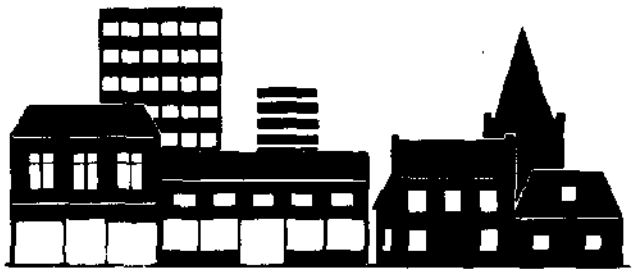
Towards a Brighter Monsall

Street Lighting as a Factor in Community Safety

*The Manchester Experience



Robert Barr

Helen Lawes

ESRC Urban Research and Policy Evaluation - Regional Research Laboratory,
Department of Geography, University of Manchester, Manchester M13 9PL.

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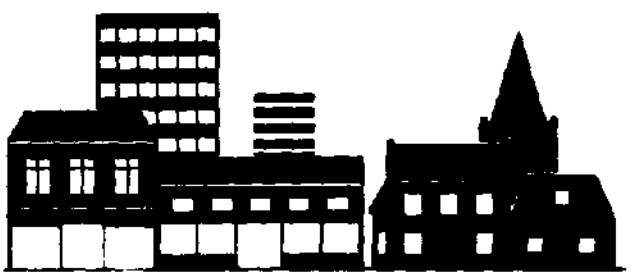

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Before Re-lighting.....

.... After Re-lighting

Preface

This study was commissioned at the inspiration of the British Parliamentary Lighting Group **(BPLG)** as one of six co-ordinated studies of the impact of lighting on crime and community safety following on from the pioneering work of Kate Painter. Locations were selected around the country to reflect a range of different urban environments. Manchester City Council were approached by Ken Woolmer, the consultant to the **BPLG** throughout the project, to nominate one or two suitable areas for the study. The area suggested, the Monsall Estate in North East Manchester was recognised as a problem area. The area suffers from many of the most serious design problems of some estates built rapidly during the 1960's and 70's. The estate is characterised by some very hard to let property and a shifting population superimposed on a relatively stable community, many of whom have lived in the immediate area for generations and have been bora and bought up on or near the estate. The area was already the subject of a multi-agency project on community safety and a number of community action schemes. The University of Manchester was approached to cany out the survey work to assess the impact of the re-lighting scheme on attitudes towards crime and safety on the estate.

This report is dedicated to the people of Monsall for tolerating, with great good humour, yet another intrusion into their lives. Despite a large number of initiatives on the estate it was acknowledged by the City Council that this is an area in which the provision of services has been very difficult and not to the standards to which the Council aspires. Given the difficulties in maintaining various aspects of the physical structure of the estate, and given that conditions here were rather worse than in the other study areas the wisdom of using the area for the project was questioned. However, after some heart searching it was decided that while re-lighting might not have been the top priority for action in this area, such a display of interest and attention, and the windfall of some un-anticipated investment would do the area no harm and it was decided that the survey should go ahead. This decision appears to have been vindicated by many positive responses welcoming the improvements and some requests that the rest of the estate should be re-lit to the same standards.

The interviewers used for both the pedestrian surveys and the questionnaire interviews were students and recent graduates from the University. While initially somewhat intimidated by the appearance of the estate, our interviewers soon developed a

remarkable degree of rapport with the local community and remarked frequently on their fortitude and cohesiveness.

While it is usual to acknowledge help in work such as this we would wish to stress that this study would have been impossible without the considerable input of enthusiasm, practical expertise and local knowledge from everyone one concerned. The biggest single contribution to our work has come from David Iredale, who has acted as our liaison officer with Manchester City Council, throughout the study. David is a community safety officer with a remit to work in Monsall and his local contacts and the introductions he provided us with were essential to allow us to work on the estate. Brian Kerridge, from the City Engineers Department has been responsible for the actual installation of the lighting. He has energetically supported the project throughout and has contributed the technical appendix to this report. John Brinnand, has been our main point of contact with Greater Manchester Police and is responsible for schemes to 'design out crime[1], we are also grateful to the local officers for their support of our project. Graham Smyth from the Greater Manchester Probation Service has been involved in the project from its inception and has kindly provided us with local crime figures, with the prior agreement of Greater Manchester Police.

On the estate Rose McCarton, community worker, and Bill Marshall, the security officer, and his staff, ensured that our interviewers were well cared for and given all the assistance they required. We are also grateful to Rose Wedge and the staff of the Housing Department for their assistance.

