwillingness of the government

to make a reponse on the matter, or the inefficiency of a government department that needs over seven months to answer its correspondence.

### 7.3 Adoption of Standards

Before any standards can be laid down in England and Wales, research is needed in order to determine how strong certain building components will have to be made in order to withstand an attempted forced entry.

In the USA research has been undertaken for several years to determine these standards and in a number of States positive action has been taken. In 1971 California introduced a Bill which required the Department of Justice to develop, recommend and continually review building security standards in order to reduce the risk of burglary.

Various testing programmes have been undertaken in the USA since 1974 by the California Crime Technological Research Foundation (CCTRF) to determine the capabilities of doors and windows in dwellings and light commercial buildings to withstand forced entry. The report published by CCTRF (5) gave the amount of force which would cause a failure of the material or component. Los Angeles has a code which lays down resistance ratings in foot pounds of energy for windows and sliding doors.

The National House Building Council (NHBC) have started to address the problem of security in dwellings. They introduced security measures in January 1989 which must be adopted for all new dwellings. The measures point to a standard of security fittings and design layout. Municipal Mutual Insurance Limited also specify standards of security in their Technical Manual (6).

#### 7.4 Cost Factors

The cost of installing a standard of security deemed adequate by the police will depend on the actual standard selected and also on the supplier of the item, for the same item can vary dramatically from different sources.

The prices included in this assessment are taken from a builders merchant on the 12 April 1991 (7). It would be possible to obtain the item listed cheaper than indicated if discounts are negotiated.

The pricing illustrates the cost of the security fittings for different items.

Window 1200 wide 900 high	Softwood	Hardwood
	£64	£110
Mortice Lock 75mm	2 Lever	5 Lever
	£5	£17
Window Lock	£4	
Door Bolts	£2	
Door Chains	£4	

The cost of a burglar alarm and its installation for a two bedroom semi-detached house would be between £200 and £1100 depending on the system chosen.

The cost of installing improved security for a two bedroom semi-detached house, including an alarm, would be in the region of £350 to £500. In a property costing £70,000 this would amount to approximately 0.5% of the cost of the property.

A builder who offered an improved security package as an extra on an estate of 40 properties found that only 4 purchasers wanted to have the extra security installed (8).

In cases where security has to be upgraded to conform to insurance requirements this can result in fitted hardware specified by the architect being replaced. This results in additional cost to the client which is contrary to the architects intention to keep the clients expenditure to a minimum.

## 7.5 Secured by Design Initiative

The Police have introduced an initiative to encourage house builders to adopt upgraded security measures in new houses. The initiative is called "Secured by Design" and originated in the South East of England, it is planned, however, to introduced it nationwide by the end of 1991. The Scheme concentrates on estate design, physical security, lighting and intruder and smoke alarms. Although at present the scheme concentrates on new dwellings it may extend to incorporate commercial properties and refurbishment on local authority housing estates.

The purpose of the "Secured by Design" campaign is to bring together the police, developers, architects, insurance companies, local authorities, the supply industries and the members of the public. The aim is to make them aware of the factors which reduce crime and to increase co-operation for this purpose, thus reducing fear of crime and the actual levels of crime.

Participating developers will have their plans vetted by the police who will make any recommendations they feel are required. They will then allow the developer to use the "Secured by Design" logo to advertise and promote the sale of their dwellings.

The initiative was launched in Lincolnshire in October 1990 and by December 1990 the response had been encouraging (9) with several applications being processed throughout the county.

This is a positive introduction to security in dwellings. However, it should be looked upon as the first steps towards the introduction of minimum

security requirements for all dwellings, with legislative power to enforce these standards (10). Minimum standards which in the United States have been in effect for 18 years.

## 7.6 Summary

A mandatory set of Codes on security has been in existence in the United States for 18 years. When first introduced there was criticism from builders and developers that the Codes would increase the expense of a project, though the Police state that it has had a positive and beneficial effect in preventing burglaries.

The Codes are enforced by the City's Building Official in the same way that the Building Regulations are enforced in England and Wales.

It would be possible, therefore, for a similar Code to be introduced in England and Wales under the Building Regulations, whereby standards could be set and included in an Approved Document on Security.

The machinery for establishing standards is being laid down by the NHBC, Municipal Mutual and the police in their "Secured by Design" initiative. This would make the introduction of an Approved Document of standards a relatively easy task.

The cost of installing improved standards of security would be less than 0.5% of the cost of the dwelling.

## REFERENCES

1. Letter from Concord Police Department written to the author Jan 1989.
2. Roudabush D E, The Need for Security from Handbook of Building Security Ed. Hopf P, McGraw-Hill, 1979.
3. Gatepain R J & Carter W G, Security Regulations and Housebuilding, Architect & Surveyor, June 1990.
4. Authors Research, Interviews with House Builders.
5. Doors and Windows, from Handbook of Building Security Ed. Hopf P. McGraw-Hill, 1979.
6. Technical Manual, Municipal Mutual, Section 6, 1989.
7. Jewson Price Guide, August 1990.
8. Op. cit. Ref 4.
9. Coates T M, Chief Superintendent, Lincolnshire Police, Presentation at Crime Prevention Seminar, 11 December 1990, The Lawns Conference Centre, Lincoln.
10. Op. cit. Ref 3.

## CHAPTER 8

### 8. SURVEYS CONDUCTED

#### 8.1. Introduction

Surveys were undertaken to ascertain the attitudes towards security by those connected with the building industry. This was achieved by conducting questionnaire surveys and interviews which were addressed to builders, architects and town planners and with some of those responsible for their professional education.

The questionnaires were devised and a pilot study was conducted in each case, details of which will be given in the appropriate section below. Each questionnaire was followed up in a number of instances by interviewing a random selection of those who returned the questionnaire. The questionnaires and interviews are analysed and the findings discussed.

Interviews were conducted with representatives from the following groups of people: architects, house builders, town planners, police officers, probation officers, security experts, manufacturers and retailers of security equipment, estate agents, burglars and lecturers.

All interviews were conducted informally. This was considered to be particularly important when interviewing convicted burglars. The interview of burglars was conducted at Lincoln Prison where the author taught on one evening a week. Because of this previous contact, he was able to gain their confidence and establish a rapport with them. No formal record was kept as

to the number of burglars interviewed as the author had discussed burglary with convicted burglars over the period of 8 years that he taught at the prison, thus gaining an insight into the motives and methods of the burglars.

The author endeavoured to look into what the purchaser wanted from security by producing a questionnaire aimed at the potential house purchaser. The response to this, and the co-operation of estate agents in obtaining replies, were negligible which resulted in the survey being abandoned. This led the author to ask four estate agents why they had not contributed to research which could improve their knowledge of the public's requirements and consequently improve the marketability of the properties they were offering for sale. All four estate agents explained that potential purchasers did not want to fill in questionnaires. When questioned further on this point none of the estate agents had actually asked any potential purchasers to fill in the questionnaire.

## 8.2. Survey of House Builders

### 8.2.1. The Purpose

The purpose of the questionnaire to house builders was to ascertain:

- 1) If house builders were aware of the magnitude of the problems with burglary as it affected dwellings both on a national and a local level with regard to the number of incidents and the cost involved.
- 2) The extent to which security measures are included in the dwellings they were constructing.
- 3) To determine the extent to which security measures have been included in their development.

### 8.2.2. The Survey

The author conducted a pilot study of builders in the Lincoln area by sending questionnaires to 12 local house builders enclosing two questionnaire forms to each. The purpose was to enable builders with more than one site to respond to two of their sites. Builders were selected equally from a cross section of small and volume builders. Seven of the builders completed the questionnaires giving the pilot study a 56% response.

On the basis of the pilot survey the questionnaire was modified to remove some ambiguous wording. Subsequently, 100 questionnaires were posted to

house builders in the Midlands in September 1988 ( See Appendix C for questionnaire).

The questionnaires were sent to builders who were known to academic staff of Nottingham Polytechnic as being sympathetic towards education and research and who it was thought would actively support this research. This fact could have had an effect on not only the number of responses, but also the comments given for they indicated an interest in the advancement and improvement of the industry.

The number of responses to the questionnaires was 76 (76%). The results obtained showed that those who did reply had a favourable attitude towards security. A number of reasons could be inferred by those who did not reply, possible among these being that they:

1. did not receive the questionnaire. (No check up system was adopted)
2. did not take the time to complete the questionnaire.
3. did not wish to divulge the information sought.
4. had an indifferent attitude towards security.

### 8.2.3. The Questionnaire

Question 1 asked how many units were being built on the site. The size of the housing developments surveyed ranged from a single dwelling to 350 units. Table 8.2.1 shows the number and percentage of units being built on each site.

Number of units	Less than 20	21 - 50	51 - 100	Over 100	Total
	16 (21%)	28 (37%)	20 (26%)	12 (16%)	76 (100%)

Table 8.2.1 Number of units being built on each site

The purpose of this question was to ascertain if a correlation existed between the size of the development and the incidences of site security problems during construction (See response to question 18). No correlation was found.

Question 2 asked what type of units were being built. Starter, middle range or executive dwellings. The purpose of this question was to determine if the type of dwelling being built has any effect on the standards of security installed. 22% of sites were building starter homes, 64% middle range and 50% executive dwellings. Some sites combined types of dwellings thus explaining the total percentage figure.

Question 3 asked where the site was situated, inner city, outer city, village or country side. 44% were in the outer city, 42% in a village, 11% in the inner city and 3% in the country side. No correlation was made between the situation and the standard of security included.

Question 4 asked whether the company was aware of the home security campaigns run by the police and the Home Office. 86% of the companies were aware, 14% were not. The 14% is quite a large proportion considering that they are of a group of people who should be aware of such a campaign. This indicates that the police must make more efforts to concentrate on builders who play such an important role in home security.

Question 5 asked if the builder is aware of the magnitude of break ins and burglaries from dwellings. 75% were, 22% were not, 3% did not respond to this question, though no explanation can be given for this omission.

Question 6 asked what type of door locks are fitted as standard in the properties. 83% fitted 5 lever mortice locks as recommended by the Police (1) and the NHBC (2). 14% fitted 3 lever locks, 3% fitted some other form of lock, though the standard was not specified. This survey was carried out before the introduction of the NHBC and Municipal Mutual regulations (See Chapter 7.3) The survey consequently justifies the introduction of such regulations. Should the survey have contained a greater number of starter units it is possible that the 14% who fitted 3 lever locks would have been higher.

Question 7 asked if the builder fitted any additional security devices. 89% did, the main additional devices being window locks, which were fitted on all types of dwellings and alarm systems, which were mainly on the executive dwellings. Many manufacturers are now, however, fitting window locks as standard on their windows.

Question 8 asked if the answer to question 6 and 7 depends on the type of unit being built. 52% replied yes, 44% no, 4% did not respond. Builders who responded in the negative could include 3 lever locks in all their properties, or they could include 5 lever locks, window locks and burglar alarms as standard in either starter, middle range or executive dwellings. The question was not specific on this point.

Question 9 asked if security was part of the brief given to the architect or designer of the dwellings. 64% of the builders gave no brief on security prior to design, 30% had, 6% did not know.

Question 10 asked if the architects or designer visited the site with regard to security in the design and layout of the dwellings. 25% did visit the site prior to design. The fact that 75% of designers and architects did not visit a site prior to the design could indicate a lack of importance placed on pre-design security surveys by architects and designers.

Question 11 asked if the builder felt the design and layout of the dwellings with regard to security was very good, good, satisfactory or poor. 69% felt it was either good or very good, 31% felt it was satisfactory, none felt it was poor. Visits by the author to six of the sites selected at random found that two of them did in fact have a poor design with regard to security.

Question 12 asked if the builder or architect had taken specialist advice on aspects of security. 80% had not, 14% had, 6% did not know.

Question 13 asked if the builder had sought advice on the incidences of break ins in the area prior to developing. 97% had not, 3% had.

Question 14 asked if the area of the development suffers from high incidences of break ins or burglaries. 67% replied no, 33% did not know, none replied that it did. Although 67% replied that the area did not suffer from high incidences of break ins or burglaries, the response to question 13 indicated that 97% had not sought advice on incidences of break ins or burglaries in the area. This, therefore, casts doubt as to the reliability of the information gained from this question.

The replies to question 12, 13 and 14 indicate that there is a need for there to be contact between house builders and the police.

Question 15 asked if potential purchasers enquire about incidences of break ins or burglaries in the area and the standards of security in the dwellings. 3% enquired about burglary in the area. 39% of those surveyed indicated that potential purchasers had enquired about the standard of security in their dwellings, although no actual numbers are available as to the percentage of customers who had asked. This does indicate, however, that the public is becoming more security conscious.

Question 16 asked if the builder gives the potential purchaser the option of improved security. 64% did, 36% did not. The type of dwelling may have an influence on whether a choice is given (See response to question 8).

Question 17 asked if any purchaser asked the builder to install improved security measures. 44% replied yes, 56% no. This confirms an interest in security by the public and indicates some knowledge of crime appertaining to housing by a proportion of house purchasers.

Question 18 asked if the builder had had any trouble with site security during construction. 67% replied yes. The purpose of this question was to gain some indication of the area, though the response to question 14 would have indicated that very few problems with security would have been encountered. No correlation was found between the situation of the site and the incidences of security problems during construction for the inner city, outer city or village. None of the respondents who were building in the countryside had experienced any problems with site security.

#### 8.2.4. The Findings

The detailed findings of the survey are shown on the questionnaire in Appendix C.

The findings of the survey may give a better impression of the attitude of builders than is perhaps the norm, for builders who are aware that their standards of security may be ineffective, will be less likely to complete and return the questionnaire.

The survey indicates that builders are becoming aware of the need for security in dwellings and that they are more prepared nowadays to improve the standards of security which they incorporate in their dwellings. This improvement may be due to the campaigns run by the police and the Home Office, or it may be due to the security requirements of the purchasers. Certainly the introduction of the requirements by NHBC and Municipal Mutual (See Chapter 7.3) will also have a major effect.

To obtain more detailed information on house builders attitudes interviews were conducted with twenty house builders. 90% of those interviewed confirmed that the main reason for them improving their security measures was the regulations which had recently been introduced by the NHBC. The house builders interviewed stated that the main criteria they use in setting standards is profit.

One house builder had incorporated alarm systems costing £500 per house in each of his 20 houses. The rise in the mortgage rate resulted in a

reduction in the number of people wanting to purchase their own home. Consequently he was unable to sell these dwellings, the fact that he had included alarm systems had resulted in an additional expense of £10,000, as far as he was concerned he did not feel that this had been a worth while extra, although this was from a financial aspect and not from that of security.

