

CRIME ON INDUSTRIAL ESTATES

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Police Research Group: Crime Prevention Unit Series

The Home Office Police Research Group (PRG) was formed in 1992 to carry out and manage research in the social and management sciences relevant to the work of the police service and Home Office policy divisions. One of the major police department divisions which acts as customer for the PRG is the Home Office Crime Prevention Unit which was formed in 1983 to promote preventive action against crime. It has a particular responsibility to disseminate information on crime prevention topics.

The object of the present series of occasional papers is to present research material in a way which should help and inform practitioners, including the police, whose work can help reduce crime.

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Foreword

Crime is an important issue to businesses, and a considerable amount of attention has focused on crime prevention in the retailing and financial sectors. The manufacturing sector and industrial estates have, by comparison, been a relatively neglected target for crime prevention, yet these areas play an important part in the economic life and well being of our towns and cities. This study provides the first systematic description in this country of the crime problems facing businesses on industrial estates and identifies the sort of strategic action that might be taken to prevent such problems in the future.

The study was funded by English Estates, a large industrial estate landlord, and the Home Office and the findings were first published in two volumes by the authors in 1990. In order that the lessons from this study should reach a wider audience, the authors were asked to produce an abridged version of their original reports. This CPU paper is the result.

The conventional crime prevention approach has been to encourage individual units on industrial estates to take target hardening measures. This study suggests that a more effective approach would be to focus on the estate as a whole, through measures such as the design and layout of the estate, security patrols and policing activity, and the management of retailing activity. This requires landlords to take a much more active role in the development of crime prevention strategies, and for tenants to co-operate at the local level in developing joint strategies.

I M Burns
Deputy Under Secretary of State
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March 1994

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Executive Summary

Section 1. The report documents the findings of the first research to be carried out on crime on industrial estates. The research was carried out in three stages: stage 1 consisted of a detailed study of five estates. Stages two and three extended the research and were based on interviews with 585 managers on a range of estates (stratified by size, location and region) throughout northern England. This paper summarises the findings from the latter two stages.

Section 2. Crime is by no means the only problem on industrial estates, and in general, estates have as great a variation in the level of crime as residential neighbourhoods. However, the worst industrial estates have more crime than any residential area. Repeat victimisation is also a characteristic of crime on industrial estates. Victimization of businesses on estates can produce the same stress problems for managers and employees as domestic victimisation. Few companies have clear policies for dealing with victimisation.

Section 3. Businesses have invested heavily in additional security precautions in order to protect their units. Not all of this expenditure is cost effective, or based on known crime threats, and businesses are not receiving adequately informed guidance. Companies on estates take little co-operative action against crime.

Section 4. Managers reported most crimes to the police unless an employee was suspected, when civil action was preferred. Police input on estates was rare, other than to respond to crime reports. Managers' overall assessment of the policing of industrial estates considered it poor and far below that for residential neighbourhoods. The police need to re-assess their methods of policing industrial estates.

Section 5. The level of crime on an estate is greatly influenced by its design, layout and location. Careful attention to these aspects in the future could reduce the crime risk. However, the mechanisms which could help tenants learn from previous mistakes in industrial unit design are currently poorly developed.

Section 6. The report concludes with a series of action points to reduce crime on industrial estates. These are specified for:

- landlords
- police
- business
- insurance companies
- local authorities

1. The Research

Background

Most of the empirical knowledge about crime in Britain is not about crime against business, because research has focused either on crimes against citizens in general, or on crime in residential areas. For example, an important source of detailed knowledge about crime in contemporary Britain – the Home Office's *British Crime Survey* – is based on a survey of the crime problems of households and asks only a few questions about crime at work. So far there has been no equivalent survey of crimes against business.

Some research has been done on crime at work. Something is known about crime in relation to type of employment (Mayhew *et al*, 1989); in retailing (Laycock, 1985; Ekblom, 1986; Burrows, 1988; Ekblom & Simon, 1988; Phillips & Cochrane, 1988; Hibberd, 1990); in financial services (Ekblom, 1987; Austin, 1988); and in the public services (Smith, 1987). There is also work on particular crimes within business, such as the growing body of work on fraud (see e.g. Arlidge and Parry, 1985; Leigh, 1982; and Levi, 1987). However, very little is known about crime against manufacturing industry and especially about crime in manufacturing and commercial areas – those parts of towns and cities given over almost entirely to factories and other commercial activity. The result is that whilst there is a fairly good knowledge base to use when developing strategies and general crime policies for households or residential areas, and to a limited extent for particular types of business or business crime, this is not the case for manufacturing and commercial areas. The main purpose of the research reported here was to try to fill this knowledge gap.

English Estates, a major industrial estate landlord, wanted to know more about crime on their estates. It was therefore agreed that *English Estates* would commission research on crime and other problems on their estates. The Home Office provided additional funding to enable the research to be extended to include other estates, so that it would be broadly representative of industrial estates in general.

In Britain, land use has come under legal planning controls, with attempts to zone it for different purposes. Whilst cities in Britain still have central areas which are largely non-residential and given over to retailing and commerce, many of the surrounding areas are mostly residential with a few shops but little in the way of manufacturing. Manufacturing has increasingly been concentrated in specifically industrial areas distinct from, even if near to, residential areas. In order to encourage this process and to foster new businesses, speculative industrial estates (or industrial parks) have been built with units for businesses to rent or buy. These vary in size from those with 50 plus factories in the major contributions, to those with 10 to 20 units in villages built to develop employment in rural areas. Similarly, the size of the units on the estates varies from very large factories to small garage-sized workshops designed for companies who

may only employ two or three workers. The developers of such estates sometimes have been private companies, sometimes local government trying to promote employment in their area, and sometimes government or quasi-government agencies charged with trying to create work in economically depressed areas. These industrial estates have become the major location for manufacturing in Britain, are increasingly a major location for wholesaling, and, to a lesser extent, house some specialist forms of 'out-of-town' retailing.

Though there is great variety, the 'typical' industrial estate comprises a number of identical units or 'sheds', set along a road, with parking nearby for employees and visitors. Often smaller units are grouped together in terraces facing each other, with car parking, delivery space and a place for rubbish skips between them. The roads on such estates are often privately owned by the estate landlord, rather than being public highways. There will be some attempt at landscaping (bushes etc.) on most modern estates. It is rare for many facilities to be provided. Sometimes there might be one shop for newspapers, sandwiches etc., but more commonly the only communal facility is a notice board giving the names of the companies occupying the units. Public telephones and post boxes have to be found in nearby residential areas, whilst small vans ply a trade bringing round sandwiches and fast food for the workers' lunch.

Research method¹

Since there was no systematic information about the problems of crime on industrial estates, the project was carried out in three stages. Stage 1 consisted of a very detailed study of five estates, in two areas of northern England, and was carried out between September 1989 and March 1990. The study provided a great deal of very useful information about crime on industrial estates and how it was responded to by tenants, landlords and police (Johnston *et al*, 1990). This initial study had limitations because it was based on only five estates, but it nevertheless provided the information necessary to design the next stages of the research.

Based on this initial study, a questionnaire was developed which could be used to interview the managers of businesses on a larger number of industrial estates. Stage 2 involved administering this questionnaire to 402 tenants on estates throughout the north of England, owned or managed by *English Estates*. Stage 3 consisted of interviews with a matching sample of 183 tenants on estates owned by other landlords. Stages 2 and 3 were intended to provide much more broadly based information with which to examine the general problem of crime on industrial estates, and were carried out between April and July 1990.

The research was documented in two reports in 1990 (Johnston *et al*, 1990a and 1990b). This paper summarises the findings presented in the second of these reports.