Our team of interviewers, Simeon Perry, Jackie Cureton, Paul Mustow, Rob McGowan, Paul Drew, Suzanne Griffin, Mark Rickinson, Alice Savidge, Julia Phipps, David Warr, Sarah Lycitl, Gill Callander, Mauren Moore, John Dewsnip, Adam Roche, Carolyn Sims, Joanne Balfour Rachael Hearn and Sam Harris deserve campaign medals for their fortitude, counting pedestrians on freezing winter nights and knocking at doors when they were never certain what reception they may get.

The study would not have taken place without the enormous effort, enthusiasm, encouragement provided by our guide and mentor, Ken Woolmer, retained by the British Parliamentary Lighting Group, the expertise of Kale Painter and the funding provided by Urbis Lighting Limited.

We are grateful to everyone listed above for their help, and to the many respondents and other individuals whose kindness and co-operation made the study possible. Any shortcomings or errors in this report are, of course, our own.

Robert Ban-
Helen Lawes

Manchester October 1991

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Summary of Main Findings

- Before the installation of the new lighting 51% of respondents saw "Being Afraid to go out after dark[1] as a big problem in Monsall, 50% were concerned about burglary and 34% felt the street lighting was inadequate. These ratings were much higher than in other study areas but other problems were cited by even larger numbers of respondents. (Table 2.1)

- After the lighting was improved 17% of respondents said that they 'Felt safer in their homes'. (Table *AA)*

- More specific questions on fear of crimes showed no change in levels of fear. (Table 4.6)

- After the lighting fewer respondents felt they needed to avoid certain areas as a precaution against crime (Tables 4.9, 4.10)

- There was an increase in pedestrian traffic between surveys, in particular more mixed groups of men and women, and groups of women only, used the main route through the estate. (Table 5.7)

- There were fewer reported burglaries after the lighting went in and they took place away from the re-lit area. (Table 7.2 and Figures 7.1, 7.2)

- While there was a general appreciation of the new lighting, the effect was mitigated by not re-lighting the whole estate. (Tables 6.1, 6.2)

- 91 % of respondents felt that 'More police on foot patrol' would be the most effective measure to reduce crime in Monsall, but 55% saw better brighter street lighting as an important measure (Table 7.3)

- The results of the survey suggest that lighting alone does not solve the problems ofaji area like Monsall but is a valuable and cost effective measure which should be used with other area improvement policies. (Chapter 8)

Chapter 1

Introduction

One of the factors that makes the largest difference to the quality of life in different parts of the country is the fear of crime, be it well founded, or an excessive reaction to a minor risk. For that reason the law and order issue is never far from the top of most political agendas. Neither the fear of crime, nor the actual experience of it as a victim. are equitably distributed. Many crimes can be shown to be concentrated in particular geographical areas, at particular times (often in the hours of darkness) and the victims are often members of particular groups, for example women, the elderly, ethnic minorities, young males. There are many environmental factors that can affect the incidence of crime. Alice Coleman (1991) for example follows Oscar Newman (1972) in citing design factors on many modem housing estates. Unlike Newman, however Coleman does not explicitly mention the impact of lighting. Lynch's classic "What time is this place' (Lynch, 1972) recognised the seasonal and diurnal changes in the character of locations which must be closely related to the level of lighting.

Kate Painter (1988,1989a, 1989b) carried out some of the first major studies of the impact of lighting on crime and the fear of crime. She paid particular attention to the effects of improved lighting on the security of women and the elderly and has developed much of the methodology adopted in this series of six linked studies. It is ironic, as Maxfield (1987) has pointed out, that the fear of crime is most associated with women and the elderly, whereas the most common victims of violence - particularly at night are likely to be young males. However, as the fear of crime can have a debilitating effects on the quality of life of a very large number of people. compared to the serious consequences of victimization on a small minority, it needs to be taken seriously by both criminologists and the community at large. Newman top cit) mentions the effects of the 'harrowing journey[1], from the interior of poorly lit housing estates to the bus stop, on the night lime lives of their residents. It was precisely this situation on a largely pedestrianised estate that led to the choice of Monsall as the study area for this project.