#### 8.2.5. Conclusion

House builders are becoming aware of the magnitude of the problem of burglary in dwellings. However, cost seems to be the major factor in determining the standards of security employed by speculative house builders, though the majority of those responding to the questionnaire do fit 5 lever mortice locks as standard.

It appears the design of dwellings, with regard to security, is given little consideration, either at the design stage, or even if problems of security are encountered during the construction process.

Since the undertaking of this survey ( September 1988 to June 1989 ) the 'Secured by Design' campaign has been introduced ( See Chapter 7.4.). To what extent this will influence builders is unknown ( See recommendations in Chapter 9.2).

### 8.3. Survey of Educational Establishments

#### 8.3.1. The Purpose

A survey was undertaken of the institutions responsible for the education of the Building Industry's professionals to ascertain what aspects of security, if any, were being included in the curriculum.

The purpose of the survey was to ascertain:

- 1) If first Degree or National Diploma courses appertaining to the design, planning and building disciplines incorporated aspects of security relevant to dwellings or other types of building.
- 2) How much importance is placed on security by the educational institutions responsible for the training and education of the building professionals.

#### 8.3.2. The Survey

A questionnaire, ( See Appendix D ) was posted to 12 Universities and 19 Polytechnics who conduct first Degree or Diploma courses in planning, architecture and building. The survey was conducted between May and September 1990 and resulted in 22 responses ( 71% ) of which 18 ( 58% ) were of use in the research.

### 8.3.3. The Findings

The survey found that those who did include security in their courses, did so mainly from the aspects of design. Some courses covered security in buildings but not in dwellings, while other concentrated only on dwellings. For the majority of courses the inclusion of security in the curriculum occurred within the last 5 years. This seems to indicate that the Educational Institutions are accepting the importance of security as it affects the building industry. The details of the responses appertaining to the inclusion of tuition is shown in Table 8.3.1.

Responses	Architecture	Building	Planning
-----------	--------------	----------	----------

Number of Institutions	9	5	4
------------------------	---	---	---

Number of Courses	14	7	6
-------------------	----	---	---

Question.

Does the course contain tuition  
on aspects of security?

Responses per course

	YES	NO	YES	NO	YES	NO
In Buildings	9	5	3	4	2	4
In Dwellings	9	5	2	5	4	2

Question.

When was security introduced  
into the course?

Responses per course

Up to 18 months ago	4		
2 to 5 years ago	4		
Over 5 years	2	2	2

Table 8.3.1. Responses by Educational Institutions

#### 8.3.4. Interviews

Interviews which were conducted with building designers and town planners, in order to ascertain the level of knowledge related to security matters, found that of the 6 planners interviewed none had received any tuition in security. Of the 20 architects and designers interviewed, two had received any formal education in security, these two having recently finished their formal education. The remainder, having been qualified for a number of years had taught themselves.

The levels of attainment reached by self tuition was quite varied and depended on the type of work the person was involved with. Though, irrespective of this level, all persons questioned believed that their knowledge was satisfactory. Further questioning ascertained that knowledge in many aspects of security was very limited.

This indicates that levels should be laid down by the professional bodies or validating qualification establishments in order to ensure that personnel involved in the specification and design are adequately informed of the factors which affect security.

#### 8.3.5. Professional Institutions Views

Letters were written to the Royal Institute of British Architects (RIBA), Chartered Institute of Builders (CIOB), Architects and Surveyors Institute (ASI), Incorporated Association of Architects and Surveyors (IAAS) and the Royal Town Planning Institute (RTPI) for their views on security and the instructions provided to members on security in buildings.

The ASI are very interested in the question of crime and the design of buildings. Their President and Immediate Past President, together with some of the Regional Chairmen, have been involved in the "Secured by Design" initiative (See Chapter 7.4).

The RIBA produced a publication in liaison with the Institute of Housing and Crime Concern in 1989. The publication which is available to its members is entitled Safety and Security in Housing Design (3).

The IAAS, like the other Institutions, does not have any mandatory scheme for training its members in security. It does, however, support any moves to increase awareness of the need for design with respect to security.

The CIOB stated that they had no firm views on the subject of crime and the design of buildings.

A response was not received from the RTPI.

#### 8.3.6. Conclusion

Educational Institutions have, particularly over the last 5 years, introduced security in the curriculum for courses for architects, builders and planners.

The Professional Institutes do have an interest in security though do not specify that their members receive any education in the subject.

#### 8.4. Survey of Householders

From the research carried out by the author, ( See Chapters 1 and 2 ) it appears that the chances of a dwelling being burgled is to a large extent dependent upon the design, layout of a dwelling, its geographical location and its positioning within an area (4).

Taking this hypothesis the author postulated that it would therefore be possible to assess the likelihood of a dwelling being burgled according to the physical attributes, the design features and the siting of the dwelling. If such should be the case a scale of vulnerability could be devised to assess, at the design stage, if a dwelling would be a likely target for a burglar.

The author therefore compiled a list of a number of design features found to have influenced burglars in their decision in selecting a target for a burglary, as discussed in Chapter 2 and produced a questionnaire to test the hypothesis. Certain factors, such as doors and windows being left open and occupants being away, will affect the burglars decision, so the questionnaire produced included means of determining if a burglary resulted due to these factors, as this could invalidate the findings of a survey.

Once the questionnaire was produced a pilot study was conducted in the Lincoln area with the aid of the local Neighbourhood Watch Scheme organisers. The study consisted of 90 questionnaires being distributed to householders in the north side of the city by giving the questionnaire to each Neighbourhood Watch Co-ordinator. Questionnaires were distributed to households to try to assess if any correlation could be found between the

design and situation of a dwelling and the risk that that dwelling had of being burgled.

One flaw in the first set of data obtained was that all data was obtained from members of Neighbourhood Watch. This indicated that the householders had an interest in the protection of their property and as such was not a truly representative cross section of the community. It was decided therefore not to include these in the main survey as the percentage would influence and perhaps distort the final findings.

The pilot study resulted in a number of modifications to the questionnaire as some of the questions were found to require subjective responses, also some respondents were not sufficiently knowledgeable on security matters to answer them. ( The final questionnaire is shown in Appendix E ).

The main survey which consisted of 300 questionnaires was then conducted and covered a random selection of areas in Lincolnshire, Nottinghamshire and Derbyshire.

In order to ensure a cross section of respondents, questionnaires were given to occupiers of all types of dwellings from large detached houses to terraced situated on council estates.

#### 8.4.1. The Questionnaire

The questionnaire was divided into three sections:

Section 1 sought to determine how long the householder had lived in their current dwelling and if they had been burgled or had an attempted burglary in that time.

Section 2 sought information on the circumstances of the burglary, if any had occurred.

Section 3 dealt with the physical aspects of the property and tested the vulnerability of the dwelling.

Of the three hundred questionnaires which were distributed in the main survey, 78 ( 26% ) were returned, 3 responses were spoiled in that they were incorrectly or not completely answered.

#### 8.4.2. The Computer Program

A computer program was written by the author to enable the questionnaires to be processed, its purpose was to compare the design features by giving each response a numerical value according to the features of the dwelling which it was postulated made a dwelling vulnerable.

The program was written ( Using Turbo Pascal) in order to:

1. Reduce the time taken to assess each questionnaire.
2. To make an adjustment in the score for the questionnaire due to a misunderstanding frequently occurring in Questions 16 & 17 ( See Appendix

E ). These questions were too similar and could distort the score if an adjustment was not made.

3. To award additional weighting scores if a number of factors exist in one dwelling.

4. To compare the results of the vulnerability score and to determine whether or not the dwelling could be classed as vulnerable.

5. To compare the vulnerability classification obtained from the score with whether or not the dwelling has been burgled.

The program listing is shown in Appendix F.

The program is in a simple form but could be improved to keep a record of the number of dwellings assessed and the results as a number and a percentage. This could then display the results of any dwellings tested as a batch for statistical purposes, thus avoiding further calculations to ascertain the percentage of:

i) dwellings found to be vulnerable.

ii) correct and incorrect forecasts.

The program could be utilised to assess the vulnerability potential of new dwellings prior to recommendations in connection with the 'Secured by Design' initiative, or to help Insurance Companies to assess the risk of a dwelling being burgled.

In order to illustrate how the Scale of Vulnerability could be used in practice an assessment of the vulnerability of two dwellings is made using the developments shown in Figure 6.1. and 6.2.

One dwelling selected on Figure 6.1. ( highlighted in pink ) and one dwelling on Figure 6.2. ( highlighted in yellow ) are used in the assessment. Supplementary information on each of the dwellings, the completed questionnaire and the computer printout is shown in Appendix G.

#### 8.4.3. The Weightings

The relative weightings were established from the findings of this research as to the factors which influenced the choice of a target by a burglar as discussed in Chapter 2. The weighting had also to ascertain if a number of related factors would increase the vulnerability and allocate additional values, for not all features would have an equal bearing on whether or not a burglar would select a particular dwelling as a target. As well as giving each design feature a value it was thought necessary to give additional values if a number of factors existed; for one factor alone could not be taken in isolation. ( The factors considered important which act together, and the score for each question are shown in the computer program listing in Appendix F).

It is known that burglars do not base their selection on just one factor. It became apparent when assessing what burglars look for when selecting a target ( See Chapter 2 ) that a number of features were given greater

importance. It was therefore important to weight the score of these more heavily than factors which were of less importance in the selection of a target. Consequently each factor was given a score according to its importance for the burglar or the effect it was likely to have in determining if a dwelling was selected as a target.

A value on the scale of vulnerability would then be given to each questionnaire which would determine if that dwelling could be expected to be selected as a target. This could then be compared with whether in fact it had been burgled in the past.

Of the 10 properties out of the 75 which were burgled, and which had a score indicating that the dwelling was not vulnerable, none had a burglar alarm. Not one of the properties which had been burgled had a burglar alarm at the time when it was burgled. This fact is something which was later emphasised by the Lincolnshire Police who indicated that none of the properties in the previous year which had been burgled in the city of Lincoln had an alarm. This fact led to weighting the alarm question more heavily for it appears that a burglar alarm has an appreciable effect on whether or not a dwelling is selected as a target by a burglar.

A score would be allocated to be either a plus or a minus number in that if a dwelling had a burglar alarm it would have a positive effect in reducing the likelihood of that dwelling being selected, whereas if it did not have an alarm it would increase its chances of being selected for burglary. The greater the importance of each factor, the greater would be the numerical value either as a plus or a minus.

The scoring of each question was amended and a number of runs were then conducted in order to test the theory and the system of scoring. Adjustments were made to the scores to each question until the results obtained produced a good success rate in predicting if a dwelling had or had not been burgled. The ideal result would have been for the prediction to verify that the dwelling had not been burgled or vice versa.

#### 8.4.4. Final Results

Of the 75 questionnaires tested using the scoring system, in 42 cases the scale of vulnerability correctly forecast if the property should have been burgled, while 33 were forecast incorrect.

Of the 33 which were incorrect, 23 had a score which indicated that they were vulnerable yet had not been burgled. This could be due to a number of reasons eg. the fact that there was some one at home most of the time.

The author was more interested in those dwellings which the scale of vulnerability indicated should not be a likely target for burglars, although they nevertheless had been.

Of the 10 dwellings which should not have been burgled 5 householders were away on holiday when the burglary occurred. Four of the 10 occurred either during the evening or at night, of these, 2 gained entry through either a door left unlocked or an open window, 1 was away on the day of the burglary.

A rerun was undertaken on each of the ten dwellings after ascertaining if any improvements were carried out on the security of the property after the burglary. This resulted in two of the properties being reclassified as being vulnerable for it was discovered that security had been improved after the burglary, prior to the burglary the factors which the dwelling had at the time would have given it a vulnerable classification.

#### 8.4.5. Conclusions

Out of the 75 questionnaires assessed, if the 2 which left a window or door open are excluded, 89.3% of the dwellings which the scale of vulnerability indicated as being unlikely targets had not been burgled. Conversely 10.7% had been burgled when the scale had indicated that they were not vulnerable.

Although this is a small sample it does indicate that if a dwelling is assessed using this scale of vulnerability, there is nearly a 90% chance that if the scale indicates it is not likely to be burgled, it will in fact not be.

This suggests that there are a series of factors which determine the vulnerability of a particular property and indicates the likelihood of it being burgled or not.

## REFERENCES

1. Practical Ways to Crack Crime, 2nd Edition, Home Office, HMSO, 1988.
2. NHBC Guidance on How the Security of New Homes can be Improved, NHBC, 1986.
3. Bone S, Safety and Security in Housing Design, Institute of Housing and Royal Institute of British Architects, 1989.
4. Gatepain R J & Charlett A J, Article: Safe as Houses? Architects and Surveyors Journal, March 1990.

## CHAPTER 9

### 9. CONCLUSIONS AND RECOMMENDATIONS

#### 9.1. Conclusions

##### 9.1.1. Introduction

This thesis set out to identify those factors which can affect the vulnerability of a dwelling to the commission of a burglary. Its purpose is to assist architects, builders, insurance companies, the police and the government in finding effective methods of reducing the likelihood of such crimes being committed.

Causative factors have been identified from previous research relating to the act of burglary. This investigated the social and psychological factors which appear to cause people to choose to commit the offence of burglary (Chapter 2). This will depend on the persons psychological make up and their personal circumstances, though many burglars attribute their transgression due to being out of work or in debt (Chapter 2.1). It has been shown (Chapter 3.2) that Socio-economic factors contribute to the likelihood of an offence being committed.

It is unlikely that while people in society have free will that there will be a crime free society. Even if the socio-economic conditions are improved and deprivation within society is

eliminated there will always be those who will rebel. Such people will for whatever reason choose to disregard the laws of the society in which they live.

### 9.1.2. Preventing Burglaries

In the fight against burglary society looks to the courts to hand out sentences to those convicted to deter them and others from committing such offences in the future. Certainly, burglars of dwellings can expect tougher sentences from the courts than those who burgle commercial buildings. Higher sentences appear to produce better results of preventing a person from re-offending than the alternative methods of punishment, though many burglars perceive the risks taken as small in comparison to the possible rewards (Chapter 4.1).

The success of the methods for treating offenders must bear a relationship to the amount of burglaries committed, for if offenders are going to re-offend due to the unsatisfactory methods of dealing with offenders it is a waste of money attempting to reform burglars rather than punish them. Efficient methods of ensuring that offenders do not offend again must be found.

Some writers on the subject of burglary offer no hope that a solution to the problem can be found. Waller and Okihiro (Chapter 3.5) state that: "burglary is something we must learn to live

with, and that the peaceful nature of the crime should be publicised in order to reduce fear and to increase insurance arrangements to compensate victims".