¹For a more detailed account of the research method, see Johnston *et al*, 1990b

The sample

To represent the variety of industrial estates the sample of *English Estates'* estates was stratified by a number of dimensions:

size: small estates (less than 15 units), medium estates (less than 30 units) and large estates (more than 40 units);
location: in villages or small market towns, in large towns, and in large conurbations;
region: following *English Estates'* administrative areas of Cumbria, Cleveland, Merseyside, South Yorkshire, Derbyshire and Northumbria provided a range of estates across England northwards from Cheshire and Derbyshire.

For half of the estates so chosen, the nearest estate with the same characteristics, but not owned by *English Estates*, was used as a matching estate. In total, 41 estates were surveyed.

The units on each estate were roughly divided on the basis of size into small workshops, large workshops and factories. The survey company, *Public Attitude Surveys*, interviewed the person in charge of each unit on all the estates – except where an estate had more than six small workshops, in which case eight or ten units (depending on the size of the estate) were chosen at random for interviewing.

The fieldwork

The interviewers were instructed to conduct the interview with the most senior on-site manager available, or, if no manager worked on-site, with the person responsible for the unit. Before the interviews, all tenants received a letter from either *English Estates* or the researchers explaining the purpose of the study. The response rates achieved for these interviews were satisfactory, with an overall rate of 85% for Stage 2 and 74% for Stage 3.

The questionnaire used was developed from the interview schedule used in Stage 1, modified on the basis of the results. Since the questionnaire was to be administered by *PAS's* interviewers, rather than the Sheffield researchers themselves, it was further refined by dynamic piloting on two *English Estates'* estates that were not to be included in the final research, to ensure that it worked successfully in this slightly different operational environment.

The interviews were designed to elicit information about what kinds of problems, whether criminal or not, industrial estates faced; how they attempted to deal with these, and what help, if any, they received from external agencies. The questionnaire had seven sections which covered:

- questions about the company;
- knowledge about others on the estate;
- what problems the company had on the estate;
- a detailed crime survey;
- attitudes towards crime and fear of crime;
- what security precautions were taken and what advice received;
- contact with the police and other agencies.

The interviews with managers, or the most senior on-site person, produced the most information possible from one interview about each business and its employees. The disadvantage of this method was that whilst it was adequate for discovering the direct problems of the business, when it came to the problems experienced by employees individually and especially outside the unit, the study had to rely on the manager's knowledge of what had happened. This must be borne in mind since it means that the results reported below may underestimate the problems on industrial estates for individual employees, although since many of the businesses were quite small, managers were likely to know about problems faced by their staff.

In addition to the interview on the selected estates, each estate, and its surrounding area, was physically surveyed by a member of the Sheffield research team. Each individual unit was surveyed to ascertain its size, how well maintained it was, what obvious security devices or precautions had been taken, whether vulnerable material was lying around outside the unit, and any other features considered relevant to crime risks or prevention. The estate as a whole was also surveyed to record its general security, physical condition, whether it had roads or footpaths going through it and how much they were being used, and whether the estate was being used for purposes other than business, such as walking dogs or as a playground. Finally, the areas on all sides of the estate were surveyed for the land use, fencing or other barriers, and, if housing, its type and condition

The estates

The estates included in the samples were very varied, ranging in size from those covering several acres (42% of the estates) to small estates of about an acre (22% of the estates). The number of units on the estate also varied greatly as Table 1 shows,

Table 1: Number of units on each estate

	% of estates
51 + units	26
31 – 50 units	6
21 – 30 units	33
11 – 20 units	30
less than 10 units	5

from those with more than fifty units (26%) to those with less than ten (5%). This means that the research, as intended, covered the full range of industrial estates which currently exist. Most of the estates contained a mixture of different sized units, but there were a fair number of estates (20%) that only had workshop sized units, as is found especially on some rural developments and some science or technology parks.

The age of each estate was estimated during the physical survey, and three quarters of them appeared to have been built within the last ten years, although the sample included estates of all ages. Industrial estates in general do have a shorter planned life than residential developments, which ought to mean that the total stock can be more rapidly improved in crime prevention terms than is the case for the housing stock. This will be discussed later.

The range of goods being produced varied very considerably, although the great majority of companies were involved in producing some goods. Most companies, however, were also involved in some form of activity. For most, this involved warehousing of the goods they either manufactured or needed for their primary business. Over a quarter of companies were involved in retailing as a secondary activity, and taken together with retailing as a primary activity, about a third were carrying out retailing from the estate, which creates considerable movement of customers on and off the estates. The implication of this is that legitimate movement on the estates is not limited to a fairly predictable group of workers and deliverers as might at first appear, and this makes it more difficult to identify illegitimate movement.

Table 2: Activity on industrial estates

Activity	Main activity by unit size			Secondary activity
	Factories	Large workshops	small workshops	
Manufacturing	48	34	31	27
Retail	9	8	11	27
Wholesaling	6	12	14	42
Warehousing	2	4	3	0
Repairs & Maintenance	8	14	8	0
Building	2	0	2	0
Other Service Industry	16	15	22	0
Training	1	4	2	0
Other	8	9	7	4
Total	100%	100%	100%	100%

The businesses on the estates were very varied in terms of the number of people they employed. Over half of the small workshops had less than five employees, whilst some of the biggest factories had over a hundred. This range suggests that businesses on

industrial estates may have different crime problems, and the impact of crime both on the business and the employees may vary considerably.

Table 3: Number of employees

	Factories	Large workshops	Small workshops
Less than 5	11	25	56
5 - 10	15	37	28
11- 20	23	25	11
21-50	21	9	14
51-100	12	3	1
101+	18	1	0
Total	100%	100%	100%

Industrial estates are also subject to fairly rapid change. A third of the companies interviewed had been in their unit for less than a year, and almost 80% for less than five years. This is partly because the companies had only existed for a short time, but also because location is changed as business develops, or tenancy is released if the business fails. The implication for crime prevention is that, on the one hand, it ought to be possible to upgrade the security of units frequently, as new tenants move, but, on the other hand, a substantial proportion of managers on industrial estates will not be aware of past patterns of crime on the threats likely to face their business.

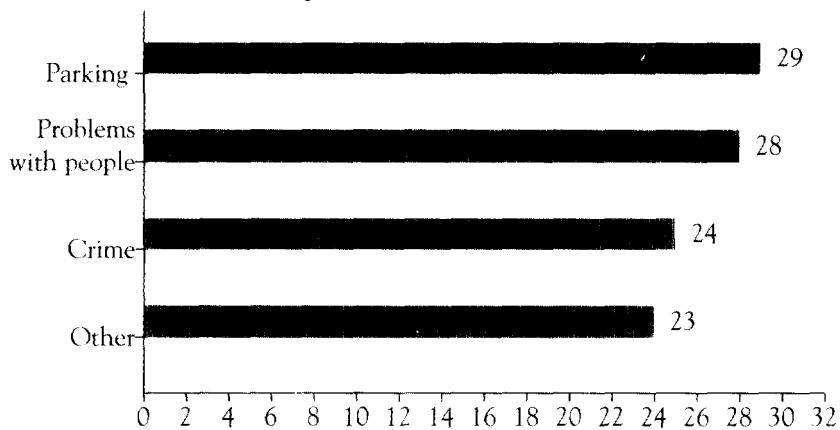
2. Crime on Industrial Estates

Problems on industrial estates

Before examining crime on industrial estates, it is important to place it in the context of other problems. Several of the estates studied had little crime, or indeed, few problems generally. On others, crime was not a great problem but tenants complained of other features of their estate. On a few estates, crime did present real difficulties for tenants, and on a very few, there were major problems with crime, compounded by numerous other problems.