Jn the context of the six linked studies of the effect of lighting on crime, and the fear of crime, the Monsall project characterises the type of environment that has developed in many, system built, inner city 1960's and 1970's housing estates. Over the last decade a large number of economic, social and environmental initiatives have sought to remedy

the problem of hard to let modern council housing with very mixed levels of success. While there is no suggestion that better lighting is a 'magic cure[1] for such problem areas, the Monsall study shows the role that re-lighting can have as one of a battery of measures that can be applied to such areas. In comparison with the other five study areas Monsall has a far higher 'background' level of fear of crime, economic worries and dissatisfaction with both the physical environment and the level of services provided. If a limited re-lighting scheme can be shown to have a beneficial effect on the morale of such a community, in the face of so many competing concerns, lighting must be considered as an additional measure to improve the conditions in such areas.

Chapter 2

The Study Area

The Monsall Estate in North Manchester is a self contained area of about 750 laie 1960's and early 1970's tower blocks, deck access flats, maisonettes and terraced houses with a small number of rehabilitated 19th century terraced properties. The estate is widely perceived as a 'problem' area and property on it is hard to let. At any one time between 10% and 20% of the properties on the estate are empty and it is Council policy to secure un-let properties with large armoured, zinc plated shutters over the windows. As property with ground floor access is often harder to let, the estate gives an impression of having a lower level of occupancy than is actually the case.

The initial impression given by the Estate is extremely bleak, the boarded up houses. the apparent neglect of all open spaces, the uncollected rubbish, the poor physical state of the buildings, the broken paving areas and many signs of vandalism all present a desperate picture. A representative of the City Council's Chief Executive's Department described the area as one where many Council services were inadequate. This was reflected in the responses to a question concerning problems on the Monsall Estate (Table 2.1).

The responses of the residents reflect the first impression when one visits the estate. The cleansing and maintenance services of the local authority as well as the provision for child care, and the young people of the estate, are perceived by more respondents to be a serious problem than lighting related issues. Nevertheless just over half the respondents reported a fear of going out after dark and over a third were dissatisfied with the level and maintenance of street lighting. This alone appears to justify our decision to carry out the survey.

While the estate gives the impression of having a very unstable, transient, population the survey did not bear this out. Almost two thirds *{627c)* of the respondents had lived on the estate for over 5 years. The social cohesivcness of the estate is difficult to judge. but the impression given was that there is a core of residents a with a strong feeling of community who know most of their neighbours (617*c* of respondents) and a minority (39%) who knew few or none of the people living close to them. Our interviewers corroborated this finding by suggesting that there was a distinctive community in the area who were happy to live there but that it was also home to a great

Table 2.1

Identification of "Big Problems"

	Pre-Lighting Survey N=168 (multiple choice) %
Rubbish and litter	84
Lack of safe clean play areas for children	79
Unemployment	75
Vandalism to cars and property	68
Broken pavings	67
Theft of items from cars	64
Not enough leisure facilities	60
Secure car parking	59
Being afraid to go out after dark	51
Drug abuse/dealing	50
Burglary	50
Youths hanging around	49
Lack of nursery/child minding facilities	47
Dog noise and mess	38
Street lighting	37
Refuse collection	24
Street robbery	19
Traffic noise	19
Public transport	18
Noise and nuisance from drunks	12
Noisy neighbours	11
Being pestered/bothered while walking around	7
Racial attacks	3

many isolated individuals. There is also a large minority of transient residents reflecting the 'hard to let* status of the estate.

The layout of the estate is characteristic of its period and its location (see Figures **A.** 1 -- A.5), about 2.5 miles from the City Centre of Manchester places it well into the 'inner

city' with many of the attendant problems in an area formerly offering industrial jobs, but currently affected by the general recession in the economy.

Chapter 3

Methodology

There are many possible approaches to the study of the impact of lighting on crime and the fear of crime. Observational studies, in depth interviews and discussion groups, longitudinal studies of crime pattern and structured surveys are all appropriate methods. However the need to co-ordinate, and achieve some degree of comparability across, six studies in different types of area widely spread around the country, limited the scope, in this case, to the use of structured questionnaires broadly based on Kate Painter's original work and her design for the Birmingham Study. Each study team had the opportunity to vary the methodology within certain limits, in our case we chose to carry out an additional pedestrian survey (also based on a questionnaire designed by Kate Painter) and pedestrian flow counts.

Our study used data from six sources. The main body of data was collected by conducting a half hour structured interview with respondents drawn systematically from all parts of the estate. Initially every other dwelling was to be included but, owing to a large number of vacant properties and a high refusal rate, additional households were sampled, still reflecting the whole of the estate. The second source was a pedestrian survey, with interviews conducted at 5 - 15 minute intervals (depending on a willing respondent passing the survey point) over four nights in December and four nights in March. The third source was a follow up survey where original pre-lighting respondents were interviewed again (or member, of tjis same households were interviewed) with a modified schedule. The fourth source was a number of new respondents interviewed with the original full survey form after the lighting improvements. These proved to be necessary because of the relatively low response rate to the first survey and the difficulty in finding the original respondents or persuading them to participate for a second time.The final source was the local police force's records of all reported crime on the estate in the 18 month period from January 1990 until July 1991.