Some postulate that it is the individual who must take the responsibility for the protection of his property and that the police and the government should not be responsible for the protection of the public.

The government must, through the police, maintain the protection of its citizens. It must also show the criminal element that it is concerned with the situation regarding burglary. Failure to do this is likely to lead to an increase in the number of burglaries.

For a burglary to be committed it has been shown (Chapter 2) that it is necessary for the burglar to have motive, ability and the opportunity. The purpose of security in a building is to reduce these three requisites as this will reduce the risk of a building being burgled.

### 9.1.3. DESIGN

A way of improving security is to design-out crime for it has been found that the layout and design of dwellings affects the likelihood of a dwelling being burgled (Chapter 8.4). The access to a dwelling and the risk of being seen appear to be more

important to a burglar than the level of physical security employed (Chapter 2.2). By improving not only the standard of physical security devices incorporated in a dwelling, but also its design and siting in relation to other dwellings and facilities a potential burglar can be deterred.

If security is to be considered for a building it is more cost effective and practicable to consider it at the design stage rather than improve or alter a building at a later date. Security is not just locks and bolts but the whole concept of preventing the ingress of uninvited people into a building.

The measures included in a residential development must consider the location and the environment. A development near to an area of high risk (Chapter 1.4.3) ie. identified as a low income council housing estate, has been found to be at greater risk of being burgled (Chapter 2.2) for the majority of burglars live in this type of area and it has been found that the majority of burglars commit their offences within two miles of their home.

A security survey prior to design will ascertain the type of area and other factors found to be relevant to the likelihood of a dwelling being burgled (Chapter 6.3). This will enable the most effective methods of security to be incorporated in the development.

The fact that design factors contribute to the likelihood of a dwelling being burgled formed the basis of the research

hypotheses. It has been found possible to devise a means of allocating a numerical score to a dwelling according to the standard of physical security devices incorporated, the design and the siting of a dwelling (Chapter 8.4). The score obtained from a dwelling can then be used to predict the likelihood of that dwelling being burgled.

This proved to be the case as, of the sample tested, it was found that if the Scale of Vulnerability indicated that a property was unlikely to be burgled this proved to be correct in nearly 90% of the study. This indicates that there are a series of factors which determine the vulnerability of a property, and that this vulnerability can be assessed. The Scale of Vulnerability could be useful in assessing the risk by the Police for the Secured by Design Scheme, or by Insurance Companies with regard to the setting of premiums.

The Scale of Vulnerability has been developed as a computer programme. The programme offers designers, police and insurance companies a quick, simple and inexpensive way of assessing the possible likelihood of a dwelling becoming a target for a burglar. If the Scale of Vulnerability indicates that the dwelling is at risk the design features of the dwelling should be reassessed. The alterations in the design features, or the inclusion of security hardware ie. an alarm, can compensate for factors such as location which the designer has no influence over.

#### 9.1.4. Security Measures

Any crime prevention measures implemented must depend on the situation in which it is to be used, for crime rates and types will vary between areas only a short distance away from each other. The amount of security employed will therefore depend on the risk involved with a particular property and the value that the occupier places on the contents of the property.

Any methods of security employed would usually be cost effective and proportional to the risk involved, for the majority of people would be reluctant to spend large sums of money to protect relatively low value items. Many householders are reluctant to spend on any additional items of security (Chapter 8.2). This does not apply to the proportion of people who include security to provide them with peace of mind.

For many speculative house builders cost seems to be the major factor in determining the standards of security measures employed (Chapter 8.2.), although improved security can have a positive effect on Marketing and Sales (Chapter 6.2).

The survey conducted by the author found that house builders are improving security in dwellings (Chapter 8.1). House builders are more concerned, however, with the physical consideration rather than the design and planning aspects. The reason for the improvement is due to the standards laid down by the NHBC and Municipal Mutual. It is to these standards which all builders

must conform in order to obtain indemnity insurance and a ten or fifteen year warranty for their properties.

Minimum standards of security in dwellings should be laid down within the Building Regulations and enforced on all new or substantially remodelled buildings (Chapter 7). If such standards are laid down not only with regard to physical security, but also as regards design and planning, there is the potential to reduce the risk of the occupants of those dwellings becoming a victim of crime. The codes introduced in California in 1972 have reduced instances of burglary in dwellings (Chapter 7.1), a similar code in this country could have the same beneficial effect.

The government must consider the possibility of introducing mandatory codes. This could be done by the introduction of an Approved Document within the Building Regulations and enforced by approved building control inspectors.

#### 9.1.5. Awareness

Burglary prevention has over the last 12 years progressively attracted the interest of a variety of agencies (Chapter 3.1), both from an academic and commercial view point. New security hardware has been brought onto the market and new theories developed to help the fight against this type of crime.

Campaigns have been run by the police and the Home Office to educate the public to the dangers of being burgled and how they can reduce the risk of them becoming a victim. The introduction of Neighbourhood Watch Schemes has done much to bring the risk of burglary to the attention of the public, although the effectiveness of such schemes in reducing burglary has been questioned (Chapter 5).

Burglary reduction not only involves changing peoples' ideas, but also changing their habits. However, the danger which must be avoided is that the measures adopted to reduce crime do not spoil the quality of life for individuals, or for society in general, by adversely affecting the liberty of individuals, or mar the appearance of towns and cities.

The cost of burglaries is, however, not just the financial cost (Chapter 3.4) borne by the victim or the insurance company due to the burglary, but also the cost involved with the investigation and subsequent trial and punishment of offenders. It must also consider the emotional cost and possible fear of a repercussion for the victim (Chapter 4.3).

Some insurance companies are encouraging householders to improve the security in their dwellings. They are doing this by reducing the premium on the contents insurance for those householders who improve the standards of security in their dwellings to a set minimum standard (Chapter 3.4). Not all Insurance companies, however, adopt the same standards, thus allowing policy holders

to select the standard of requirements that they feel appropriate to their dwelling. This in some cases may be classed by the police as inadequate. Insurance companies must get together and lay down minimum requirements which all companies will adopt.

The statistics for burglaries have fluctuated over the years (Chapter 1) with reductions in the number of burglaries reversing to show an upward trend. This could be due to a number of factors ie. the economic situation, the rate of unemployment or by the number of professional burglars either in prison or having been released (Chapter 1.2).

Designers, architects, planners and developers have a key role to play in the social stability of the nation, for bad housing creates problems within the group of people who live in a badly designed area. Such problems can be vandalism, burglaries, muggings, fear, mental illness or psychological problems. All of these put a greater strain on the nations resources and the agencies which have to deal with these problems. It also creates economic problems for estate management, many council housing estates are becoming very difficult to let due to the problems of crime. This is costing the local authority and hence the community money, due to lost income.

Interviews conducted with planners, architects and builders found the need for them to be educated in aspects of security (Chapter 8). The survey of Educational Institutions found that the inclusion of security in the curriculum by those responsible for

the education of building professionals is now taking place (Chapter 8.3).

#### 9.1.6. Points for Action

The Government must take whatever action is necessary to protect its citizens. This it must do through the police, the legal system and by encouraging, introducing and enforcing measures which are likely to reduce the incidences of burglary. A number of points for action are put forward which may contribute to the reduction in the number of incidences of burglary. These include:

1. **Legal.** The courts should impose sentences on those convicted of burglary which is likely to deter others from committing such an offence. If the sentences imposed by the courts are punitive burglars are more likely to accept the risk of being apprehended. More efficient methods of treating offenders must be found in order to prevent burglars from re-offending.

2. **Standards of Security.** The Government should introduce mandatory minimum standards of security to be installed in all new or substantially remodelled dwellings. Such standards could form part of the Building Regulations and be enforced by approved inspectors.

The security standards incorporated can be assessed by the use

of the Scale of Vulnerability devised by the author. This allocates a numerical score to a dwelling according to the physical and design features incorporated into the development.

The Scale of Vulnerability, which is available as a computer program, could be used on all plans for residential developments submitted to the police under the Secured by Design Initiative or by any other relevant agency.

3. Education. Educational Institutions should ensure that the curriculum for building professionals include aspects of security. This would ensure that all persons aspiring to professional status within the building industry have a reasonable knowledge of security matters.

#### 9.1.7. Final Conclusions

There is a solution to every problem and efforts to find this in relation to burglary are being made. The solution, if found, may not be acceptable to society as a whole for it may place restrictions on sectors of society or infringe their civil liberties. Society may, therefore, decide that this would be too great a price to pay for a reduction in the number of burglaries.

It is a fight against crime and the author can never advocate giving up the fight because difficulties or set backs are

encountered, nor because the tide of the fight is going contrary to desire. That is the time to reappraise the situation, In the words of Shakespear's Henry V,

"But when the blast of war blows in our ears,  
Then imitate the action of the tiger;  
Stiffen the sinews, summon up the blood,  
Disguise fair nature with hard-favour'd rage;"

The tide can be turned against the burglar but it requires determination. That determination must be shown by the government for only if security standards are imposed by the government and/or governing bodies within the building industry will they be implemented by the industry.

## 9.2. Recommendations

The work undertaken for this thesis indicates that a number of areas of further research could be carried out. These are:

1) to determine the accuracy of the scale of vulnerability introduced in this thesis. The additional research would entail a larger sample than that used in this research which would be used to refine the weighting criteria.

The future research could include dwellings which have been burgled in order to ascertain if they would register as vulnerable dwellings on the Scale of Vulnerability. Studies could also be carried out to determine if new dwellings which are given a numerical score do at some time during the period of the new research become targets for a burglar and if the scoring on the scale indicated that this was likely to occur.

2) to assess the outcome of the additional security measures introduced by the National House Building Council, Municipal Mutual and the 'Secured by Design' initiative. This would determine if the new security measures have reduced the number of burglaries, displaced them or had no appreciable effect.

Two developments in the same vicinity could be found for this research. The developments would be similar in all respects except that one would incorporate the security features recommended by the police while the other would not. The number

and details of burglaries for each development would be monitored.

3) to determine if the setting of higher standards of security by some insurance companies has affected the amount of business obtained by these companies regarding dwelling content insurance. It could also assess if this has resulted in a reduction in the number of burglaries and consequently the amount paid out in claims. The research would also determine if overall savings have been made by the insurance companies.

4) to determine the standards of security which could be incorporated into a set of mandatory codes should such a code be introduced in England and Wales. The research could look into the viability of the government introducing such a code as part of the Building Regulations.

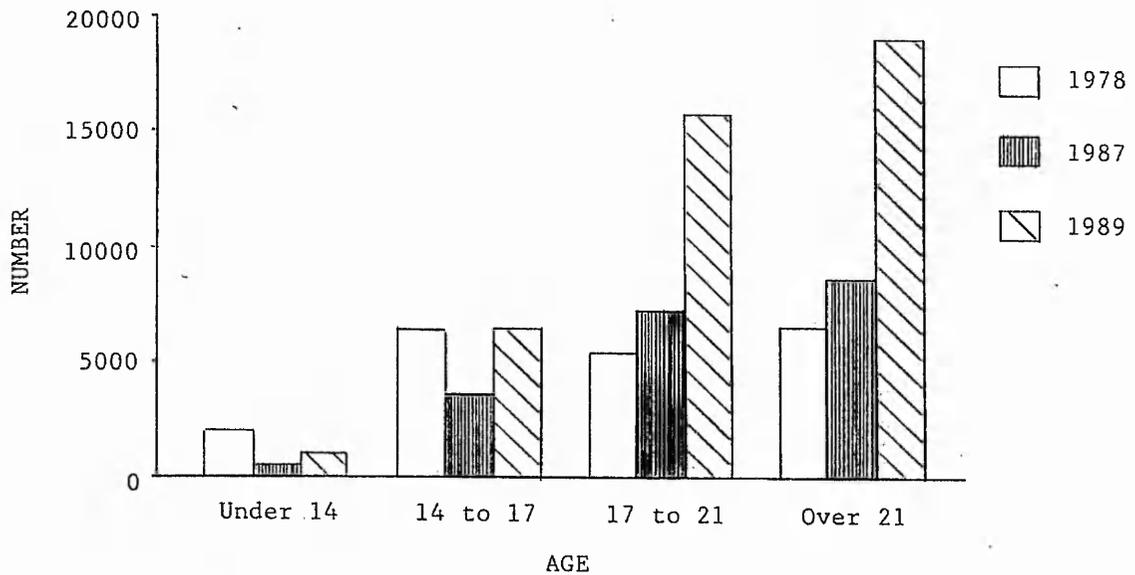
**APPENDICES**

APPENDIX A

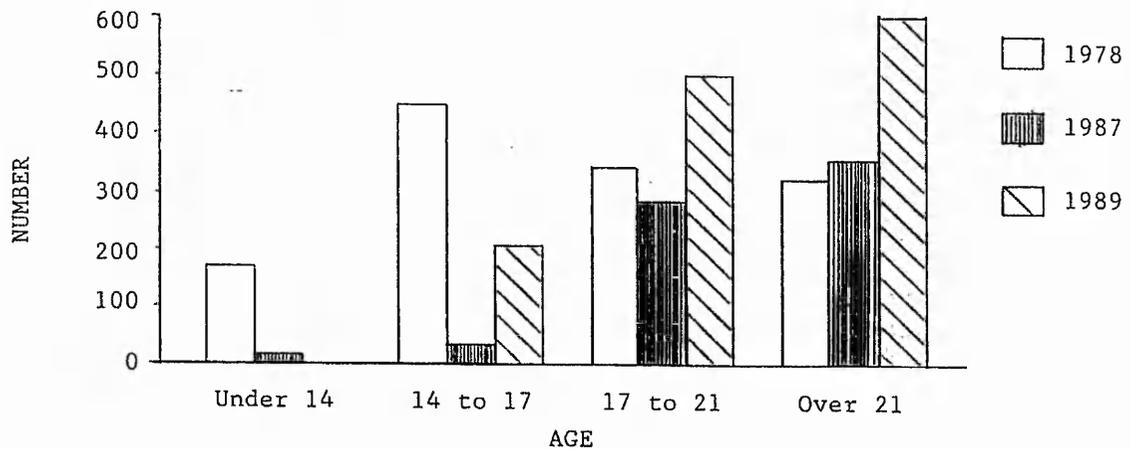
MALE AND FEMALE BURGLARS BY AGE IN 1978, 1987 AND 1989