Tenants were asked what they regarded as a problem or nuisance on their estate. As can be seen in Figure 1, crime was by no means the only problem.

Figure 1: Problems mentioned by tenants on industrial estates (%)



Problems with parking were mentioned by 29%, and were mainly caused by lack of parking facilities, but there were also numerous complaints about the parking of others working on or visiting the estate. There were also concerns about those using the estate as a thoroughfare, or children playing, and about litter and poor rubbish collection. Crime only accounted for a quarter of the problems mentioned, and this was mainly vandalism and break-ins. Furthermore, when people were asked to rate the seriousness of the problems they had mentioned, crime was rated no higher than the others.

Therefore, while the rest of this report is concerned with crime, it should be borne in mind that tenants have other problems that they regard as of equal or greater importance. As has also been found in public sector housing, it is only on the worst estates that crime becomes the major problem for tenants, and even then this is not always the case (see Bottoms *et al*, 1989).

Victimisation rates

Crime against business has sometimes been seen as less of a problem than crimes against individuals or households. The attitude has tended to be that “they can cope with it”, and “they can absorb the costs of crime”. The problem with this stereotype is that it treats businesses as things and forgets that in reality they consist of people.

The results of the present research show that the risk of victimisation on industrial estates varies at least as much as it does between different residential areas. On some of the estates very little victimisation had occurred, whilst on others victimisation was a major problem.

Providing a measure of the overall amount of crime is not simple. In victimisation surveys of residential neighbourhoods, the most frequent measure used is the proportion of individuals (or households) who have been the victim of any kind of crime over a given period. This shows the *prevalence* of crime – but if individuals are being victimised many times, it does not give an adequate measure of the *total incidence* of crime. Since the research data showed that on some of the industrial estates multiple victimisation was quite frequent, it was decided that a measure that reflected the total amount of crime was more useful in examining the problem of victimisation on industrial estates.

Consequently, a measure of crime was developed that shows up both the total volume and spread of different kinds of crime. Briefly, the method used was as follows.¹ The number of different kinds of crime incidents which had happened on an estate in the two years prior to the interview was weighted by the frequency of occurrence of those incidents and then summed to give an overall score per estate. This score is, of course, affected by the number of units on the estate (having more units gives more opportunity for victimisation) so the score was then divided by the number of units on the estate to give a rate of crime per unit for each estate. In other words, an incident rate was constructed for *all* offences, averaged out across the number of units.

The annual rate of crime per unit on the different estates varied from 0.1 to as high as 4.9 on one particularly bad estate, which means that on the best estate, a unit was likely to be victimised once every ten years, whilst on the worst estate, a unit was likely to be victimised five times each year. The average for all the estates was a crime rate of 0.8, meaning that on average, industrial estate units were likely to be victimised slightly less than once a year.

From the British Crime Survey we can calculate a simple annual victimisation rate per household (for household offences) and per person (for personal offences). Using the 1988 British Crime Survey data², this gives a rate for household offences of 0.46

¹Fuller details can be found in Johnson *et al*, 1990b, Table 5.1

²While there is a more recent British Crime Survey (1992) the data from the 1988 survey provides a better comparison for the time period covered by the industrial estates data.

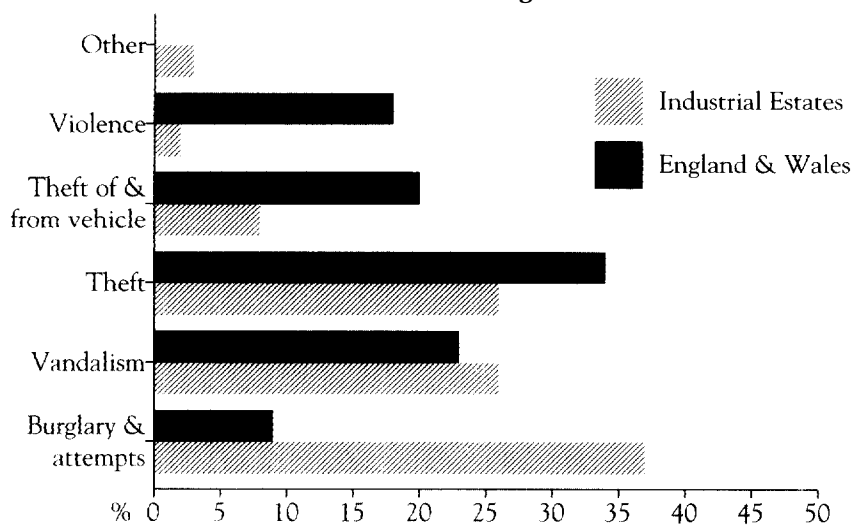
and for personal offences of 0.11 (Mayhew *et al*, 1989, Table A.1). There were very few personal offences on the estates, but comparing the British Crime Survey household rate with the crime rate in this study suggests that the average risk of victimisation on industrial estates is about twice that for residential areas.

In general then, industrial estates have higher rates of victimisation than residential areas. As in residential areas, there is considerable variation in the victimisation rates between industrial estates, but the worst estates have much higher rates of victimisation than anything found in residential areas in Britain.

The nature of the crime problem

Crime on industrial estates is predominantly against property and especially burglary, crimes of violence against the person being very rare (see Fig 2).

Figure 2: Proportion of offence types making up total victimisation: Industrial estates 1988-9 and residential crime England & Wales 1987*



*England & Wales data taken from the 1988 British Crime Survey (Mayhew *et al*, 1989)

Burglary

Over a third (37%) of victimisation on industrial estates involves burglary or attempted burglary, whereas in the 1988 British Crime Survey's study of victimisation, in residential areas it only accounted for 9% of victimisation. This finding is not especially surprising, since in police recorded crime figures, burglary of non-residential property is almost as common as burglary of residential property (Home Office 1989) yet residential property is far more numerous. Estimating the risk of burglary of residential property is difficult, but the British Crime Survey's best estimate is that

517,000 burglaries involving loss occurred in 1987 and that there were 19,818 million such properties in England and Wales (Mayhew *et al*, 1989). This would give a rate of 2.6% of residential properties burgled in England and Wales each year. The rate of similar burglary on the industrial estates averaged 9.7%, and varied from 0% to 28.5% per year. A unit on an industrial estate, therefore, is much more likely to be burgled than a residential property.

Furthermore, the incidence of multiple victimisation appears to be more common on industrial estates. 46% of those units who had experienced a burglary in the last two years, had experienced more than one incident. Data from the most recent British Crime Survey (Mayhew *et al*, 1993) shows that 18% of residential burglary victims had been burgled at least twice in the previous year. (It must be borne in mind that the British Crime Survey data relates to *one* year not two.) Thirty per cent of units on industrial estates had been burgled at some time during the tenancy of their unit, and 25% had suffered an attempted burglary. However, on the worst estates, 82% of units had been burgled and 80% had suffered an attempted burglary. This must be seen in the context of the fact that a third of units had only been tenanted for a year or less and three quarters for less than five years (so the managers could only give information about their experiences during this restricted time period).

Burglary of a dwelling can produce traumatic effects for the victim and various forms of victim support have been developed. In Britain, much less is known about the effects on the victims of non-residential burglary. 84% of the units in this study employed less than ten people and a burglary in such a setting will very directly involve all those working there. It is not entirely surprising then, that in our detailed Stage 1 survey we found that burglaries in such units produced effects very similar to those reported from studies of domestic burglary victims (for example, Maguire 1982). There was the same sense of invasion of private space and worry about whether the victimisation would be repeated.