The first stage of the study (carried out between the 12th and 20th December 1990 prior to the installation of the new lighting), comprised a pedestrian survey and a household survey.

The pedestrian survey involved two teams of two interviewers interviewing and carrying out pedestrian counts for three full hours over a six hour period. The pedestrian surveys were carried out on four nights in the week preceding Christmas - Wednesday, Friday, Saturday and Monday. Some 60 ten to fifteen minute interviews were completed over the period. While the interviewers felt very exposed undertaking the survey, full support from the Estate security guards and a friendly reaction from the residents of flats close to the survey points made the experience tolerable and interesting. The first four survey nights were very cold but clear with no rain. During the second pedestrian survey two clear cold nights were followed by two very wet evenings.

The household survey aimed to interview members of half of the households on the estate. Interviewers werfc'organised into teams of two. Female interviewers were instructed never to make a first approach to a property un-accompanied by a male, the importance of this advice was reinforced by warnings from the security men on the estate who vetted all sampling points before an approach in order to avoid wasted visits or danger to interviewers. Ultimately a response rate of 43# was achieved and 168 interviews were completed out of 388 contacts. The relatively high refusal rate mirrored the results of a household survey canicd out by the City with the assistance of MORI about a year ago. We did. in fact, achieve more completed questionnaires than was possible in the City's survey.

The second stage of the study (carried out between the 20th and 26th March 1991. about two months after the installation of the new lighting) comprised a pedestrian survey, a shortened second survey for households ihat had been.intcrviewed in the first part of the study and a full interview for households new to the study. Of the 168 original interviews there were 91 re-interviews in the same household, 71 of which were with the same respondent. A further 47 new respondents were interviewed (using the original full survey form).

Statistical Considerations

The sampling procedures used throughout the survey were based on a systematic sample of households (every other household on the estate was selected). However, a fairly high refusal rate and a large number of empty properties led to the selection of alternative sampling points, which were usually the adjacent property to the selected household. By the end of the three surveys almost every occupied property on the estate had been approached. Interviewers were instructed to interview the first adult contacted from each household. As the unemployment rate is high and many interviews

were carried out in the early evening this procedure did give a reasonably well balanced sample covering different ages, genders and sizes of household.

No statistical tests of significance have been applied to the results because the sample sizes were too small to obtain *statistically* significant findings. For example, if we were comparing the responses from the main pre-lighting sample with their follow up, percentage differences in response in the range of 8% - 13% would have been required to reach statistical significance. A statistical test should be applied only if a specific hypothesis has been formulated before the application of the test - and it would not have been meaningful to apply such a procedure to all the findings in the hope of finding something significant.

However, whilst the results may not be *statistically* significant, a very clear pattern emerges when they are viewed as a whole and in the context of the other five studies. There are consistent changes in responses between the pre-lighting and post-lighting surveys, which are corroborated by evidence from elsewhere. The results provide evidence of change, even if that evidence is inadequate to meet the very rigourous standards of statistical analysis. They should be viewed as having *substantive* significance rather than *statistical* significance and, while not providing "cast-iron* evidence, they provide a picture which can, and should, influence policy makers. It is our opinion that the size of study required to obtain statistical significance could not be justified (sample sizes and re-lighting areas would have to be up to ten times larger than here) given the weight of accumulated evidence from these exercises.

Chapter 4 The Household Surveys

Demographic Description of the Sample

The number of people interviewed before the lighting was installed was 168. For the post-lighting survey 91 of the 168 people agreed to be re-interviewed using a slightly different questionnaire, with more emphasis on the lighting. To act as a control and to create a larger sample, a further 47 people were interviewed after the lighting was installed, using the pre-lighting questionnaire. This section describes the social composition of the samples.

Table **4.1** ** fc

Composition of Household Survey Samples

		Pre-lighting N=168 *9c*	Post- lighting Follow-up N=91 *9c*	New N=47 %
Sex of respondent	Male	46	46	60
	Female	54	54	40
Race of respondent	White	98	99	96
	Black	1	1	4
	Asian	1	0	0
Age of respondent	16- 25	16	17	21
	26-45	38	34 •	40
	46-60	25	28	17
	over 60	22	21	21

Pre-lighting

Table 4.1 shows the sample population to be predominantly white, with a slightly higher proportion of females to males, spread evenly across the age ranges, with the greatest proportion in the 26-45 years age group. Some of the other studies, in particular the Birmingham survey, were carried out in multi-ethnic areas. Monsall does not have a large ethnic population and most specifically ethnic questions were omitted from the questionnaire.