Sources: Criminal Statistics England and Wales

*MALES FOUND GUILTY OF BURGLARY*  
BY AGE

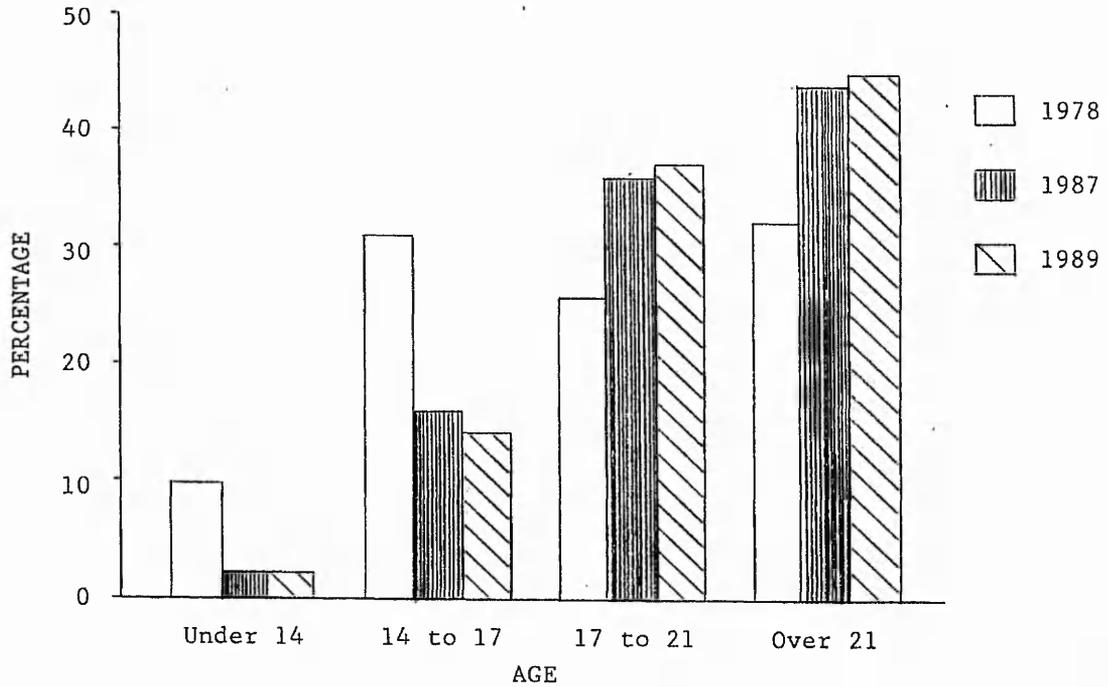


*FEMALES FOUND GUILTY OF BURGLARY*  
BY AGE



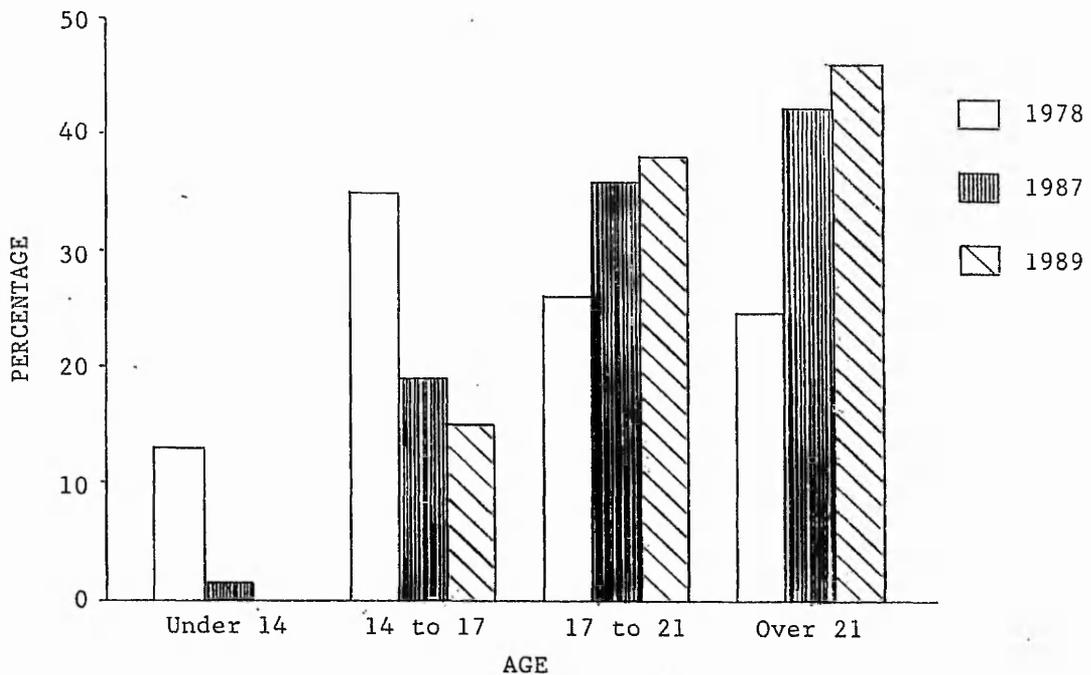
# PERCENTAGE OF MALE BURGLARS

BY AGE



# PERCENTAGE OF FEMALE BURGLARS

BY AGE



## APPENDIX B

### PHYSICAL SECURITY

#### Introduction

A section on physical security is included to ensure that the reader is familiar with this important part of the security of dwellings. Builders and architects must be able to understand the strengths and limitations of the ways which can be utilised to provide protection.

Physical security is the part of protection concerned with physical measures including the building fabric, locks and intruder detection systems.

This Appendix looks at security from a materials and components point of view. It is incorporated in order to ensure that the reader understands the fundamental principles of security in order to be able to comprehend theories put forward in this research. It was felt inappropriate to include this information in the main body of the text despite its importance.

It is important that architects and builders understand the use and limitations of the materials before they start to build a dwelling. This Appendix introduces the components which have for many years been regarded as "security".

It is becoming accepted by police and security experts that security is not just the materials and components, but how and where they are used, though they still play a vital role in the overall security of a building.

A system of security must relate to the building as a whole. It is pointless fitting good locks to a door if the door frame will give way easily to pressure or force. Likewise the fitting of window locks will have little effect in keeping out burglars if easy access is available through a door.

The author has in this Appendix covered only the basic points and has not gone into the physical aspects in any great detail as extensive work already exists on this.

## DOORS AND LOCKS

Doors, by their very nature, are designed to allow the access and egress of people from a building. It is natural therefore that they are the easiest way of doing just that for a burglar as well as for the resident. If doors can be used they will allow the burglar safe, easy movement into a building and they will allow the burglar easy exit with his haul.

Chapter 1 about statistics showed that around 50% of burglars use a door as the means of entry into a dwelling.

Although standards are laid down in the Building Regulations for doors in certain situations specifying how long they must remain intact in a fire, no standards apply with regard to them withstanding forced entry. Strength requirements can, however, be included in a performance specification. Many doors and frames produced are not able to withstand force exerted by an average person.

In order to understand the weaknesses of a door it is important to understand how it is built and how a burglar would gain entry through a door if it was locked.

A door is only as strong as its weakest part, if, therefore, it is a hollow-core type, or has a thin timber panel no matter how good a lock is fitted it will not be effective, for an intruder could kick in the panel and climb through. Solid timber or metal faced doors offer the best protection.

Hinges are another source of weakness. If the door swings outwards it is possible to remove the pins from the hinges and open the door from the hinge side. This can be prevented by the use of a pinned hinge. This incorporates a pin in the hinge which prevents the door from being opened in this way. Pins can be quite easily inserted in ordinary hinges by the removal of one of the screws and the insertion of a nail or dowel. Alternatively, security hinge bolts can be fixed into the door.

It is important that screws used to secure the hinge to the jamb are of sufficient gauge and length. Screws which are less than 25mm No.8 are of little use in combating an attempted break in. The author carried out a number of experiments using different size screws to secure the hinges of a door to the jamb. Force was then exerted to the door by shoulder charging or kicking the door. Any screw smaller than 25mm No 8 offered no resistance to such force.

The frame should also be of sufficient strength to be able to resist an attack. Softwood is particularly vulnerable to a forceful attack, though added strength can be given by fixing a thin metal plate to the door frame. This will give the strength of hard wood without significantly increasing the cost.

Door viewers are a piece of hardware of potential use by the

elderly. These should not be too large or it is possible to punch them out and insert a means of opening the door from the inside.

It is always better to have two or more means of locking the door at different heights. This will then spread any shock over a greater area of the door and jamb and give the door greater rigidity.

Glass in doors is a source of weakness, particularly if the door is at the back or side of the property and is out of view and hearing of the neighbouring properties. The larger the glass panel the greater the risk. Consequently, it is better to have doors with small glass panels than large ones. If large glass panel doors are wanted these should be fitted with security glass as discussed under the section on windows, or metal wrought-iron grills can be used.

According to a number of burglars interviewed by the author patio doors can in many cases be lifted off their tracks from the outside, or it is a simple matter to prise them open. Additional locks designed for patio doors should therefore be fitted in order to ensure that they are secure.

French windows should be fitted with bolts which close into the head and sill, the door which closes first should have a flush bolt which is then covered by the second closing door, this should have bolts top and bottom of a sturdy nature.

Five lever locks should be used on external doors. Two lever locks are made of a non-hardened metal, which will easily be broken with a sharp blow.

It is pointless, however, fitting a strong lock if the door itself is weak, for it is normally the timber of the door which breaks if the door is forced, both door and lock must work together to resist an attack.

The most common form of attack on a door is for it to be kicked near to the lock. If a mortise lock is fitted a kick will normally splinter the door or the frame at the lock. If a cylinder lock is fitted the kick will tend to force the box staple away from the door frame.

Screws provided with locks are frequently not suitable and longer stronger screws may be needed. If a screw goes in just a few millimetres it can be easily dislodged. If it screws well into the frame a great deal more force is required to kick open the door. The striking plate should therefore, be held in position by screws going well into the frame.

Locks can be classified as:

- 1) Mortice
- 2) Bored or Cylindrical

### 3) Rim

#### 1) Mortice

These are locks which fit into a hole which is cut in the side of the door. The lock fits in the outside closing edge of the door itself. The door must be of sufficient thickness not to be appreciably weakened by the removal of timber in order to fit the lock.

Mortice locks can operate on the cylinder or the lever principle. In the latter, the key lifts a lever so that the bolt may move through a gating. The lever then drops to hold the bolt in position and prevents it from being pushed back unless the key lifts the lever to allow the bolt to move through the gating again.

These locks can have a number of levers from 2 up to 10, though 5 levers give a good degree of protection. The more levers the better degree of protection afforded.

The mortice bolt or dead bolt is fitted like the mortise lock and is, like the lock, moved only by a key.

The sash lock and dead lock has a bolt controlled by a spring and handle and a dead lock incorporated in the same case. These keep doors closed and enable them to be locked when required.

#### 2) Bored or Cylinder

These are locks which have the mechanism within a cylinder. They consist of a set of 4, 5 or 6 spring loaded pin tumblers which prevent the cylinder plug from rotating and operating the bolt.

When the key is inserted it lifts the pins to a predetermined height which aligns the split in the pin with the joint between the plug and cylinder barrel which allows the plug to rotate and the bolt to be moved.

Some cylinder locks allow the bolt to be thrown by the use of a thumb-turn from the inside. These should not be used where glass or flimsy panels allow someone from the outside to reach in and open the lock. Variations are available which allows the bolt to be thrown with a thumb-turn or to be locked with a key to prevent this, allowing it to be thrown only with the use of the key.

#### 3) Rim Lock or Dead Latch

These lock are screwed on to the inside face of the door. They can be locked solid in the extended position so that the latch can not be pushed back into the lock case.

Rim locks can also be double locked whereby a turn of the key in the opposite direction to unlocking will prevent the lock being opened except with a key. This will prevent a person from being able to gain entry by breaking the glass in a door and turning the knob.

### Spring Latch or Night Latch

This is the same as the rim lock except the latch can not be locked in the extended position, meaning it can be pushed back into the lock case.

### Keep

When the bolt of a lock is extended it houses in a keep ( known also as a staple and striking plate ) this is made of metal and is fixed to the door frame ( or style ). Better quality keeps include a steel box to protect the bolt and provide additional strength and rigidity.

### Bolts

A bolt fitted top and bottom of front, rear and side external doors offer good additional security for a modest price. Such bolts should be robust with screws at least 25mm No.8.

### Door Closers

From the security point of view these should be fitted when entry phone systems are installed.

The closer must be capable of closing and latching the door. The selection of the closer will depend on the following:

- 1) Size and weight of the door.
- 2) Resistance of the latching mechanism.
- 3) Amount of use.
- 4) Wind loading.
- 5) Degree of exposure.

### Types of Closers

- 1) Hydraulic floor springs.
- 2) Overhead concealed transom-mounted springs.
- 3) Surface-mounted overhead hydraulic closer.

4) Fully concealed door mounted.

5) Simple springs.

Note: Types 4 and 5 closers are not suitable for entry systems.

## WINDOWS

Approximately 50% of burglaries are effected by the intruder gaining entry through a window (See Chapter 1). As seen previously many entries are effected through windows which had been left open. In many cases, however, the window was either forced, or the glass broken in order for the burglar to insert his hand and undo the catch. This allows the burglar to climb through the window without the risk of injury involved with climbing through the jagged edges of the broken glass.

Transom windows are frequently broken or forced to allow the burglar to reach the catch of the larger casement window, through transoms are all too often left open. The householder believing that transoms are too small for anyone to get through and not realising that they allow the burglar to be able to reach in and open the casement window without any difficulty.

It is important, therefore, that all windows, however small, should be fitted with window locks. A number of different types are available according to the type and material of the window.

The locks used should be of a type suitable for the window to be protected. In many cases more than one lock should be used for each window, the positioning of which will depend on the type and size of the window.

Locks should be fixed securely to the frame with screws of adequate length.

Exposed hinges like doors can have their pins removed allowing windows to be opened from the hinge side.

Louvre windows can provide easy access as the louvers can be slid out of their channelling. If louvers are installed they should be bonded in position with a suitable adhesive.

## GLASS

Glass can be easily broken in most cases, unless a toughened glass is used. Certainly the sound of breaking glass does make a noise and the jagged pieces of broken glass do present a hazard if the burglar has to climb through them. More often, however, the glass is broken in order to be able to open a window or to unlock a door from the inside. If therefore, the window is fitted with a lock and the door can not be opened from the inside without the key, glass will to some extent keep intruders out. Glass areas should be kept to a minimum.

It is, however, better to have security glazing which is not so easy to break. This can take one of the following forms.

Laminated Glass. This consists of layer of vinyl or polycarbonate sandwiched between two layers of glass. The thickness of the glass and the sandwiched layer will depend on its location and purpose.

Toughened or Tempered. This is four or five times stronger than the same thickness of ordinary glass, though when broken the glass disintegrates into small cubes which reduces the risk of injury to the burglar should he wish to pass through the broken glass.