In some instances a burglary of a small industrial unit may have more serious consequences than household burglary. A burglary can interrupt a business quite severely, may lead to workers being laid off, or in the most severe cases may lead to a business collapsing – a small, supply based business can easily be destroyed if its records are stolen or damaged and it does not keep complete back-up copies, or if important and not easily replaced tools are taken. Even a large business can be quite severely damaged by a burglary, and there will be a larger number of employees who may all suffer to a greater or lesser degree the effects of victimisation. In larger units, there can be the added stress to some victims (particularly middle management and those in charge of premises) not only of the usual police investigations, but also of investigations carried out by the parent company, or senior managers. Internal auditing checks, to guard against fraud or insider collusion, for example, may be a rational or even necessary response by companies to crime, but they can add to the sense of victimisation felt by employees, if the company does not also provide support for victims.

In general, the present study showed that it is wrong to think of the victims of non-residential burglary simply as abstract “businesses”, and instead consideration must be given to the victimisation effects on the individuals who make up the business. The same point is made with respect to theft of personal belongings at work by Mayhew *et al* (1989). The major points to note are that burglary in England and Wales affects as many mm-residential properties as residential properties, that the number of victims is greater since non-residential properties have many more employees than households have members, that the effects of non-domestic burglaries are not so different from domestic burglaries as the common stereotype has led us to believe, and that the economic and therefore broader social consequences may be greater for non-residential burglary.

Vehicle crime

Theft of and from vehicles made up a smaller proportion of crimes reported in the survey than was found by the 1988 British Crime Survey (Fig 2). However, it must be borne in mind that the research was based on interviews with managers (or equivalent) of the units, and whilst they were likely to know of burglaries against the unit, or thefts from the unit, they were not necessarily so well informed about theft of their employees’ property, especially in the case of the larger units. The data may therefore be underestimating the incidence of such victimisation on industrial estates.

Stage 1 of the research analysed the crimes reported to the police and filed as crimes over a two year period for each of five industrial estates. Vehicle crime accounted for nearly one third of the 246 crimes reported (Table 4). While this can not be taken to be representative, due to the small numbers involved, it at least gives an indication of the potential significance of vehicle crime. Furthermore, it was clear from the later research that parking on industrial estates was perceived to be a problem (see Fig 1); there are implications for the future management and control of parking facilities at the design and planning stage.

Table 4: Crimes on five industrial estates reported to the police (%)

	Estate 1	Estate 2	Estate 3	Estate 4	Estate 5	All
Burglary	0	47	30	46	16	34
Theft from motor vehicle	25	6	17	23	33	21
Theft of motor vehicle	38	6	14	6	12	11
Other theft*	25	16	20	6	25	15
Damage**	0	19	19	17	8	15
Other crime***	13	6	0	2	6	3

Total number = 246

* includes theft by employee, theft of cycles and other theft

** includes damage and criminal damage endangering life

*** includes assault, going equipped, robbery, handling and fraud

Source: Johnston *et al*, 1990a

Analysis of the 1988 British Crime Survey data gives some further clues about property victimisation of workers. Of all vehicle theft reported in the British Crime Survey, only 11% took place whilst at work, but 56% of personal thefts were work-related (Mayhew *et al*, 1989 Table A 1.1).

Personal violence

The British Crime Survey found that: “Just over a fifth of assaults against workers (i.e. those in employment) took place at work, and nearly a third of threats” (Mayhew *et al*, 1989, p32). However, work related violence was especially likely in certain occupations, such as social work, teaching, entertainment, nursing, and among security personnel, and because of the nature of the workforce in these occupations, more common among women. Such occupations (people contact jobs) are not generally found on industrial estates and there the workforce is overwhelmingly male. This may explain the lower prevalence of violent crime in the study.

Furthermore, the British Crime Survey measures violent victimisation of those interviewed regardless of whether that assault took place in the interviewee’s residential area or not. In addition to those assaults associated with work, we know that a significant proportion of other assaults take place in non-residential locations, such as in pubs or city centres. The actual rate of assaults taking place in residential areas may therefore be much lower than the overall rate found in the British Crime Survey. Hence, we should not conclude that violent victimisation is low on industrial estates, but high at home – rather that it is lower in the working life of manufacturing industry employees, but higher in people’s general leisure and home life.

3. Security Precautions

Worry about crime

The survey asked a number of questions about how worried managers were about crime on industrial estates. Generally, fear levels among males on industrial estates were broadly similar to the average for males in the average residential area, and on some estates were lower. On the other hand, most of three interviewed believed that their female employees would be more afraid, especially if they were on the estate at night and this gender difference replicates what has been found in other research (Maxfield, 1984). Industrial estates in general, then, are not places where fear of crime is particularly high or concentrated. However, one might speculate that most of those interviewed were managers and probably lived in low crime risk areas where fear levels are at their lowest and so their fear levels when at work, if their unit was on a poor estate, may still have been higher than when they were at home. Also, one must remember that fear levels on the worst industrial estates are higher than levels in the worst residential areas.

Crime prevention and victim support policy

Although fear and worry levels were not particularly high on the industrial estates, 92% of companies had done nothing, beyond the security measures applied to the unit, to try to prevent problems occurring for their employees or to respond to their fears or worries. In the 6% of cases where some response had been made, the great majority of these involved yet more additional security hardware. Less than 1% of companies had a written policy on either crime prevention or how to support their employees if victimised, or had changed working hours, or provided transport to help. Although it could be argued that the crime risk is quite small, it is not necessarily less than some other risks, such as fire and damage to computers for which companies are much more likely to have worked out policies. Clearly, there is a need to make companies understand the importance of supporting their employees by preventative and victim policies, if for no other reason than that it is almost certainly cost effective to do so.

Companies need to ensure that they have these policies in place which will protect their employees from the likely crime risks associated with their particular business, just as they will have policies to protect their employees from likely accident risks. What these are will depend on the nature of the business. A warehousing operation which involves high-value items will need to ensure that its staff are protected, and have training in what to do, in the event of a violent robbery, whilst a business on an estate which suffers high auto crime levels will need to take steps to help employees protect their cars. In the event of such policies failing, then companies also need clear policies on how they will respond to their staff's victimisation.

Such policies have to be worked out in advance, since otherwise a business's post-crime procedures, such as checking prior transactions, stock levels etc., may be seen as questioning the integrity of staff, and so add to the trauma of victimisation. Above all, companies need to understand the traumatic effects of victimisation, and help their staff cope, in the same way as they would with other problems within the company. Such policies are simply part of managing an efficient company and, like other personnel and risk management policies, are likely to produce both a competitive market edge and the business effectiveness created by a staff who are committed to the company.

Security devices

The lack of such policies, however, does not mean that the companies on the estates were not security conscious, and indeed two thirds of them had fitted some kind of security device to their unit. Managers who believed their estate had a higher crime rate than neighbouring estates were more likely to fit security devices to their unit, although the level of measures taken was not necessarily greater than for units on other estates. In other words, the perception of the level of crime is not driving the general level of security devices fitted.

The most common security device to be fitted was some kind of alarm system, closely followed by bars or grills on windows and new locks. Security devices fitted by some tenants were, of course, being added to existing measures, and it is noteworthy that so many tenants felt the need to improve the security initially offered by their unit. Overall, the level of security was high, as can be seen in Table 5.

Tenants were asked whether there were any parts of their building that they thought were particularly vulnerable to break-ins or vandalism. The most vulnerable features were thought to be roofs and windows, followed by pedestrian doors, fire doors and loading doors. Most of these were the features that tenants had tried to strengthen. The exception to this is roofs, and lack of tenant action in this area is clearly due to the cost and difficulty of solutions, rather than to absence of perceived need. Generally, design weaknesses seemed to apply to all sizes of unit, but the smaller units were especially likely to regard their roofs as vulnerable, and in many workshop sized units the roofs were of a simple sheet construction, often with plastic windows.