Post-lighting

The post-lighting sample is divided into a larger group, the '91', or original respondents and a smaller group the '47' of new respondents

The'91'

As would be expected with the 91 being re-interviewed from the original 168, their characteristics are very similar. This suggests that those refusing to participate in a second survey, and original respondents who had moved off the estate, did not form a distinctive group in the original sample. This sample is again a predominantly white Population, with exactly the same proportion of women and men, and with a spread right across the age ranges, centring on the 26-45 year old group (34%).

The '47'

The 47 new interviewees, added to the 91 originals in the post-lighting survey, had roughly the same characteristics. Again those interviewed were almost all white, with only a slightly higher proportion of blacks (4%). The balance of genders had shifted around to a higher proportion of men than women (60% to40%), and in age terms there was again a spread right across the range, but with a greater concentration (40%) in the 26-45 year age group.

Pre-lighting *Survey*

While the three tower blocks and the deck access housing arc the most noticeable characteristics of the estate it should be noted that, of those interviewed in the first phase, 35% lived in terraced housing, and 24% in semi-detached. Of the remainder, 24% lived in bed-sits and only 6% in flats.

While there is a large transient minority, there is a remarkable amount of community solidarity among the long established population, on the estate. Among those interviewed 61% knew all or most of their neighbours and 92% knew at least a few. Only 8% knew none. In addition 65% had relations or friends living close by. Of those interviewed just under a third (30%), had lived al their present address for 20 years or more. Almost two thirds (62%), of those interviewed had lived at their present address for 5 years or more, the remaining 38% having been there for under 4 years. These figures indicate a well established, stable population. Judging from those interviewed it is clear that the estate has a strong community, with contacts existing between neighbours, friends and family.

Table 4.2

Other characteristics of respondents

		Pre-lighting	Post- lighting Follow-up	New
		N=168	N=91	N=47
		%	%	7c
Type of dwelling				
	Terrace	35	37	43
	- Semi-detached	24	20	2
	Detached	1	-	6
	Flat	6	39	4
	Bedsit	24	-	39
How many neighbours do respondents know				
	All of them	30	-	28
	Most of them	31	-	17
	Few of them	32	-	36
	None of them	8	-	19
Do they have Relatives/friends close by				
	Yes	65	-	64
	No	35	-	36
How long have they lived at this address				
	Under 12 months	17	-	32
	1-4 yrs	21	-	21
	5-9 yrs	16	-	13
	10-19 yrs	10	-	13
	20 yrs and over	36	-	21

Post-lighting survey

The '91'

The distribution of respondents' characteristics is similar to the pre-lighting survey which was expected as the 91 are a part of the original 168 respondents. The questions on neighbours, friends and relatives known were not asked in the follow up intei'view for a similar reason. There was no question on how long they had lived in the area.

The '47'

For the 47 additional post-lighting interviewees, the proportions for 'type of dwelling' are quite different. A similarly high proportion (43%) live in terraced houses, but the proportion of those in semi-detached housing falls to 2% and those in bed-sits rises to 39%. Of those interviewed in this second batch 45% know all or most of their neighbours, and 81% knew at least a few. Over 63% had relations or friends living nearby. These two results are very similar to the original post-lighting questionnaire results.The 47 interviewed revealed a slightly different pattern of residence. Of these the highest proportion (32%), had lived at their address for less than 12 months, and over half (53%), had been at their present address for 4 years or less, compared to 47% for 5 years or more. This is not altogether surprising as this group constituted a 'top-up' sample following considerable efforts to maximise participation by residents in the first phase of the survey.

The response rates obtained in Monsall were lower than in the other crime and lighting studies, but high by comparison to a number of other surveys on inner city estates in Manchester carried out recently. There is little evidence that refusal to participate in the surveys was in any way systematic.

Personal Safety and Home Security

Pre-lighting

The majority of respondents (34%) said that they felt unsafe in their homes sometimes or always. When asked to explain why they felt unsafe*, most felt it was because of damage to their property, with similar numbers fearing violent crimes.

Table 4.3

Did respondents feel unsafe in their homes?