Wired. This has wire incorporated in the glass during manufacture which strengthens it and holds it together even if the glass is smashed.

Plastics. These are more than ten times stronger than glass of the same thickness and will not so easily fracture.

#### SHUTTERS AND GRILLS

Other ways of preventing intruders from entering through windows are to fix some form of barrier at the window. This can be with metal bars, though these make the building look like a prison. Metal bars also create a danger in the event of a fire by preventing escape or rescue via a window. Metal bars should therefore only be used for rooms such as store rooms or garages.

Window grills are available and these can be fixed permanently in position or they can fold away when not in use to be hidden behind the curtains.

External shuttering is another form of security which is used widely on the continent and is becoming increasingly popular in this country. This is controlled from inside by lowering a reel of laths down from above the window to form a screen in front of the window.

## LIGHTING

If it is an accepted fact that burglars do not like to be seen and that burglars work at night it can be assumed that brightly lit areas will be avoided by the majority of burglars. It is therefore, reasonable to accept that lighting of an area will deter burglars to some extent.

Lighting does, however, have to be planned in order to illuminate any likely approaches or weak spots in a buildings security. Lighting must not form shadows which a burglar can utilise in his approach to a building.

Lighting may be on through out the hours of darkness, or it may come on when some one enters the protected area; this method being controlled by an infra-red sensor. Such a system should be tested at regular intervals. Mechanical damage should be looked out for as stone throwing youths may find it good sport, or a burglar may disable it during the day in readiness for a burglary at night.

Lighting should be used to illuminate the intruder and not the building. If it is the building which is lit, it makes it difficult for any one in the building to see out as they have the light shining in their eyes. If the light is directed to shine in the intruders eyes it makes it difficult for him to see if any one is watching him and the glare has a psychological effect making him feel vulnerable.

Any lighting system is wasted if the light does not put the burglar in an exposed position. Lighting a side passage which is completely enclosed by high fences and a gate which hides the area from the road or any overlooking property will merely give the burglar light which will be of help to him in effecting an entry. In such a situation it is better to install an infra-red controlled system which switches on the light when some one enters its zone. This has the psychological effect of the sudden illumination, and also, as such systems can be wired to an internal audio alarm, the occupant is made aware of any intruders entering that space.

Care should be taken that the light does not fall onto adjacent properties if this is likely to cause a nuisance.

The main means of supplying light was for many years the incandescent lamp, though this now is mainly replaced by arc discharge lamps often referred to as high-intensity discharge lamps.

A wide variety of luminaires are available depending on the area to be protected. Some will spread a light over the whole area while others will cast a beam which can be over  $100^{\circ}$  to others which will have a beam of  $10^{\circ}$ .

A number of manufacturers offer lighting systems specially

developed for dwellings.

## ALARMS

The use of alarms will enable an intruder to be detected in one of three ways:

- 1) Volumetric protection. When an intruder enters an area. The area is protected by a device which registers either heat or movement.
- 2) Linear protection. When an intruder crosses a line. A beam is used to mark the edge of an area which if broken will register and activate an alarm.
- 3) Contact protection. When an intruder contacts an object. This may be a door or window contact, or a pressure mat.

Alarms consist of a circuit or device which gives a warning when some one intrudes into the area which the system is protecting.

Alarms have several purposes:

- 1) They inform potential intruders that the premises are protected and that they would therefore be advised not to attempt a break in as they run a higher risk of detection. The alarm box displayed on the outside of the dwelling will advertise this fact and to a certain extent act as a deterrent.
- 2) The activated alarm will inform an intruder that he has been detected so hopefully he will not stay to complete the task.
- 3) The activated alarm will alert other people in the vicinity that an intrusion is taking place and that the police should be called, which may result in the intruder being apprehended. Alternatively, the alarm can alert staff at a central monitoring station who will react to the situation.

One of the main problems with alarm systems is that of the false alarm. This can cause a great deal of nuisance and if it happens on a regular basis it can reduce the effectiveness of the system as people will assume it is a false alarm when it may be a genuine intrusion

Circuits can be a break to make, or a make to make. Switches are used at doors and windows which will break the circuit when they are opened causing the alarm to be activated. While a pressure mat situated under a carpet will make a circuit when walked upon.

Sensors are also available which will detect movement, noise or body heat.

It is important that the system is designed according to the situation and the occupants of a dwelling, for the use of the wrong means of detection (ie. the use of a sensor if a dog is to be left in the house) will mean the alarm being continually activated.

The simplest type of alarm is either switched on, whereby it can be activated by an intruder, or it is switched off when the occupants are at home. Alternatively, a dwelling can be divided into zones allowing the ground floor to be protected at night when the family is upstairs in bed, though the whole house when they are out.

Door contacts are available as surface-mounted or concealed contacts. As well as being better from the aesthetic point of view, concealed contacts are better from the security point of view as when the door is closed there is no way of knowing if one is fitted ( providing all wiring is concealed ).

These contacts are fitted in the frame and contain reeds which are held in the closed position by a magnet in the door, when the door is opened the reeds break activating the alarm.

For up and over garage doors a roller shutter contact is available.

Door contacts can be fitted on all doors either external or internal. By fitting them on internal doors even if the burglar enters through a window if he should move from that room the alarm will be activated. Door contacts are a reasonably inexpensive yet effective and reliable method of activating the alarm. It is a good, cost effective method of supplying a reasonable standard of protection for an area of moderate instances of crime. Certainly panels can be removed from doors whereby the door is not opened when the intruder gains access, in which case the alarm would not be activated, though door contacts supply the basic protection which can then be built upon.

Doors must be tight fitting and there must be no excessive movement or false alarms can result.

The most simple and cost effective way of improving the system is to fit pressure mats. These are thin pads which incorporate electrical elements, which if walked upon touch and activate the alarm. They are placed where an intruder is likely to walk. These can create problems with concealment if the carpeting is particularly thin, for although the mat is thin, the outline can some times be seen. Mats placed under the stair treads are less easy to see. As the pressure mat is an open circuit which is activated when closed, tamper loops must be incorporated.

A higher state of protection can be obtained by the use of movement detectors. Though great care must be taken here to avoid the risk of false alarms which are more common with movement detectors.

Great care is needed if the occupants have any pets which are given the run of the premises.

There are four main types of movement detector:

1) Passive infra-red. These pick up the infra-red radiations which are emitted from all living creatures. These can however be activated by sudden changes in temperature, either from heating systems or from the sun, or by draughts falling upon the sensor. The reflection of car headlights can also cause problems. The sensor should be positioned where an intruder will have to walk across the face of the sensor as they are not so effective if a person walks directly towards the sensor.

2) Ultrasonic sensors give out a sound frequency which is reflected back from objects in the room at the same frequency, any movement will alter the frequency which will activate the alarm. Draughts will also cause problems here, as will certain noises ie. the ringing of the telephone.

3) Microwave. A signal is transmitted which if there is no movement will return at the same frequency, if there is movement the frequency will alter and activate the alarm. Draughts will not effect the sensor, though if they cause curtains to move the alarm can be activated. As the microwave will penetrate walls and windows great care must be taken with their positioning. Mirrors and fluorescent tubes can also cause problems. This type of sensor is most effective when the movement is towards it.

4) Rays. This consists of a transmitter sending out a beam of infra-red light or radio waves which is then received by a receiver. If the beam is broken the alarm is activated. These are available for internal and external locations.

Windows can be protected in a number of ways, though the way chosen will depend on the situation.

To detect the glass being broken metallic foil strip can be fixed between two terminals across the glass. If the glass is broken the strip will break and the alarm will sound. This is unsightly and also tells a prospective burglar exactly what is installed and by knowing this he knows the measures he must take to defeat the system.

Detectors are also available which are activated by the sound of breaking glass. These would be placed close to or above the window, they can also be activated however, by the sound of certain bells or by breaking bottles. A device is also available which attaches to the window itself.

Magnetic contacts can be used on opening windows as they are used on doors. As most burglars are reluctant to risk getting in through the jagged pieces of a broken glass these are as effective as a detector for breaking glass.

Vibration detectors are sensitive to vibration so if mounted on a window frame any attempt to force open the window would activate the alarm. These are available as either a mechanical inertia sensor or as an electronic version. The latter being more expensive because they have a greater degree of adjustability.

Panic buttons can be installed in the system which allow the occupants to activate the alarm even if it is not switched on. Buttons can be sited by the external doors within easy reach should someone try to force an entry while the occupant is answering the door and by the bed for emergency use during the night.

Alarm systems can be audible, silent or a combination of the two. Many are also visual in that they display a flashing light in addition to an audible signal.

The audible system incorporates an alarm box on the exterior of the property which holds a bell or siren. When an intruder enters the property and activates the alarm the bell or siren will sound a warning alerting people in the vicinity that the security of the premises has been breached.

It is important that the alarm box is placed in a position where it will have the greatest effect and that is where others in the vicinity will be able to hear it. It must be completely inaccessible either from the ground, flat roofs, drain or soil and vent pipes. The cover of the alarm box should have a anti-tamper switch which will activate the alarm at all times if the cover is lifted. This system relies on some one informing the police that an incident is taking place.

There was a common believe by many householders that to have a burglar alarm advertised the fact that you had something worth stealing. This is no longer the case as these days most people have valuable items like televisions, videos or computers.

It is now generally accepted by the police ( borne out by the research amongst burglars ) that a burglar alarm will deter the majority of burglars as it increases the risk of the intruder being detected. The alarm box should therefore be positioned where it can be easily seen.

Problems can be encountered with the noise from alarms, either due to false alarms, or due to the occupier being away and unobtainable when the alarm is activated. These problems can be minimised by the fitting of a cut-out device which switches the alarm off after a certain time. This is dealt with under the Code of Practice on Noise from Audible Intruder Alarms, 1982.

Silent alarm systems can dial the police or a security organisation and play a cassette tape which gives the address and states that an intruder is at the premises.

Another system is to have a direct line to the police or security organisation. This has the advantage that if a fault occurs on the line it will register and will be treated as an alarm call, whereas if a fault occurs on the ordinary telecom line and an intruder activates the alarm, it will not be able to summon help.

A system which will sound an audible signal and inform the police or private security organisation is in many ways superior and

these are available.

If an alarm is activated it may have to be reset manually or it can be reset automatically after a fixed period of time, usually 20 minutes.

Problems can occur with manually reset systems if a potential burglar activates the alarm in order to disable it and then returns later.

Systems will incorporate an Entry and Exit timer to allow the occupants time to get in and out of the house without activating the alarm. The time period can be adjusted according to the occupants. Although the timer allows the occupant time to reach the control panel, should someone enter the same area from another route the alarm will be activated immediately.

Alarm systems can be wired or they can be wire free where they operate on a radio frequency. They can also plug into the household mains electricity which pulse signals through the mains system.

## ENTRY PHONE SYSTEMS AND CLOSE CIRCUIT TELEVISION

In multiple occupation housing schemes or blocks of flats access should be restricted to prevent access to unauthorised persons.

Many problems can occur if this is not done, eg. vandalism, muggings, graffiti as well as burglaries. All these go to lower the standard of the building, as well as its viability, causing fear amongst its occupants and a reluctance amongst people to live there. It is therefore important that such buildings are designed with this point in mind.

One means of restricting access is to install a telephone entry system. This ensures that anyone who is not an occupant and who does not have a key, has to contact a resident by the telephone at the building entrance. The occupant then verifies the visitor and releases the door by remote control.

The system consists of a call button situated at the entrance for each residence and a telephone communication between the entrance and each residence. Close circuit television can also be used to verify the identification of the visitor and that only the visitor gains entry when the door is opened.

The design of the building should ensure that the entrance has a clear, well lit approach, and that there are no places where a loiterer could lay in wait.

Shelter can be provided by a canopy or the overhead design of the building. A small external lobby can be provided but this must not provide any concealment, a strong plastic being an ideal material for the construction of external shelters. It is the outer door which should be locked and controlled, unvetted callers should not be allowed into a lobby.

Panels should be built into the building and must be robust and resistant to vandalism

An additional advantage of a lobby is to reduce the wind loading on the external door.

It is essential that the door is fitted with a reliable means of closing and latching and that there is no way that the door can be held open.

APPENDIX C

QUESTIONNAIRE FOR HOUSE BUILDERS

The aim of this questionnaire is to investigate the measures employed in dwellings in order to keep out burglars or intruders.

Please circle the appropriate answer.

Please use a separate form for each development.

1) HOW MANY UNITS ARE BEING BUILT ON THIS SITE? (1-350)

2) WHAT TYPE OF UNIT IS BEING BUILT?

STARTER (22%)      MIDDLE RANGE (64%)      EXECUTIVE (50%)

3) WHERE IS THE SITE SITUATED? PLEASE GIVE ADDRESS

INNER CITY (11%)      OUTER CITY (44%)      VILLAGE (42%)      COUNTRY SIDE (3%)

4) ARE YOU AS A COMPANY AWARE OF THE HOME SECURITY CAMPAIGNS RUN BY THE POLICE AND THE HOME OFFICE?

YES (86%)      NO (14%)

5) ARE YOU AWARE OF THE MAGNITUDE OF BREAK INS & BURGLARIES FROM DWELLINGS?

YES (75%)      NO (22%)

6) WHAT TYPE OF DOOR LOCKS ARE FITTED AS STANDARD IN YOUR PROPERTIES?

2 LEVER (0%)      3 LEVER (14%)      5 LEVER (83%)      OTHER PLEASE SPECIFY (3%)

7) DO YOU FIT ANY ADDITIONAL SECURITY DEVICES? i.e. Window locks, alarms.

PLEASE SPECIFY (Yes 89%) (No 11%)

8) WILL THE ANSWER TO QUESTIONS 6 & 7 DEPEND ON THE TYPE OF UNIT BEING BUILT?

YES (52%)      NO (44%)

9) WAS SECURITY PART OF THE BRIEF GIVEN TO THE ARCHITECT OR DESIGNER FOR THESE DWELLINGS?

YES (30%)      NO (64%)      NOT KNOWN (6%)

10) DID THE ARCHITECT OR DESIGNER VISIT THE SITE WITH REGARD TO SECURITY IN THE DESIGN AND LAYOUT OF THE DWELLINGS?

YES (25%) NO (69%) NOT KNOWN (6%)

11) DO YOU FEEL THE DESIGN AND LAYOUT OF THE DWELLINGS WITH REGARD TO SECURITY IS

VERY GOOD (25%) GOOD (44%) SATISFACTORY (30%) POOR (0%)

12) DID YOU OR THE ARCHITECT TAKE SPECIALIST ADVICE ON ASPECTS OF SECURITY?