Over half the tenants on these industrial estates believed that basic aspects of the design or construction of their unit made them unnecessarily vulnerable to burglary or vandalism, and where it is practical to do so were prepared to spend their own money to try to reduce the risk. Landlords, it seems, could improve the attractiveness of their properties if they could convince tenants that their units had been designed to reduce vulnerability. Whilst lighting had mainly been fitted by landlords, it was not infra red switched and had probably been included in the units as a general amenity rather than as a security precaution.

Table 5: Security devices possessed by units on industrial estates

	Percentage possessing	By type of unit		
		Factories	Large workshops	Small workshops
Alarm system	56	75	70	50
Security lights	56	73	58	57
Special locks	54	67	54	56
Bars and grills	46	47	54	48
Toughened glass	38	6	45	35
Reinforced doors	36	43	48	31
Security patrols	23	40	22	19
Safe	17	41	19	8
Shutters	17	21	16	12
Fencing	16	40	18	8
Automatic lights	8	18	9	5
Razor wire	7	22	10	2
Roof protection	6	7	6	6
Security cameras	4	10	6	2
Security procedures (eg searches)	3	12	3	0
Loudspeaker system	3	12	1	1
Dog	2	3	2	2
Anti-climb paint	1	1	2	1

How far unit vulnerability can be reduced at the design stage is an interesting question, The perceived vulnerability of doors often involves a conflict between fire safety measures and crime prevention (see Home Office, 1988), but this could be overcome by imaginative design. More generally, there does not appear to be a clear learning path from the tenant's experience of design weakness, to the landlord's knowledge of this, to future design briefs and thence to new buildings. Yet as we have seen, the initial evidence for such a learning path is clearly visible in the modifications that tenants on industrial estates had made to their units. Some body may be needed which can collect information on the design of industrial units and crime and relay this to architects and perhaps draw up crime prevention design standards for such buildings. Such a strategy is particularly relevant for industrial units, for several reasons. Their overall life is lower than residential buildings. There are a relatively small number of large landlords who could make a significant impact upon the problem, spurred by their ability to then sell the benefits to future tenants in higher rents and fewer vacant units. Also, the relatively high turnover of units and the likelihood of new tenants redesigning the interiors allows for some remedial work in a considerable proportion of the stock in a relatively short time, *provided* tenants are given relevant information to take crime prevention measures.

Intruder alarms

As has been seen, over half of the units on the estates had an alarm system. There is little variation between the different size of units regarding alarms except that the smaller units were more likely to have the simpler types not connected to an alarm company or the police, and had a marginally lower activation rate. The growth in intruder alarms has led to a debate within the police about the problems and costs of response. Furthermore, the problem of the cost of responding to alarm calls will not be solved fully by the common police policy of withdrawing response from multi-false alarm installations, since although the false alarm rate is clustered, it is the sheer growth and number of alarms that is the main difficulty. Even insisting that all alarm conditions were first checked by the alarm company would only remove the obvious line fault false calls, unless the police were prepared to hand over manned response to security firms – something they have so far resisted. Furthermore, on the industrial estates well over a third of alarms were not connected to either the police or an alarm company.

It is difficult to assess the cost effectiveness of the alarms on industrial estates, compared to the alternatives. The survey did collect details of the capital and running costs of installations falling on the companies, but these can be minor compared with the public cost of the police response, especially in view of the false alarm rates.

Given that the alarm installations in the survey are not clearly linked to either perceived risk or actual victimisation experience, then it does seem that an examination of the use of alarms, and what motivates their installation, is well overdue.

Desire for more security

Over two thirds of tenants (69%) would like to see more security on their estate. However, although tenants will spend money on improving the defences of their unit, only a minority of tenants (28%) said they were prepared to pay their landlord for extra security. This makes it very difficult for landlords to improve security on an estate-wide basis if it depends on charging tenants. Better security may make an estate more attractive to tenants but it has to be built in from the beginning and any additional costs included in the minimal rent. The evidence of the present survey, and the experience of the landlords we talked to, was that tenants were loath to accept anything which increased their rent.

Security advice

Whilst tenants may desire more security, do they receive any advice about security, and if so from whom? About two thirds of companies have had security advice and this comes from two main sources: the insurance companies and the police. It is not known in detail what specific advice insurance companies gave. However, it is quite possible that they are contributing to the growth in alarm installations already

referred to, and this would be ironic since this, in turn, is creating great problems for the police, who are the other main providers of security advice.

A coherent and readily available good practice guide for when alarms should be installed and what type of alarm is suitable for the general design of industrial units is required. This ought to be based on a detailed cost benefit analysis of their crime prevention utility stemming from soundly based calculations on the kind of crime in this type of premises. Once established, this needs to be made the basis for the advice given by both insurance companies and police Crime Prevention Officers, since between them they are the major means available to influence the security precautions adopted in industrial units.

When crime related repairs are being carried out landlords, are in a position to offer security advice and so become important third players in the advice offered to industrial estate tenants. Indeed, landlords are in a better position than the police or the insurance industry to experientially work out the best security improvements to their units, provided they collect and analyse the necessary information. Landlords may even consider improving security as part of the repairs they carry out, since then capital costs will be at their lowest. This is, of course, a difficult path for landlords to tread since it would increase their costs. However, just as improved initial security design could be cost effective if it increased rental income and reduced vacancies, so also may security improvement.

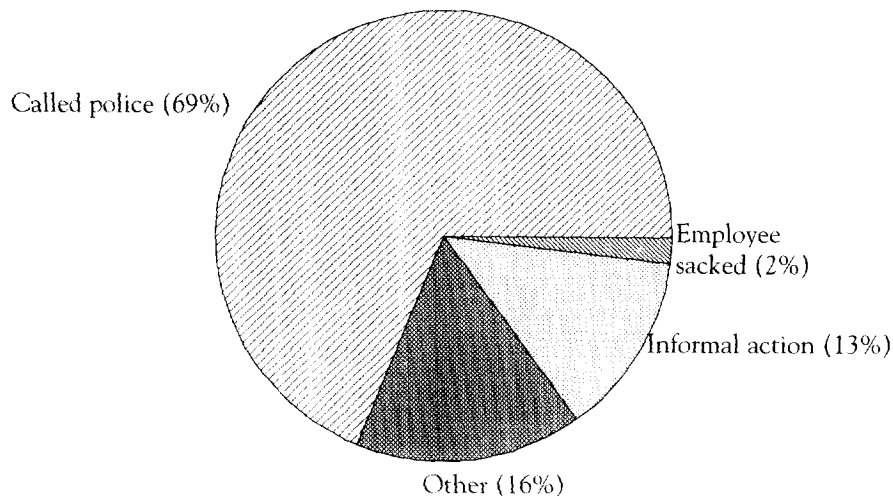
Co-operative action

A different way of responding to a desire for better estate security is to create self help schemes. In the residential sector the government and police have greatly encouraged such development in the form of Neighbourhood Watch, and it is claimed to be successful. Similar schemes exist for non-residential areas under names such as "Business Watch" or "Industry Watch", but only 3% of our tenants knew of such a scheme covering their unit. Although we surveyed 43 estates in 11 police force areas, on only 6 estates did any tenant know of a neighbourhood watch scheme, and even on these estates such tenants were a minority. This is startlingly different from the position in residential areas. Only 7% of tenants were involved in co-operative action and they were scattered across 11 estates. Co-operative action against crime therefore is rare and when it does exist it is small scale, probably between neighbouring units, and never extends to cover a whole estate. This makes it extremely difficult for managers to know the crime risk of their own unit, since they have little contact involving such matters with others.