	Pre-lighting N = 168 %	Post-lighting New respondents N=47 %
Yes	25	13
No	66	75
Sometimes	9	13

Post-lighting survey

Considering both the '91' and the '47' parts of the post-lighting survey, it is clear that there is some change in respondents feelings about safety. Of the '91' 17% felt safer, and of the '47' 26% felt unsafe always or sometimes compared to 34% in the pre-lighting survey.

Table 4.4

Did respondents feel safer in their homes ? (post-lighting follow-up)

	N=91 %
Safer	17
Less safe	4
About same	79

Home Security

Pre-Lighting

As a response to their worries about safety, the majority of residents (70%) had installed some form of security device. The security measures adopted included door chains (39%), window locks (40%), and keeping a dog (22%). The most common precaution was extra door locks (62%). Interestingly only *69c* had installed security or decoy lighting.

Table 4.5

What security devices had respondents installed?

	Pre-lighting N=168 %
Door Chains	39
Extra Door Locks	62
Window Locks	40
Burglar Alarms	12
Panic Buttons	11
Security Lighting	2
Keeping a Dog	22
Decoy Lighting	4

Fear of Crime

A number of questions were asked to establish the extent to which residents were worried about different crimes.

Table 4.6 (a)

Worries about a range of categories of crime.

		Pie-lighting N=t68 %	Post-lighting N=91 %	N=47 %
Do you wony about:				
Your home being broken into				
	A lot	41	37	44
	Quite a bit	23	17	21
	Not mucli	22	18	10
	Not at all	14	27	23
Being robbed in the street				
	A lot	19	14	9
	Quite a bit	19	19	20
	Not much	34	32	28
	Not at all	28	34	43
Being attacked in the street				
	A lot	20	15	13
	Quite a bit	19	21	11
	Not much	34	23	28
	Not at all	28	41	48
Being insulted pestered in the street				
	A lot	7	10	11
	Quite a bit	13	16	15
	Not much	39	21	17
	Not at all	41	53	56
Having your home damaged				
	A lot	23	29	30
	Quite a bit	22	22	28
	Not much	25	19	11
	Not at all	29	29	30

Table 4.6 b

Worries about a range of categories of crime.

		Pre-Ughting N=168 %	Post-lighting N=91 %	N=47 9c
Do you wony about:				
Having your car stolen or damaged				
	A lot	29	36	37
	Quite a bit	14	6	15
	Not much	10	6	7
	Not at all	48	57	41
Being hit or threatened Mith xiolence by someone YOU know				
	A lot	10	10	4
	Quite a bit	4	12	11
	Not much	14	13	15
	Not at all	72	65	70
(Women Only) Being raped or sexually assaulted				
	A lot	18	14	10
	Quite a bit	14	14	20
	Not much	22	12	30
	Not at all	46	61	40

Pre-lighting survey

Burglary tops the list of worries with 64% worrying 'A lot or 'Quite a bit[1]. It seems that damage or theft from property was the greatest wony, with burglary at 64% worrying "A lot or 'Quite a bit[1], having your home damaged by vandals at 45%, and having your car stolen or damaged (at 43%). These correspond to real risks represented by police crime reports.

The degree of concern about crime in the Monsall study is in line with responses to similar questions elsewhere. Given both the nature of the Monsall Estate, and the greater willingness among the respondents to complain about a wide range of problems it is a little surprising that the degree of concern is not higher. It appears likely that positive factors such as the strength of the local community, and negative factors such as worries about employment and the state of the local environment, distract the residents of Monsall from worrying even more about crime on the estate.

Post-lighting survey

After the installation of lighting, there were few significant changes in the concerns of those interviewed. There was no consistent pattern of decline in the levels of concern and, generally, those who had been interviewed before (the '91') wer&more likely to record small decreases in concern, particularly in the case of burglary (worry declining from 64% to 54%) than those (the '47') who had not been interviewed before. This may reflect two aspects of such surveys. There may be a re-interview effect where the respondents change their view of a hypothetical risk because they feel they should be responding to the external stimulus, in this case the change in lighting. The second aspect may be that it is difficult to obtain consistent responses to abstract questions - the concept of how much one worries about something is difficult for many people to grasp. It appears likely that behavioural questions and measures are likely to be more reliable in this case than attitudinal questions as used here. Such questions give the respondent the opportunity to provide factual answers describing changes in their behaviour - rather than hypothetical answers about their feelings. The lack of consistent change in the responses to these questions has been borne out in the other studies.