YES (14%) NO (80%) NOT KNOWN (6%)

13) DID YOU SEEK ADVICE ON THE INCIDENCES OF BREAK INS IN THE AREA PRIOR TO DEVELOPING?

YES (3%) NO (97%)

14) DOES THE AREA THAT YOU ARE BUILDING IN SUFFER FROM HIGH INCIDENCES OF BREAK INS OR BURGLARY?

YES (0%) NO (67%) NOT KNOWN (33%)

15) DO POTENTIAL PURCHASERS ENQUIRE ABOUT:

i) INCIDENCES OF BREAK INS OR BURGLARY IN THE AREA

YES (3%) NO (94%)

ii) STANDARDS OF SECURITY IN YOUR DWELLINGS

YES (39%) NO (58%)

IF YES WHAT DO THEY ASK ABOUT?

16) DO YOU GIVE POTENTIAL PURCHASERS THE OPTION OF IMPROVED SECURITY?

YES (64%) NO (36%)

17) HAS ANY ONE ASKED YOU TO INSTALL IMPROVED SECURITY MEASURES?

YES (44%) NO (56%)

IF YES WHAT DID THEY ASK FOR?

18) HAVE YOU HAD ANY TROUBLE WITH SITE SECURITY DURING CONSTRUCTION?

YES (67%) SOME LOTS NO (33%)

PLEASE SPECIFY

Thank you for your help.

APPENDIX D

QUESTIONNAIRES FOR THE EDUCATION OF ARCHITECTS, PLANNERS &  
BUILDERS

- 1) College/ University
- 2) Position of person responding
- 3) Name of Course
- 4) How long is the Course?  
Mode ie. FT. PT. SW.
- 5) Does the course contain any tuition on aspects of security in  
Buildings?  
Dwellings?
- 6) If yes: How much time is given to the subject in:  
Lectures?                      Seminars?                      Tutorials?
- 7) At what stage is the tuition given ie Week 4 Year 3
- 8) Are any individual study projects devoted to it?
- 9) What form of security does the course cover ie. design,  
types of locks etc.
- 10) When was security introduced into the course ie. 2 years  
ago.
- 11) Who do you consider is responsible for the security of a  
building or development?
- 12) What is the position or profession of the person or persons  
who sets the syllabus for the course?
- 13) Do you personally feel that the course should include  
security in the syllabus?

14) Do you personally feel that the course should include aspects of security in greater depth.

15) Any comments you wish to make.

## APPENDIX E

### QUESTIONNAIRE FOR HOUSEHOLDERS

The purpose of this questionnaire is to ascertain the number and frequency of burglaries, or attempted burglaries for a given location. It is part of a research programme which is being carried out in conjunction with the Lincolnshire Police and is aimed at quantifying instances of burglaries according to the area and design of dwellings, the results of which will be used in an attempt to reduce the instances of burglaries.

I would, therefore, greatly appreciate you taking the few minutes which are required to fill in this questionnaire.

Please circle the appropriate answer or insert a response where indicated.

#### SECTION 1

To be answered by all

- 1) How long have you lived in this house?
- 2) Have you ever been burgled since you have lived here?

Yes                      No

If Yes, How many times?

- 3) Has any one ever attempted to burgle this house since you have lived here, but did not succeed?

Yes                      No

If Yes, How many time?

- 4) Was this house ever burgled when a previous occupier lived here?

Yes                      No                      Not known

#### SECTION 2

If you answered no to Questions 2 and 3 miss this section and proceed to Section 3.

- 5) Can you give the approximate date when these burglaries or attempted burglaries referred to in questions 2, 3 & 4 took place?

6) When did the burglary occur? ( If more than one, place number against each time of day ).

Morning                      Afternoon                      Evening                      Night

7) Were you in the house when the burglary occurred?

Yes                      No

If no, Were you

On holiday                      Away for the day                      Out for a short time

8) How did the burglar gain entry to your house in order to commit the burglary? ( Please specify for each burglary ).

9) What was stolen in the burglary and their value? ( If more than one burglary occurred please indicate items per burglary ).

10) Did you report the matter to the police?

Yes                      No

If No, Why not

11) Were the items ever recovered ?

Yes                      No

12) Was any damage done to the house or to your other possessions?

Yes                      No

If yes please specify

13) Did you make a claim on your insurance?

Yes                      No

14) Did the burglary result in you improving security for the house?

Yes                      No

If yes, What additional measures did you take?

If no, Why did you not increase the measures of security?

SECTION 3

To be answered by all

15) Is there easy external access from the front to the rear of the house?

Yes                      No

16) Does the front garden have trees or shrubs, or any other thing which can obstruct the view to or from the road?

Yes                      No

17) Does the front garden have a fence which can obstruct the view from the road?

Yes                      No

18) Does the front door have a porch which is normally kept unlocked?

Yes                      No

19) Is the front door recessed or partly obscured by projections from the building?

Yes                      No

20) Does the rear garden back onto a public road or footpath, or onto open ground?

Yes                      No

21) Is the house situated fronting on a public road which has through access to the public?

Yes                      No

22) Is the house on a council estate?

Yes                      No

23) Is there a council estate within easy walking distance from your house?

Yes                      No

24) Does the house have an extension on the ground floor which has a flat roof from which upper floor windows can be reached?

Yes                      No

25) Can the front of the house be easily seen by people passing by, and by neighbours?

Yes No

26) Is access to the side or rear of the house obstructed in any way?

Yes No

27) Can the side of the house be seen easily by people passing by or by neighbours?

Yes No

28) Is the back garden fully enclosed by a fence which is difficult to climb over?

Yes No

29) Is the back garden fully enclosed by neighbours gardens?

Yes No

30) Is the back door of the house over looked by neighbours?

Yes No

31) Does the house have an alarm system, with the alarm box easily seen from the front of the house?

Yes No

32) Is the house fitted with window locks?

Yes

On all windows All ground floor windows Some windows

No

33) Is access to the house well lit at night ?

Yes No

34) Are you a member of a Neighbourhood Watch Scheme?

Yes No

35) Have you post coded your valuables?

Yes No

If no please give the reason why you have not done so.

## APPENDIX F

### COMPUTER PROGRAMME

```
PROGRAM Evaluate (Input, Output);

Var Tote: Integer;

    Burg,One5,One6,One7,One8,One9,Two0,Two1,Two2,Two3,Two4,
    Two5,Two6,Two7,Two8,Two9,Three0,Three1,Three2,Three3,
    Three4,Display: Char;

    Isit1,Isit2,Isit3,Isit4,Check1,Check2,Blank1: Boolean;

                                {THIS SECTION ENTERS THE RESULTS
                                FROM THE QUESTIONNAIRE AND
                                ALLOCATES THE SCORE}

Begin

Tote:=0;

Writeln;
Writeln;
Writeln('THIS PROGRAM WILL ASSESS THE VULNERABILITY OF A
        DWELLING');
Writeln;
Writeln('IN ORDER TO DO THIS ENTER THE RESULTS FROM THE
        QUESTIONNAIRE');
Writeln;

Writeln('Was the dwelling burgled? Q.2');
Writeln;
Writeln('Enter Y for Yes or N for No');
Readln(Burg);
Writeln;

Writeln('Enter Y or N at each question');
Writeln;
Writeln('Start at Question 15');
Writeln;

Begin
Repeat
    Writeln('15');
    Readln(One5);
    If One5='Y' then
        Tote:=Tote-2;
    If One5='N' then
        Tote:=Tote+2;
    IF (One5<>'Y') and (One5<>'N') then
        Writeln('Please Press Y or N');
```

```

UNTIL (One5='Y') or (One5='N')
End;

Begin
Repeat
  Writeln('16');
  Readln(One6);
  If One6='Y' then
    Tote:=Tote-1;
  If One6='N' then
    Tote:=Tote+1;
  IF (One6<>'Y') and (One6<>'N') then
    Writeln('Please Press Y or N');
  UNTIL (One6='Y') or (One6='N')
End;

Begin
Repeat
  Writeln('17');
  Readln(One7);
  If One7='Y' then
    Tote:=Tote-1;
  If One7='N' then
    Tote:=Tote+1;
  IF (One7<>'Y') and (One7<>'N') then
    Writeln('Please Press Y or N');
  UNTIL (One7='Y') or (One7='N')
End;

Begin
Repeat
  Writeln('18');
  Readln(One8);
  If One8='Y' then
    Tote:=Tote-1;
  If One8='N' then
    Tote:=Tote+1;
  IF (One8<>'Y') and (One8<>'N') then
    Writeln('Please Press Y or N');
  UNTIL (One8='Y') or (One8='N')
End;

Begin
Repeat
  Writeln('19');
  Readln(One9);
  If One9='Y' then
    Tote:=Tote-1;
  If One9='N' then
    Tote:=Tote+1;
  IF (One9<>'Y') and (One9<>'N') then
    Writeln('Please Press Y or N');
  UNTIL (One9='Y') or (One9='N')
End;

Begin

```

```

Repeat
  Writeln('20');
  Readln(Two0);
  If Two0='Y' then
    Tote:=Tote-2;
  If Two0='N' then
    Tote:=Tote+2;
  IF (Two0<>'Y') and (Two0<>'N') then
    Writeln('Please Press Y or N');
  UNTIL (Two0='Y') or (Two0='N')
End;

```

```

Begin
  Repeat
    Writeln('21');
    Readln(Two1);
    If Two1='Y' then
      Tote:=Tote-2;
    If Two1='N' then
      Tote:=Tote+2;
    IF (Two1<>'Y') and (Two1<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Two1='Y') or (Two1='N')
  End;

```

```

Begin
  Repeat
    Writeln('22');
    Readln(Two2);
    If Two2='Y' then
      Tote:=Tote-4;
    If Two2='N' then
      Tote:=Tote+4;
    IF (Two2<>'Y') and (Two2<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Two2='Y') or (Two2='N')
  End;

```

```

Begin
  Repeat
    Writeln('23');
    Readln(Two3);
    If Two3='Y' then
      Tote:=Tote-3;
    If Two3='N' then
      Tote:=Tote+3;
    IF (Two3<>'Y') and (Two3<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Two3='Y') or (Two3='N')
  End;

```

```

Begin
  Repeat
    Writeln('24');
    Readln(Two4);
    If Two4='Y' then

```

```

    Tote:=Tote-1;
    If Two4='N' then
    Tote:=Tote+1;
    IF (Two4<>'Y') and (Two4<>'N') then
    Writeln('Please Press Y or N');
    UNTIL (Two4='Y') or (Two4='N')
End;

```

```

Begin
  Repeat
    Writeln('25');
    Readln(Two5);
    If Two5='Y' then
    Tote:=Tote+1;
    If Two5='N' then
    Tote:=Tote-1;
    IF (Two5<>'Y') and (Two5<>'N') then
    Writeln('Please Press Y or N');
    UNTIL (Two5='Y') or (Two5='N')
  End;

```

```

Begin
  Repeat
    Writeln('26');
    Readln(Two6);
    If Two6='Y' then
    Tote:=Tote+1;
    If Two6='N' then
    Tote:=Tote-1;
    IF (Two6<>'Y') and (Two6<>'N') then
    Writeln('Please Press Y or N');
    UNTIL (Two6='Y') or (Two6='N')
  End;

```

```

Begin
  Repeat
    Writeln('27');
    Readln(Two7);
    If Two7='Y' then
    Tote:=Tote+1;
    If Two7='N' then
    Tote:=Tote-1;
    IF (Two7<>'Y') and (Two7<>'N') then
    Writeln('Please Press Y or N');
    UNTIL (Two7='Y') or (Two7='N')
  End;

```

```

Begin
  Repeat
    Writeln('28');
    Readln(Two8);
    If Two8='Y' then
    Tote:=Tote+1;
    If Two8='N' then
    Tote:=Tote-1;

```

```
IF (Two8<>'Y') and (Two8<>'N') then
  Writeln('Please Press Y or N');
UNTIL (Two8='Y') or (Two8='N')
End;
```

```
Begin
  Repeat
    Writeln('29');
    Readln(Two9);
    If Two9='Y' then
      Tote:=Tote+1;
    If Two9='N' then
      Tote:=Tote-1;
    IF (Two9<>'Y') and (Two9<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Two9='Y') or (Two9='N')
  End;
```

```
Begin
  Repeat
    Writeln('30');
    Readln(Three0);
    If Three0='Y' then
      Tote:=Tote+2;
    If Three0='N' then
      Tote:=Tote-2;
    IF (Three0<>'Y') and (Three0<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Three0='Y') or (Three0='N')
  End;
```

```
Begin
  Repeat
    Writeln('31');
    Readln(Three1);
    If Three1='Y' then
      Tote:=Tote+6;
    If Three1='N' then
      Tote:=Tote-4;
    IF (Three1<>'Y') and (Three1<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Three1='Y') or (Three1='N')
  End;
```

```
Begin
  Repeat
    Writeln('32');
    Readln(Three2);
    If Three2='Y' then
      Tote:=Tote+1;
    If Three2='N' then
      Tote:=Tote-1;
    IF (Three2<>'Y') and (Three2<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Three2='Y') or (Three2='N')
  End;
```

```

Begin
  Repeat
    Writeln('33');
    Readln(Three3);
    If Three3='Y' then
      Tote:=Tote+1;
    If Three3='N' then
      Tote:=Tote-1;
    IF (Three3<>'Y') and (Three3<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Three3='Y') or (Three3='N')
  End;

```

```

Begin
  Repeat
    Writeln('34');
    Readln(Three4);
    If Three4='Y' then
      Tote:=Tote+2;
    If Three4='N' then
      Tote:=Tote-2;
    IF (Three4<>'Y') and (Three4<>'N') then
      Writeln('Please Press Y or N');
    UNTIL (Three4='Y') or (Three4='N')
  End;

```

{THIS ADJUSTS THE SCORE IN  
 ORDER TO MODIFY THE  
 QUESTIONNAIRE TO ENSURE THAT  
 16 & 17 DO NOT DISTORT THE  
 SCORE}

```

Check1:=(One6='Y') and (One7='Y');
Check2:=(One6='N') and (One7='N');

```

{THIS LOOKS TO DETERMINE IF  
 TWO OR MORE FACTORS OCCUR IN  
 THE SAME DWELLING}

```

Isit1:= (One5='Y') and (Two1='Y');
Isit2:= (Two0='Y') and (Two2='Y');
Isit3:= (Two5='Y') and (Two7='Y') and (Three4='Y');
Isit4:= (Two0='Y') and (Two3='Y');