4. Policing and Crime

If a company on an industrial estate is victimised, then the manager will have to decide what action to take. Is the company going to call in the police, or instead take informal or even disciplinary action? In fact, the most common response of the managers on the estates was to call out the police, and this was the case regardless of the size of the firm (see Figure 3).

Figure 3: Action taken by managers on crime



The kind of action taken, however, depends considerably on who was thought to have committed the offence. If the suspect was an employee or another worker on the estate, companies were unlikely to call the police. They might take informal or disciplinary action, or they might do nothing. If 'kids' were suspected, the police were rarely contacted. However, if the offender was unknown, then calling the police became the main response.

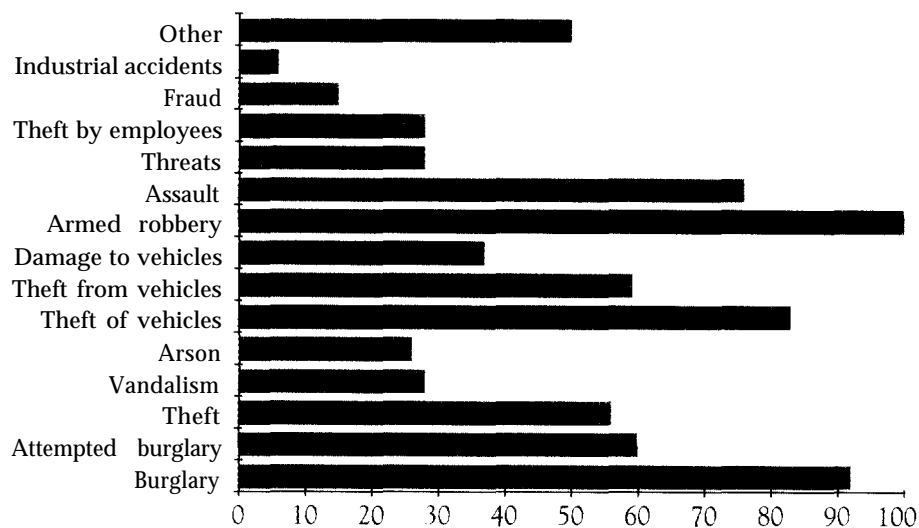
Whether the police were contacted also depended on the type of crime (see Figure 4). The common property crimes (burglary, theft of or from vehicles), assault and robbery led most commonly to the police being called. However, fraud, theft by employees and damage (including arson) was only infrequently reported.

Finally, whether a crime was reported to the police also varied between police force areas. This difference was not a consequence of the level of crime in different areas, and it is possible that managers' past experiences of police response may explain this difference.

In general, the rates at which offences on industrial estates were reported to the police were relatively high. There is no evidence that companies on the estates did not wish

to involve the police in their crime problems, and whatever else may be happening at present, this is a good basis for the police to build upon for the future.

Figure 4: Percentage of types of crimes on industrial estates reported to the police



Police response to incidents

In very few cases were offenders caught - only 12% of all incidents and most of these burglaries or theft. The police or businesses were equally likely to catch offenders, but the police mainly caught burglars, and the businesses, thieves and those damaging property. It is very difficult to compare these police detection rates with those for residential offences, since no research has separated detection according to type of property over a sufficiently large geographical area. However, it is likely that detection rates for property offences on industrial estates are lower than those for residential areas.

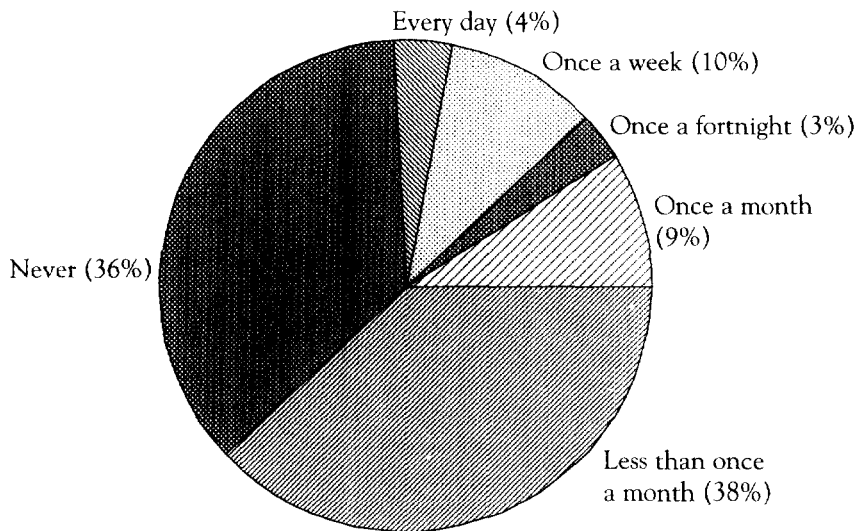
Whilst detection is one measure of police effectiveness, another is service to the public - for example, whether the police visited the company after a reported incident. In this study, the police made such visits in the vast majority of cases (91%). Similar results showing high response rates were also found in the Stage 1 study where nearly all calls, except some activated alarm calls, were responded to (see Johnston *et al*, 1990a, p.183). Managers were also asked how satisfied they were with the overall police response to incidents. 59% of respondents were very satisfied or satisfied, which was at the low end of what has previously been found for residents (satisfaction levels are of the order of 60-80%, depending on age, sex, race, socio-economic background and previous victimisation, see Shapland *et al*, 1990; Ekblom and Heal, 1982) and there were significant differences between police force areas, a few of which were at the level normally associated with household residents' responses. The pattern, as has been found for domestic complainants, is that it is not the immediate police response

which causes public dissatisfaction, but the follow-up action, and especially the failure to keep complainants informed about outcomes (see e.g. Shapland *et al*, 1990).

Visibility of policing

Stage 1 of the research suggested that police officers were rarely seen on industrial estates, except in response to incidents, and this was a matter of concern to managers. The wider survey confirmed this finding: 36% of managers had never seen an officer on their estate and 38% less than once a month (see Figure 5). Indeed, no manager on thirteen estates had seen an officer more than once a month, and on twenty estates, the highest frequency cited was once per month on average. There were some differences between forces with Northumbria Police, in particular, being more visible on their industrial estates. It may be that police officers do not believe that being seen around industrial estates is necessary and may even see this as a private security function. It was clear, however, that this was not the managers' view; the idea of community beat officers patrolling estates was widely supported and appreciated where they were present.

Figure 5: Visibility of police on industrial estates



Overall judgments of policing

As many as 34% of managers thought their estate was 'not at all well policed' and 26% thought it 'not well policed'. Only 14% of managers thought their estates were 'very well' or 'well policed'. This is very different from the findings for residential neighbourhoods, where only 8% thought their neighbourhood was 'not at all well policed' and 25% thought it 'very well' or 'well policed' (see Shapland *et al*, 1990). The negative judgments were found uniformly across industrial estates and between

businesses. One has to conclude that the judgments are not a response to individual experiences or the kind of business, but instead are a response to the way estates are policed and their crime susceptibility.

The evidence from this survey suggests that the police may need to re-examine their role on industrial estates, especially since industrial units:

- are highly susceptible to victimisation, especially burglary;
- regret the lack of police contact on an everyday basis;
- are less likely to help the police set up, or encourage community crime prevention projects if they hold negative views of the police.

The police may need to re-examine the role of community policing, or territorial policing, in relation to industrial estates and also consider training officers on how to maintain day-to-day contact with managers. Industrial estates can present a shuttered appearance which can make contact difficult. However, since managers have so little contact with other units, they would appreciate police contact to inform them of crime trends on their estate.