Table 4.7
Worry about crime by gender

	Pre-lighting N=168		Post-lighting N=91		N=47	
	N=78 Male	N=90 Fem.	N=41 Male	N=50 Fem	N=28 Male	N=19 Fem
	%	%	%	%	%	%
Home being broken into	59	70	48	60	64	68
Being robbed	27	47	19	45	22	37
Being attacked	28	50	20	49	11	42
Being insulted/pestered	16	24	17	25	22	31
Home vandalised	41	50	49	53	56	63
Car stolen	48	37	35	53	47	60
Hit or threatened with violence	7	19	21	24	11	21
Raped or sexually assaulted (women only)		30		31		3i

The table shows that a larger proportion of women tend to worry about all the crimes listed. The main exception was the case of car theft with slightly more men worrying about this than women in the pre-lighting survey. The largest differences in proportions

between the responses given by men and women concerns violent crime. This fear was not reduced by the lighting and may have been affected by a number of violent incidents reported on the estate during the post-Christmas period. Overall, the figures do not show any consistent or significant changes between the surveys.

Women and Elderly

Focusing on two especially vulnerable groups - research shows women and elderly fear crime more than other groups.

Table 4.8

Are there special risks for women and the elderly?

	Pre-lighting N=168 %	Post-lighting N=91 %	N=47 %
Risks for women going out after dark?			
Yes	75	81	85
No	14	12	11
Don't know	11	7	4
Will something happen?			
Very likely	19	52	38
Quite likely	42	29	38
Not very likely	22	19	!3
Don't know	17	-	11
Risks for Elderly going out after dark?			
Yes	83	82	72
No	10	11	19
Don't know	7	7	6
Will something happen?			
Very likely	4!	64	46
Quite likely	38	24	40
Not very likely	20	12	14

Women - three-quarters of those interviewed before the lighting thought that women were at risk when out after dark, and 61% thought that it was 'Very likely' or 'Quiie likely' that something would happen if women went out at night. After the lighting was installed, both of the surveys indicate the concerns that it is unsafe to go out after dark.

and that something is likely to happen, have both increased. Elderly - before the installation of lighting over 80% thought that elderly people were at risk if they went out after dark, and 79% thought that it was 'Very likely[1] or 'Quite likely' that something would happen to elderly people if they did venture out after dark. After lighting was put in, those interviewed considered the risks to elderly people going out after dark not to have decreased significantly, and the likelihood of something happening, in people's minds, had remained much the same.

Precautionary Behaviour

In response to the fear of crime it is unsurprising that the majority of those interviewed took a variety of types of precautionary measures to reduce their risk of personally experiencing crime. Table 4.9 shows the nature of the precautions taken, as percentages are based on the whole sample. As not all precautions were taken by all respondents, percentages do not necessarily sum to 100%.

Combining 'Always', 'Often', and 'Sometimes[1] there is a significant decrease in all of the precautions taken after the lighting was installed, particularly those who avoided going out. However, the proportion of people that took similar precautions during the day remained static. On the issue of the lighting of streets that were avoided, the proportion of those interviewed that avoided badly lit streets decreased slightly. This may suggest that a partial improvement in lighting has a wider effect, with repondents willing to use both well and poorly lit streets more than before.

These results appear to be contradictory because the reported fear of crime has not been affected by the new lighting, while the behavioural manifestation of such a fear - taking precautions, appear to have decreased substantially. This raises again the issue of the extent to which fear of crime can be effectively measured by direct questions. Respondents can answer factual questions concerning precautions taken more easily than questions that attempt to probe their state of mind, and it is difficult to be certain that fears are not created simply by asking about them.

Given the evidence in the literature that fear of crime is a greater factor for women than men, it was anticipated that women were likely to take more precautions than men to avoid the risk. Table 4.10 shows the responses to questions concerning possible precautionary behaviour. It is notable that, again, the follow up survey of previous respondents showed some dramatic changes in precautionary behaviour, while the second sample, taken after lighting, showed slightly smaller percentages of respondents taking particular types of precautionary behaviour. Two conclusions may

Table 4.9 a

Precautions Taken

		Pre-lighting N=168 %	Post-lighting N=91 %	N=47 %
Avoid going out				
	Always	18	2	11
	Often	15	8	6
	Sometimes	16	11	24
	Never	55	74	54
	Don't know	6	5	4
Avoid walking near people				
	Always	27	16	13
	Often	16	15	16
	Sometimes	12	16	22
	Never	37	51	44
	Don't know	9	2	4
Stay awayfrom some streets				
	Always	25	25	22
	Often	14	9	7
	Sometimes	14	14	18
	Never	8	50	4
Go out with someone else				
	Always	30	29	18
	Often	15	9	20
	Sometimes	13	14	13
	Never	37	44	40
	Don't know	6	5	9
Avoid using buses				
	Always	13	7	4
	Often	7	3	9
	Sometimes	9	8	-
	Never	51	64	53
	Don't know	19	18	33
Take taxi or car				
	Always	32	20	16
	Often	24	15	20
	Sometimes	17	16	9
	Never	20	42	47
	Don't know	7	7	9