```

{THIS ALLOCATES AN ADDITIONAL  
 SCORE IF TWO OR MORE OF THE  
 FACTORS ABOVE OCCUR}

```

If Isit1 then
  Begin

```

```
Tote:=Tote-2;  
End
```

```
If Isit2 then  
Begin  
Tote:=Tote-2;  
End
```

```
If Isit3 then  
Begin  
Tote:=Tote+2;  
End
```

```
If Isit4 then  
Begin  
Tote:=Tote-2;  
End
```

```
If Check1 then  
Begin  
Tote:=Tote+1;  
End;
```

```
If Check2 then  
Begin  
Tote:=Tote-1;  
End;
```

{THIS SHOWS THE RESULTS TO THE SCREEN}

```
Writeln('The total score for this dwelling is ',Tote);
```

```
If Tote=0 then  
Writeln('This dwelling may be burgled');
```

```
If Tote <0 then  
Writeln('This dwelling is likely to be burgled');
```

```
If Tote >0 then  
Writeln('This dwelling is not likely to be burgled');
```

```
If Burg='Y' then  
Writeln('This dwelling has been burgled');
```

```
If Burg='N' then  
Writeln('This dwelling has not been burgled');  
Writeln;
```

```
Writeln('If the forecast is incorrect refer to Section 2 for more  
information on why it may be incorrect');
```

```

Writeln;
Writeln('Dwellings are classified as:');
Writeln('  Very Safe');
Writeln('  Reasonably Safe');
Writeln('  Just Safe');
Writeln('  Slightly Vulnerable');
Writeln('  Reasonably Vulnerable');
Writeln('  Very Vulnerable');
Writeln;
Writeln('This dwelling is classed as:');

If (Tote >1) and (Tote <5) then
Writeln('  JUST SAFE');

If (Tote >4) and (Tote <10) then
Writeln('  REASONABLY SAFE');

If Tote >9 then
Writeln('  VERY SAFE');

If (Tote <0) and (Tote >-6) then
Writeln('  SLIGHTLY VULNERABLE');

If (Tote <-5) and (Tote >-11) then
Writeln('  REASONABLY VULNERABLE');

If Tote <-10 then
Writeln('  VERY VULNERABLE');

Blank1:=(One5='N') and (One6='N') and (One8='N') and (One9='N')
        and (Two0='N') and (Two4='N') and (Three1='Y') and
        (Three2='Y') and (Three3='Y') and (Three4='Y');

Writeln;
Writeln('Do you wish to display how the security of this ');
Writeln('dwelling can be improved?   Press Y or N ');
Writeln;
Readln(Display);

If Display='Y' then

Begin

If Blank1 then

Writeln('This dwelling incorporates satisfactory security');
Writeln('                                     measures');

Writeln;

ELSE

Writeln('The following measures can be taken:');
If One5='Y' then
Writeln('  Restrict access from front to rear of property');
If One6='Y' then
Writeln('  Ensure nothing obstructs the view of the dwelling

```

from the road');

```
If One8='Y' then
Writeln(' Keep the porch locked');
If One9='Y' then
Writeln(' Front doors should not be obscured by projections
or recesses');
If Two0='Y' then
Writeln(' Ensure there is a secure fence around the garden
which is difficult to climb ');
If Two4='Y' then
Writeln(' Ensure that any first floor windows which can be
reached from the ground floor extension are fitted
with window locks');

If Three1='N' then
Writeln(' Fit a burglar alarm security system');
If Three2='N' then
Writeln(' Fit window locks on all openable windows');
If Three3='N' then
Writeln(' Fit automatic lights on the outside of the
building');
If Three4='N' then
Writeln(' Property should form part of a Neighbourhood Watch
Scheme');

End;

Writeln;
Writeln;
Writeln(' If you wish to re-run the program press R');
Writeln;
Writeln(' Press Q to Quit');

END.
```

## APPENDIX G

### ASSESSMENT OF DWELLINGS USING SCALE OF VULNERABILITY

To be used in conjunction with printed notes on plans in Figures 6.1. and 6.2.

#### ASSESSMENT OF DWELLING HIGHLIGHTED IN PINK ON FIGURE 6.1.

Supplementary Information used in the assessment:

Private estate 1 mile from Local Authority Housing Estate.

Each property has wrought iron lockable gates restricting access from front to rear.

A 1.8m high fence is erected at the rear and sides of each property.

Window locks are fitted to all openable windows.

A burglar alarm security system is fitted to each property

#### ASSESSMENT OF DWELLING HIGHLIGHTED IN YELLOW ON FIGURE 6.2.

Supplementary Information used in the assessment:

Property is located on a Local Authority Housing Estate.

Window locks are not fitted.

A burglar alarm security system is not fitted.

QUESTIONNAIRE FILLED IN WITH THE INFORMATION FOR FIGURE 6.1.

SECTION 3

To be answered by all

15) Is there easy external access from the front to the rear of the house?

Yes  No

16) Does the front garden have trees or shrubs, or any other thing which can obstruct the view to or from the road?

Yes  No

17) Does the front garden have a fence which can obstruct the view from the road?

Yes  No

18) Does the front door have a porch which is normally kept unlocked?

Yes  No

19) Is the front door recessed or partly obscured by projections from the building?

Yes  No

20) Does the rear garden back onto a public road or footpath, or onto open ground?

Yes  No

21) Is the house situated fronting on a public road which has through access to the public?

Yes  No

22) Is the house on a council estate?

Yes  No

23) Is there a council estate within easy walking distance from your house?

Yes  No

24) Does the house have an extension on the ground floor which has a flat roof from which upper floor windows can be reached?

Yes  No

25) Can the front of the house be easily seen by people passing by, and by neighbours?

Yes

No

26) Is access to the side or rear of the house obstructed in any way?

Yes

No

27) Can the side of the house be seen easily by people passing by or by neighbours?

Yes

No

28) Is the back garden fully enclosed by a fence which is difficult to climb over?

Yes

No

29) Is the back garden fully enclosed by neighbours gardens?

Yes

No

30) Is the back door of the house over looked by neighbours?

Yes

No

31) Does the house have an alarm system, with the alarm box easily seen from the front of the house?

Yes

No

32) Is the house fitted with window locks?

Yes

On all windows

All ground floor windows

Some windows

No

33) Is access to the house well lit at night ?

Yes

No

34) Are you a member of a Neighbourhood Watch Scheme?

Yes

No

COMPUTER PRINTOUT OF EVALUATION PROGRAM RUN FOR DWELLING 6.1.

The total score for this dwelling is 22

This dwelling is not likely to be burgled

Dwellings are classified as:

- Very Safe
- Reasonable Safe
- Just Safe
- Slightly Vulnerable
- Reasonably Vulnerable
- Very Vulnerable

This dwelling is classified as:

VERY SAFE

Do you wish to display how the security of the dwelling can be improved? Press Y or N

Y

The following measures could be taken:

Front doors should not be obscured by projections or recesses.

Property should form part of a Neighbourhood Watch Scheme.

If you wish to re-run the program press R

To Quit press Q

QUESTIONNAIRE FILLED IN WITH THE INFORMATION FOR FIGURE 6.2.

SECTION 3

To be answered by all

15) Is there easy external access from the front to the rear of the house?

Yes  No

16) Does the front garden have trees or shrubs, or any other thing which can obstruct the view to or from the road?

Yes  No

17) Does the front garden have a fence which can obstruct the view from the road?

Yes  No

18) Does the front door have a porch which is normally kept unlocked?

Yes  No

19) Is the front door recessed or partly obscured by projections from the building?

Yes  No

20) Does the rear garden back onto a public road or footpath, or onto open ground?

Yes  No

21) Is the house situated fronting on a public road which has through access to the public?

Yes  No

22) Is the house on a council estate?

Yes  No

23) Is there a council estate within easy walking distance from your house?

Yes  No

24) Does the house have an extension on the ground floor which has a flat roof from which upper floor windows can be reached?

Yes  No

25) Can the front of the house be easily seen by people passing by, and by neighbours?

Yes

No

26) Is access to the side or rear of the house obstructed in any way?

Yes

No

27) Can the side of the house be seen easily by people passing by or by neighbours?

Yes

No

28) Is the back garden fully enclosed by a fence which is difficult to climb over?

Yes

No

29) Is the back garden fully enclosed by neighbours gardens?

Yes

No

30) Is the back door of the house over looked by neighbours?

Yes

No

31) Does the house have an alarm system, with the alarm box easily seen from the front of the house?

Yes

No

32) Is the house fitted with window locks?

Yes

On all windows

All ground floor windows

Some windows

No

33) Is access to the house well lit at night ?

Yes

No

34) Are you a member of a Neighbourhood Watch Scheme?

Yes

No

COMPUTER PRINTOUT OF EVALUATION PROGRAM RUN FOR DWELLING 6.2.

The total score for this dwelling is -28

This dwelling is likely to be burgled

Dwellings are classified as:

Very Safe  
Reasonable Safe  
Just Safe  
Slightly Vulnerable  
Reasonably Vulnerable  
Very Vulnerable

This dwelling is classified as:

VERY VULNERABLE

Do you wish to display how the security of the dwelling can be improved? Press Y or N

Y

The following measures could be taken:

Restrict access from front to rear of property.  
Ensure there is a secure fence around the garden over which it is difficult to climb.  
Fit a burglar alarm security system.  
Fit window locks on all openable windows.  
Fit automatic lights on the outside of the building.  
Property should form part of a Neighbourhood Watch Scheme.

If you wish to re-run the program press R

To Quit press Q

## SELECTED BIBLIOGRAPHY

ALLATT P, "Residential Security: Containment and Displacement of Burglary", The Howard Journal of Criminal Justice, June 1984.

ALLATT P, "Fear of Crime: The Effect of Improved Residential Security on a Difficult to Let Estate", The Howard Journal of Criminal Justice, Oct 1984.

ANGLE S, Discourging Crime through City Planning, Paper No 75, University of California, Institute of Urban and Regional Development, Berkely, 1968.

BALDWIN J & BOTTOMS A E, The Urban Criminal, Tavistock, London, 1976.

BENNETT T, Situational Crime Prevention from Theory into Practice, HMSO, London, 1986.

BENNETT T, An Evaluation of Two Neighbourhood Watch Schemes in London, University of Cambridge Institute of Criminology, 1987.

BENNETT T & WRIGHT R, Burglars on Burglary, Gower, Farnborough, 1984.

BOTTOMLEY K & COLEMAN A, Understanding Crime Rates, Gower, Farnborough, 1981.

BRANTINGHAM P J, & FAUST F L, "A Conceptual Model of Crime Prevention", Crime and Delinquency No 22, 1976.

BRITISH STANDARD 1722 Part 10, Anti-intruder chain link fence and welded mesh, British Standards Institution, London, 1990.

BRITISH STANDARD 5357, Code of Practice for installation of Security Glazing, British Standards Institution, London, 1985.

BRITISH STANDARD 6799, Code of Practice for Wire Free Intruder Alarm Systems, British Standards Institution, London, 1986.

BRITISH STANDARD 6800, Specification for Home and Personal Security Devices, British Standards Institution, London, 1986.

BRITISH STANDARD 7230, Code of Practice for Article Theft Detection Systems, British Standards Institution, London, 1986.

BRITISH STANDARD 8220, Guide for Security of Buildings against Crime: Part 1, Dwellings, 1986, Part 2, Offices and Shops, 1987, British Standards Institution, London.

BRODY S. The Effectiveness of Sentencing, Home Office Research Study No 35, HMSO, London, 1976.

BUGG D & BRIDGES C, Burglary Protection and Insurance Surveys, Stone & Cox, London, 1979.

- BURDEN P, The Burglary Business and You, Macmillian, London, 1980.
- CHAIKEN J, LAWLESS M & STEVENSON K, Impact of Police Authority on Crime: Robberies on the New York City Subways System, Rand Corporation, Santa Monica, 1974.
- CHARLETT A J, Theft, Vandalism and Trespass on Building Sites, MPhil, Nottingham University, 1985.
- COLEMAN A, "More Sensitive House Design Criteria" House Builder, Oct 1987.
- COLEMAN A, Utopia on Trial, Hilary Shipman, 1985.
- CORNISH D & CLARKE R, Situational Prevention, Displacement of Crime and Rational Choice Theory, Situational Crime Prevention from Theory into Practice, HMSO, London, 1970.
- CRIME AND JUSTICE: An Annual review of Research, University of Chicago Press, Chicago, 1980.
- CRIME PREVENTION NEWS, Home Office, HMSO, June 1989.
- CRIMINAL STATISTICS FOR ENGLAND AND WALES, HMSO, London, 1987.
- EKBLOM P, Getting the Best out of Crime Analysis, Crime Prevention Unit Paper 10, Home Office, London, 1988.
- ENNIS P H, Criminal Victimization in the United States, Government Printing Office, Washington DC, 1967.
- GENERAL HOUSEHOLD SURVEY. HMSO, London, 1980.
- GUIDENCE ON HOW SECURITY OF NEW HOMES CAN BE IMPROVED, NHBC, 1986.
- GLADSTONE F J, Co-ordinating Crime Prevention Efforts, Home Office Research Study No.62, HMSO, London, 1980.
- HAKIM S & RENGARD G, Crime Spillover, Sage, Beverly Hills, 1981.
- HANDBOOK OF BUILDING SECURITY, Ed. Hopf P, McGraw Hill, 1979.
- HARALAMBOS M, Sociology Themes and Perspectives, University Tutorial Press, Slough, 1980.
- HOOD R & SPARKS R, Key Issues in Criminology, Weidenfeld & Nicolson, London, 1970.
- HOPE T, Implementing Crime Prevention Measures, Home Office Research Study No.86, HMSO, London, 1985.
- HUGH M & MAYHEW P, The British Crime Survey: First Report, Home Office Research Study No.76, HMSO, London, 1983.

HUGH M & MAYHEW P, Taking Account of Crime: Key Findings from the 1984 British Crime Survey, Home Office Research Study No.85, HMSO, London, 1985.

HUGHES D & BOWLER P, The Security Survey, Gower, Aldershot, 1982.

HUSAIN S, Neighbourhood Watch in England and Wales: A Locational Analysis, Crime Prevention Unit Paper 12, Home Office, London, 1988.

JACKSON H M & WINCHESTER S W, Residential Burglary, Home Office Research Study No.74, HMSO, 1982.

JACOBS J, The Death and Life of the Great American Cities, Penguin, Harmondsworth, 1965.

KIRKHOLT BURGLARY PREVENTION PROJECT, Crime Prevention Unit Paper 13, Home Office, London, 1988.

KOLODNEY S, A Study of the Characteristics and Experiences of California Prisoners, California Public Systems Inc., San Jose, 1970.

MAGUIRE E M, Burglary as Opportunity, Home Office Research Bulletin No 10, HMSO, 1980.

MAGUIRE M & BENNETT T, Burglary in a Dwelling, Heinemann, London, 1982.