Using the courts

Very few managers had any experience of the criminal courts – not surprising given the low police detection rate already referred to. Experience of civil courts, however, was much more common. This is understandable given that nearly half of businesses in our surveys had a formal policy for dealing with problems such as theft and 72% of these involved instant dismissal. Generally, managers were highly satisfied with civil procedures and this is likely to encourage their repeated use. Given this use of civil courts, an understanding of civil procedures could be usefully incorporated into management training.

5. Comparing High Crime with Low Crime Estates

It was shown in Section 2 that the level of crime varied very considerably between industrial estates. From the point of view of prevention and the future planning of industrial estates, an important question is whether it is possible to identify those aspects of industrial estates associated with differing crime levels?

During the course of the research, a great deal of information was collected about the estates – the businesses who worked on them, the surrounding area, the experience of crime and the security precautions on the estate. The factors which could be related to higher crime rates are large. Some of these relate to the siting of the estate: how near it is to housing; whether there is open land near by; whether estate roads are public thoroughfares. Some reflect the layout of the estate: how large it is; whether it is composed of factories, or workshops, or a mixture of both; whether the public use the estate; what kinds of businesses are there; which facilities are present; where car parks are situated. Some may relate to the estate's management: its appearance; its accessibility to the public. The policing of the estate may also be relevant.

Yet, other factors are features of the units themselves, rather than the estate. Crime prevention precautions taken by units are one obvious possibility. The type of business and its attractiveness to thieves or burglars may be relevant. Managers and employees may make more or less effort at informal social control, and may or may not know those occupying other units.

Finally, it would be interesting to see whether managers' perceptions of crime and of other problems on the estate relate to the amount of crime reported to us as having occurred on the estate. What kind of other problems are related to crime? Is higher fear of crime related to higher levels of actual crime (as it is in residential neighbourhoods, though this relationship is not simple - Maclean *et al*, 1986; Shapland and Vagg, 1988)?

Our industrial estates were spread over the north of England, from regions traditionally very different, whose populations would not naturally compare their experiences one against the other. So this study gives an opportunity to answer these questions free of some of the stereotypes about 'bad' and 'good' places, which dominate inter-regional comparisons.

The present research attempts to answer these questions within the framework of a survey done at one point in time, and therefore cannot state which factors predict crime. To do so would require several measurements taken over a period of time. All that can be examined is which factors seem to be most associated with a higher level of crime on an estate, in the context of the north of England in 1990.

Results

The major finding is the extent to which those variables reflecting the design, layout and surrounding area of an estate influenced crime rates – whereas crime prevention precautions taken by units and policing showed few significant relations.

The data describing the estates were organised into five subsets, and subjected to stepwise multiple regression and discriminant function analyses. The subsets were:

1. basic variables about the nature of the estate and its companies;
2. variables about the situation of the estate;
3. variables about crime prevention precaution;
4. variables about policing and informal social control;
5. variables about managers' perceptions of crime etc.

The two types of analyses supported one another, and Table 6 gives some basic results from the multiple regression analysis.¹

Some of the subsets of variables were quite powerful explainers of the rate of crime on estates, whereas others were only very weakly associated, if at all. The basic variables and those reflecting the situation of the estate (subsets 1 and 2) accounted for a considerable amount of the variance. Few variables reflecting crime prevention precautions taken by units (subset 3) and those associated with policing and informal social control (subset 4) were found to be significant. Presence of alarms, presence of other security precautions, perceived frequency of policing, a known local community beat officer – none seemed to have any effect.

Factors influencing the results on crime prevention precautions could include:

1. some units on a high crime estate took such precautions, but others decided not to, or could not afford to, so that the overall frequency of crime prevention precaution on that estate was only minimally related to the crime rate and did not show up in the analysis;
2. decision making on installing crime prevention precautions was not related to crime rates at all. One can also conclude that decisions by landlords to install security devices were either extremely rare, or were unrelated to recent patterns of victimisation.

Both possibilities suggest that managers, landlords and insurance companies may not have been aware of the crime rate on an estate, or may have had incorrect views about crime rates. A further possible explanation is that a high crime rate may have *led* to

¹Only those variables which reached some level of significance are displayed in Table 6. Each figure is the cumulative amount of variance accounted for by all the variables up to that point, within that particular subset. Full details of the analysis can be found in Johnston *et al*, 1990b, Chapter 5.

Table 6: Variables associated with more crime on an industrial estate

Variables	% of variance explained by
Subset 1: nature of estate & its companies	
more staff employed	
more factories	31%
less units on estate	35%
type of unit: factories	37%
older estate	40%
landlord	43%
bad sign posting	45%
more male employees	47%
units attracting public	48%
manager reads local paper	49%
less workshops	50%
unit has computer	52%
manufacturing	35%
larger estate	61%
public telephone	66%
type of business on estate	75%
older manager	86%
Subset 2: situation of estate	
bad appearance of estate	7%
some building adjoining	14%
people walking through	17%
open space around	19%
scruffy nearby building	21%
estate used by children	23%
council housing nearby	24%
number of end units	25%
security parking provided	26%
Subset 3: crime prevention precautions	
lack of windows shutters	16%
Subset 4: policing and informal control	
graffiti on building	7%
Subset 5: manager's perceptions of crime etc.	
more perceived crime	12%
more damage by children	16%
more litter	17%
employees feel safe at night	18%
more dog problems	19%
less noise problems	20%

the implementation of crime prevention precautions, just as much as taking precautions may have led to reduced crime; data referring to one point in time makes it difficult to identify the direction of effect.

The lack of an association with policing could merely reflect the minimal police presence on estates in the daytime, except when called because of a discovered crime. It may also imply that police forces were unaware of which estates were high crime or low crime, and so were unable to match need with response. The difficulty of matching need with response for residential neighbourhoods is currently a matter of some controversy inside and outside the police service, since matching tends to involve some diminution of the traditional shift pattern. It is not, therefore, being realistic to expect it to have been occurring for industrial estates. However, forces may be unaware of patterns of crime on estates, since estates may be quite small and few forces currently have the ability to analyse crime patterns to the levels of an individual estate, and fewer still, routinely distribute information to relevant officers (see Johnston *et al*, 1993, and forthcoming). The Stage 1 research revealed that the police forces responsible for the five estates did not carry out such analysis, and calls for assistance from the estates got buried in the mass of other demands (see Johnston *et al*, 1990a, pp179-181).

There is also no relation between crime rates and informal social control or use of the civil courts. This reinforces the picture of a lack of concerted action between units on estates.

There were, however, significant associations between managers' perceptions of crime on the estates and the crime rate (subset 5). In this case, the analysis showed that managers' beliefs about the amount of crime on the estate had their roots in reality. Those living in residential neighbourhoods have also been shown to have quite accurate views about the amount of crime in their local area, as compared to surrounding areas (Shapland and Vagg, 1988; Bottoms and Wiles, 1989; Skogan, 1990).

The fear of crime measures, however, were not significantly associated with actual crime. All these fear and concern measures were very weakly associated with crime rates and did not seem to have their roots in overall high crime rates on the estates.

Details of design and layout factors

Basic design and layout of the estate were the factors most associated with high crime rates, but which factors were most important? Looking first at the estate itself, a clear picture develops of larger estates with more larger units employing more workers having higher crime rates. Given our measure emphasised the spread of different kinds of crime, many of which would be far more likely with a large workforce, this was not surprising. Even so, the bulk of crime for all units was burglary, theft and damage, committed, as far as is known, by outsiders. It seems as though the more open plan

estate, with large amounts of empty space between factories, may have been especially vulnerable.

There were, however, some other factors which seemed to contribute to crime rates independently of the size of the estate, number of factories etc. The proportion of male employees was significant, in addition to the overall size of the workforce. Units which attracted the public (retail etc.) tended to experience higher crime rates. The presence of a computer (indicating a larger concern used for production, or a more 'high-tech' and so attractive business, not just a store) was significant. Manufacturing itself led to more crime than wholesaling or storage.

All the above factors treat the estate as a self-contained unit. If one considers the estate in its surroundings, then its setting and the use of the estate land by local people were also significant. A scruffy, untidy, ill-kempt estate was a major factor associated with high crime rates. Having at least some buildings adjoining the estate (housing or industry) was also important – but so also was some adjoining open land, perhaps because it allowed unobserved access, or the land was used for recreation. Essentially, this means that an estate situated in totally open country was less at risk, but once some buildings were nearby (from which predators could come, or observe) then the type of building became important. Housing *per se* did not seem to be a problem, but scruffy buildings were. Council owned housing can of course be neatly kept or scruffy, but council housing situated next door to the estate seemed also to be a factor associated with high crime rates.

People driving through the estate was not a major factor associated with high crime rates – and nor was whether the estate roads were public roads or not. But pedestrian use, particularly by children playing on the estate, was important.

There was one final design point; how many end units there were (i.e. whether units built in blocks were in shorter or longer blocks). The crime significance of this is obvious in terms of potential access points, and often, lack of visibility when approaching the unit.

Obviously, this does not mean that the next generation of estates should contain no factories, and should be situated in the middle of a rural landscape! Larger units are needed by companies. Those units must be staffed by workers that are able to reach the units. However, these findings do suggest that a lot could be done to reduce crime on industrial estates at the design and planning stage. Where exactly estates are situated, whether open land is left on the boundaries, whether children's play is channelled into more appropriate places, whether retail units are mixed in or placed at the estate entrance, whether care is taken over the 'communal' parts of the estate – all these are factors which may play a part in preventing crime.

These findings suggest that reliance should be put on what van Dijk (1990) has called 'situation-oriented' prevention (design, use, and management of estates) rather than

'victim-oriented' prevention (physical security devices, such as alarms and bars). They also suggest that the current attempts by units to fit physical security measures were not proving effective in altering crime levels on estates. Maybe they merely effected displacement from one unit to another within the estate, rather than deterring offending on the estate as a whole. When regression analyses were run for differences in crime rates between units, no variable affected the result significantly, probably because of insufficient variance in crime levels between units on the same estate. The conclusion seems to be that current physical security activity is somewhat ineffective; either because it is not targeted at real crime problems, or because it is not being applied to enough units.

The survey found that managers had little information about crime risks on their estates, yet once an estate was built, crime prevention was left to individual unit managers. However, it is not sensible to rely on individual managers to deal with crime at an estate level. Such security needs to be built in by architects and landlords, or produced on the basis of estate-wide advice by the police.

6. Action for the Future

This is the first major-study of crime and other problems on industrial estates in England. Although the study has its limitations, a number of implications can be drawn for crime prevention.

Landlords

Landlords could play a significant role in reducing crime on industrial estates by:

- Improving the crime prevention capacity of units at the design stage.
- Improving the crime reduction potential of the siting and layout of future estates.
- Using the need for repairs to improve the crime prevention level.
- Encouraging estate-wide crime reduction schemes among their tenants.

As far as the first of these is concerned, landlords, probably uniquely, have the information to know which aspects of existing designs have made them vulnerable to crime. In order to ensure that such weaknesses are not repeated in the next generation of buildings, they need to ensure that this information (from insurance claims, repairs etc.) is systematically collected across all their estates, analysed and the results made available at the design stage of new units. At present this is not happening, and as a result design weaknesses are being repeated. Given the shorter life spans of industrial units, design improvement could improve the security of industrial estates more quickly than in residential neighbourhoods.

Police

The police contact with managers on industrial estates is currently fairly minimal and confined to the reporting of specific crime incidents and matters involving alarms, with occasional crime prevention advice for some units. If industrial estates are seen as a constituency for policing, to be compared with residential neighbourhoods, leisure and sports events, servicing the courts etc., then the conclusion must be that they are not receiving the full range of police services. The negative reaction of managers reflects this.

Does it matter some might argue that industrial estates, as private property, should police themselves, and that they have the money to do so. Scarce police resources should be reserved for more important matters. A number of factors argue against this view. One is that there should be no 'no-go' areas for policing, or areas in which the police do not provide crime prevention advice and consultation. Another is the sheer number of crimes committed on such estates and the time spent in recording, investigating, and sometimes prosecuting them. This would argue for more effort in deterring offending on such estates, particularly since such offenders are likely to be

local. Another factor is that many units on industrial estates are workshops (48% in this study) – many of which are tenanted by small businesses with few resources, for whom crime may threaten the viability of the business and cause considerable stress for managers. Yet another is that attitudes to crime are not solely based on where one lives. Employees' and managers' views about their area and its policing will be affected by crime at work as well as crime at home. Finally, if policing and crime prevention is really to be a partnership with the community, then the business community must be included.

If the police are to play a more active role on industrial estates then they need to:

- Develop the means to analyse crime problems at an estate level so that estate differences are understood.
- Instead of giving general advice, provide crime prevention advice based on the crime risks of the specific estate, or in relation to known crime risks associated with aspects of an estate.
- Use this knowledge base to train police architectural liaison officers with specialist knowledge of industrial estates.
- Encourage the setting up of estate-wide crime prevention schemes and of estate watch.
- Provide some form of neighbourhood policing for industrial estates and train officers for this role.

Businesses

Businesses also have to take the initiative in protecting themselves against crime. Most businesses already do spend money on security devices, some to a considerable extent. However, much of this effort is either not based on methods which have been proven for the particular risk, or is aimed at the individual unit as if its risks were independent of the estate. Businesses need to start thinking about their individual risks in the context of the estate. There are a number of things they could do:

- Co-operate with their landlords in developing systematic knowledge about the crime vulnerability of unit design and estate design and layout.
- Be prepared to work together with other businesses on their estate to share information about problems and to engage in co-operative solutions. Large businesses who operate in a number of places need to ensure that their overall company policy does not impede such estate level co-operation.
- Work together with the local police to develop the policing strategy outlined above.
- Use any necessary repairs to improve the security of their premises on the basis of soundly based crime prevention advice.
- Develop a written company policy on crime prevention and on responding to the victimisation of employees.

Insurance companies

Insurance companies are currently tending to offer blanket crime prevention advice unrelated to the known risk of a particular estate. Insurance companies could help the problem of crime on industrial estates by:

- Working with the police to develop crime prevention advice more directly related to known risks.
- Offering premium discount schemes for good security design and/or practice.
- Allowing such limited research access to their claims data files as would help the development of better security standards.

Local authorities

Local authorities are often the landlords of industrial estates in which case the comments above apply. In addition, however, local authorities could help the development of crime prevention on industrial estates by:

- Using their influence as planning authorities to encourage good practice in unit and estate design, estate siting and layout.
- Involving police architectural liaison officers in the planning process.
- Offering whatever co-ordinating help they can to encourage estate-wide crime prevention schemes.

General

Crime on industrial estates is a very significant problem. It affects the viability of businesses and the feelings of security of employees and managers. Many units on industrial estates are the small workshops of struggling new businesses. Their managers cannot become crime prevention experts. Nor do they have information about crime risks, or the knowledge of crime prevention techniques, which will allow them to make informed judgments about how they can best protect their units and their employees.

This research shows that there is a need to develop best practice guidelines for crime prevention in the general development and running of industrial estates. This is currently not the remit of any one body – instead, it needs input and help from industry, the police, landlords and the insurance industry. A co-ordinating body is needed to develop all the points made above into a general code of good practice. The interested parties might consider setting up a small national council to develop such a code and co-ordinate the necessary information and research to ensure that it remains up to date and adequate to the task.

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