MAINWARING M, Security Design for Residential Developments, Undergraduate Dissertation, Nottingham (formally Trent) Polytechnic, 1988.

MAWBY R, Policing the City, Saxon House, Farnborough, 1979.

MAYHEW P, CLARKE R, STURMAN A & HUGH J, Crime as Opportunity, Home Office Research Study No 35, HMSO, London, 1976.

McCLINTOCK F H & AVISON H N, Crime in England and Wales, Heinemann, London, 1968.

MINTEL, Market Intelligence, Home Security, Sept 1988.

NEWMAN O, Defensible Space. People and Design in the Violent City, Architectural Press, London, 1972.

PHILLPOTTS G J O & LANCUCKI L B, Previous Convictions, Sentence and Reconviction, Home Office Research Study No 53, HMSO, London, 1979.

PROTECT YOUR HOME, Royal Insurance, Undated.

REPPETTO T A, "Crime Prevention & the Displacement Phenomenon", Crime and Delinquency No 22, 1976.

REPPETTO T A, Residential Crime, Bellinger, Cambridge Mass, 1974.

RILEY D & MEYHEW M, Crime Prevention Publicity: an assessment, Home Office Research Study No 63, HMSO, London, 1980.

RUSSEL J A, A Guide to Neighbourhood Watch Schemes, 'A' Department, Metropolitan Police, Undated.

SCARR H A, Patterns of Burglary, US Department of Justice, 1972.

SECURED BY DESIGN INFORMATION PACK, South East Region Senior Crime Prevention Conference, 1989.

"SECURING YOUR HOME", Which Magazine, Nov 1989.

SHAW C & MCKAY H, Juvenile Delinquency, Heineman, London, 1982.

SKOGAN W G & MAXFIELD M, Coping with Crime: Individual and Neighbourhood Reaction, Sage, London, 1981.

SPARKS R F, GLENN H & DODDS D, Surveying Victims, Wiley, London, 1977.

WALLER I & OKIHRO N, Burglary: The Victim and the Public, University of Toronto Press, Toronto, 1978.

WILKINSON P, Terrorism and the Liberal State, Macmillian, London, 1977.

WOOD E, Housing Design: A Social Theory, New York Citizens Housing & Planning Council, 1961.

# Safe as houses?

By R. J. Gatepain BSc MASI MBIM & A. J. Charlett BA M Phil MCIQB

Traditionally, house security has been identified with the provision of locks and bolts. However, as the subject of security has received greater attention in recent years, more consideration is now being given to other factors which may be seen as having an influence on the vulnerability of a property to crime.

This has led to a more detailed examination of the relationship between people's behaviour and the inherent environment. The work carried out by such people as Newman<sup>1</sup> and Jacobs<sup>2</sup> has established a clearer understanding of the relationship between certain environmental factors and the incidence of crime. This has led Architects to consider the influence of their design on these environmental factors. Thus, by implication, their designs may directly affect the vulnerability of properties to crime within residential developments.

A two-fold approach to the subject of house security must therefore be considered. Initially, environmental factors must be reviewed and their influence on the incidence of crime assessed. This will ensure that a design which is sympathetic with good security features is developed. Subsequently, physical security measures can be assessed and a suitable system incorporated into the properties as they are constructed.

## Environmental factors

The location of the development will have an important influence on the degree of security required, whilst the design of the development will significantly affect its vulnerability to crime.

The following environmental factors have been found to have a significant influence on the crime rate of the area and the likelihood of a dwelling within that area being burgled:

- (i) The types of buildings in the immediate neighbourhood.  
Certain types of buildings attract certain types of people eg. a hostel for the rehabilitation of offenders or social security offices. The conditions and tenancies of dwellings can also give an indication as to the likelihood of a burglary occurring.
- (ii) Parks, commons and waste ground in the vicinity.  
Where people are allowed free and unobstructed movement around an area, they are unlikely to be challenged or have their motives for being there questioned.
- (iii) Levels of traffic.  
Where large numbers of vehicles regularly use the area, strange vehicles do not stand out or raise suspicion.
- (iv) Facilities within the area likely to give outsiders a legitimate reason for being there, or for attracting them into the area.
- (v) The proximity of low income housing or run down areas.  
The majority of burglars commit their crimes within a two-mile radius of their homes, which are frequently situated in these areas.

- (vi) Any proposed development plans for the area.

Plans to build new roads, low income housing or public use facilities will significantly affect the vulnerability of an area to crime.

- (vii) Levels of illumination.

Criminals are discouraged if high lighting levels increase the chances of them being seen.

- (viii) Types of position of roads and footpaths through the area.

Where access and egress to an area is freely available encouragement is given to the criminal to wander unchecked and at will through the area.

- (ix) Amount and proximity of alleyways.

These are frequently concealed and make entry into the side or rear of a property relatively easy.

- (x) Amount of privacy or cover given to dwellings.

Burglars prefer to work where they cannot be seen. Tall hedges or fences can provide them with the cover they need to effect an entry unobserved.

## Degree of vulnerability

From the above it can be seen that the first six items are existing features which can materially affect the degree of vulnerability of the proposed development to crime. It is imperative, therefore, that a survey of the area be undertaken before design work commences in order to establish the existence of such factors and their possible effect.

Liaison with the local police to determine the level of burglary recorded for the area would also be beneficial. However, recent enquiries<sup>3</sup> among house building firms in the Midlands suggest that less than 25% of Architects and designers actually visit the area of the proposed development before design work commences. This compares adversely with the likelihood of a pre-design visit to a non-residential development site. Clearly, in the latter case, the Architect can see the need for a site visit to ascertain information which will materially affect the design of the proposed building, but it is evident that factors which could affect the security of houses on a development should be as important to determine prior to the commencement of design as topographical or geophysical factors.

The last four environmental factors in the above list are directly related to the way in which the development is designed. Thus, the Architect or designer can make a significant contribution to the vulnerability of a residential development to crime. Features such as consistent illumination, avoidance of potential areas of concealment, such as alleyways and the siting of houses to provide mutual surveillance, can readily be designed into a development to make it less vulnerable to crime.

## Physical security

Although design and planning to reduce security problems within a development are essential, the importance of good physical security measures should not be overlooked. The measures available for providing physical security to properties are diverse in operation, cost and effectiveness. It is therefore important to select the most appropriate methods for the situation under consideration. Here again Architects and designers can make a fundamental contribution to the security of the properties they design, by the siting of concealed access points such as back doors or low roofs providing convenient access to upper floor windows. They may also influence the degree of security possessed by a dwelling in specifying good quality doors and windows incorporating high standard locks and bolts.

Too often the specification of these important determinants of effective house security has been left to the whim of the speculative developer. This the standard for these components has, in the past, largely been based on cost rather than performance parameters. Recent research<sup>4</sup> indicates that many house builders display scant knowledge of the variety of security devices available and their comparative effectiveness.

## Security provisions

This attitude is now undergoing perceptible change. The Government's recent crime prevention campaign has raised public awareness to the importance of crime prevention and how easy effective crime prevention methods are to attain. Purchasers of new houses are now showing an interest in the incorporation of security provisions and the NHBC has now introduced regulations on the provision of security measures for new houses. This has prompted a number of speculative residential developers to take a closer interest in the provision of security measures on new developments.

A need therefore exists for Architects to become involved in combatting crime through the environmental design of the proposed development, coupled with the production of specifications to provide enhanced house security. The current home office initiative to introduce a 'Secure by design' scheme, which has been supported by a number of police forces and adopted by an increasing number of speculative residential developers, indicates that the implementation of the proposals considered here could eventually become a reality.

## References

1. Newman D, *Defensible Space. People and design in the Violent City*. Architectural Press, London 1972.
2. Jacobs J, *The Death and Life of the Great American Cities*. Penguin, Harmondsworth 1965.
3. Gatepain R, Research carried out in conjunction with Lincolnshire Police.
4. Ibid.

## SECURITY REGULATIONS AND HOUSEBUILDING

The statistics relating to burglaries in residential development make for depressing reading. Approximately 750,000 burglaries are attempted each year and in about 60% of these, entry is achieved. The cost in terms of emotional distress to occupants and actual damage to property is high and is a subject of concern to the public and the government. As a consequence, security in buildings is increasing in importance and new security devices have been produced to supply an ever-increasing market.

The problem of burglary is little different in the United States of America. However, during the last 18 years the issue of security has been addressed there in a different way and could provide a useful model for Britain to adopt.

In 1972 the city of Concord, California, USA, was the first city to introduce a code which imposed minimum standards with regard to the security of locks, doors, windows and all potential points of illegal entry to any building that is constructed or substantially remodelled. The code lays down a minimum standard of security for buildings which must be achieved with respect to materials and workmanship.

### CRIME PATTERNS

Now, throughout California, all building designs and development plans must be inspected with a view to checking on security matters in relation to the crime patterns of the particular location where the building will be constructed.

As in Britain, the police in Concord will provide an official to conduct security surveys of existing homes and to identify substandard locks, doors and windows. The Concord Police Department are of the opinion that this is a poor use of police manpower and that it would be better utilised by working with city officials devising mandatory security measures.

The police department in Concord stated that there is value in having police officials meet with the city planning department staff when new developments are planned in order to make recommendations concerning security. This is something that most police forces in Britain do, and certainly the Lincolnshire Police, who have been liaising with a number of local authority planning departments, have found this to be beneficial. In California it is the city's building official and not the police department which is responsible for the enforcement of the security codes.

The introduction of the codes in 1972 did bring criticism from builders and developers who maintained that it increased the expense of a project and involved another possible source of bureaucracy. The Concord police, however, state that their building security code has had a positive and beneficial effect on assisting in the prevention of burglaries.

In the light of experience in the USA, would it not be a simple matter to introduce a similar code

By R. J. GATEPAIN BSC, MASl, MBIM,<sup>1</sup> AFFILIATE LECTURER, AND W. G. CARTER MSc, MClOB, MIAS, PRINCIPAL LECTURER, DEPARTMENT OF BUILDING AND ENVIRONMENTAL HEALTH, NOTTINGHAM POLYTECHNIC.

in England and Wales by making it part of the Building Regulations and introducing an Approved Document on Security? Such a document would be reasonably simple and inexpensive to produce. In the Building Regulations there already exists an established method of enforcing standards in building. Such a document could also relate to other types of buildings as well as dwellings. This would then make the Local Authority or the National House-Building Council (NHBC) responsible for ensuring that the standards of security were implemented.

The introduction of such a code in this country would not prevent all burglaries, in the same way that fire precautions do not prevent all fires. What such a code would do is cut down the risk. It is a fact that the majority of burglaries are committed by opportunists; if the opportunity is denied in some way, might not the risk of burglary lessen?

It can be argued that such a scheme will not cut down crime but merely displace it, i.e. cause the burglar to move to an easier target. However, experience in the USA has shown that increasing security forces opportunistic burglars to take risks which might be greater than either their ability or their perception of a justifiable reward.

It is suggested that unless commerce and industry is legally obliged to undertake change (unless there is an economic advantage), it seldom happens. Aspects of security are likely to be no exception. Unless minimum standards are laid down by law, the majority of speculative house builders will continue to install security fittings which might be regarded as barely adequate. The approach adopted by some builders is to build as cheaply as possible in order to be competitive. Further, research has shown that some house buyers are unwilling to meet the additional cost, because they have an indifferent attitude towards security matters.

### COST EFFECTIVE?

The introduction of minimum security standards, could reduce the instances of opportunist burglaries, thus saving the resources of the police, the courts and the prisons. On balance, whilst the full costs have yet to be accurately determined, the cost of introducing and enforcing such regulations is potentially cost effective.

Despite the introduction of security measures it is unlikely that the professional burglar will be deterred. Such measures would not be designed for that purpose, but would be aimed at the 90%

RON GATEPAIN IS THE MANAGING DIRECTOR OF A PROPERTY DEVELOPMENT COMPANY BASED IN LINCOLNSHIRE AND AN AFFILIATE LECTURER IN CONSTRUCTION TECHNOLOGY AND MANAGEMENT AT NOTTINGHAM POLYTECHNIC. HE IS ALSO AN OFFICER IN A SPECIALIST UNIT OF THE TERRITORIAL ARMY RESPONSIBLE FOR SECURITY, AND A MEMBER OF THE LINCOLN CRIME PREVENTION PANEL.

GEOFF CARTER IS A PRINCIPAL LECTURER IN BUILDING TECHNOLOGY AND THE CONSTRUCTION STUDIES RESEARCH DIRECTOR IN THE DEPARTMENT OF BUILDING AND ENVIRONMENTAL HEALTH, NOTTINGHAM POLYTECHNIC. WHERE SECURITY IS ONE OF SEVERAL RESEARCH TOPICS HE IS CURRENTLY SUPERVISING. GEOFF CARTER IS ALSO CHAIRMAN OF THE IAAS EXAMINATIONS AND ADMISSIONS COMMITTEE AND A NATIONAL COUNCIL MEMBER.

of opportunist burglaries.

Before any standards can be laid down in this country, research is needed in order to determine how strong certain building components will have to be made in order to withstand an attempted forced entry.

In the USA research has been undertaken for several years to determine these standards and in a number of States positive action has been taken. In 1971 California introduced a Bill which required the Department of Justice to develop, recommend and continually review building security standards in order to reduce the risk of burglary.

### FAILURE FORCE

Various testing programmes have been undertaken in the USA since 1974 by the California Crime Technological Research Foundation (CCTRF) to determine the capabilities of doors and windows in dwellings and light commercial buildings to withstand forced entry. The report published by CCTRF gave the amount of force which would cause a failure of the material or components. Following on from this some States now have a code which lays down resistance ratings in foot pounds of energy for windows and doors.

The National House-Building Council have started to address the problem of security in dwellings. In the NHBC technical newsletter entitled Good Housebuilding, published in June 1980, it stated that from January 1989 security measures must be adopted for all new dwellings. This should be looked upon as the first positive introduction to security for housebuilding. It should lead to the introduction of improved security requirements for all dwellings with the NHBC charged with the responsibility for enforcement. Is it not possible for the NHBC code to form the basis for the first mandatory security requirements enforced by Local Authorities as well as the NHBC?

Regrettably it is sometimes necessary to compare British custom and practice with that of another country, especially when it appears that we currently accept a lower standard. However, it is possible that with the introduction of one piece of legislation dealing with security matters, we could bridge the 18 years deficit. Alternatively, it may be that developers and house builders will take it unto themselves to produce and operate an effective code of practice on security matters. If they did society at large could benefit.

### References

1. Gatepain R.J., Research being conducted at Nottingham Polytechnic in collaboration with Lincolnshire Police.
2. Storms H, Building Security Codes, Handbook of Building Security, McGraw-Hill 1979.