Table 4.9 b

Precautions Taken

	Pre-lighting N=168 %	Post-lighting N=97 %	Post-lighting N=47 %
Similar precautions taken during the day?			
Yes	30	31	23
No	70	69	77
How well are avoided streets lit?			
Well lit	11	8	4
Badly lit	58	51	50
Both	16	26	27
Don't know	15	14	18
Are the same streets avoided in the day?			
Day only	1	6	-
Night only	71	60	86
Both	28	34	14

be drawn. Firstly it appears that the change in precautionary behaviour was common, and proportional for both men and women when they were interviewed twice so it appears that if lighting had an effect it was the same effect for both sexes. The second conclusion, based on the results from the smaller post-lighting sample, must be tentative but suggests that there was a small change in tjehaviour over the three month period. The difference between the two post-lighting surveys can only be accounted for by a 'wish to please' phenomenon where previous respondents gave responses in the follow up which followed logically from the impact that they felt the lighting *should* have. For that reason it is safer to contrast the independent before and after samples.

Another form of precautionary behaviour may be to carry a defensive weapon,or keep a dog. The first survey showed that over two thirds of respondents took no such precautions. Of those that did dogs were most popular, 15 respondents and 10 respondents carried a sharp instrument. The numbers taking such precautions were so low as not to justify further investigation.

Table 4.10

Precautionary Behaviour by Gender

	Pre-lighting N=168		Post-lighting N=91		N=47	
	N=78 Male %	N=90 Fem. %	N=41 Male %	N=50 Fem %	N=28 Male %	N=19 Fem %
Avoid going out	20	41	13	8	**11**	26
Avoid walking	33	52	20	40	**19**	45
Stay away from some streets	30	48	25	42	**18**	45
Go out with someone else	30	58	24	51	25	55
Avoid using buses	13	28	7	12	4	28
Take taxi or car	38	71	20	47	22	**55**

Table 4.10 shows that there is a marked difference between the precautionary behaviour of men and women, women being far more cautious. There was a remarkable decrease in such behaviour for both men and women between the two surveys. The post-lighting control group also has a lower level of precautionary behaviour than the pre-lighting group but the difference is much smaller. This finding gives the strongest evidence obtained in the survey that the new lighting had an influence on behaviour which arises out of a fear of crime. It is our view that this is a more reliable way of assessing fear than asking direct questions about causes of concern.

Experience of Crime

The British Crime Survey has shown that only a relatively small proportion of crime is officially recorded (Hough and Mayhew, 1983). This has been borne out by the contrast between the official crime statistics for the Monsall estate, which are discussed in Chapter 7, and the victimisation rates given by the respondents.

An attempt was also made to quantify respondents' experience of incidents in the home, or on the streets over the past 12 months. The questions concerning victimisation were not asked in the follow up post-lighting survey.

Table 4.11

Victimisation of respondents over past twelve **months**

	Pre-lighting N=168 %	Post-lighting N=47 %
Home broken into and something stolen	13	20
Attempted break in	25	11
Something stolen from outside	15	30
Vehicle tampered/damaged	24	21
Vehicle stolen	11	5
Something stolen off vehicle	14	11
Deliberate damage to home or property	20	22
Theft from person	3	9
Threat/insult/pestered	17	9
Rape/sexual assault	1	4
Violence	0	9

Table 4.11 shows that the higher victimisation rates for burglary and attempted break-ins, damage to vehicles and damage to home in both surveys. This matches the pattern of officially recorded crime, though more trivial crimes such as damage to the outside of the home tend to go unreported.

In order to form some kind of comparison between pre-lighting and post-lighting, it is perhaps better to examine the six week period prior to each survey, these are shown in Table 4.12. Respondents who were victims of vehiclexfime increased slightly and those who had deliberate damage done to home or property increased from 2% to 15% in the follow-up survey. Those who were threatened, insulted or pestered was also much higher in the follow-up. However, crimes which occurred around the re-lit area (Figures 7.1 and 7.2) did decrease substantially, particularly the number of burglaries. This suggests that a number of these victims lived away from the area which was re-lit. This, in itself, is inadequate evidence of displacement effects - the movement rather than the prevention of crimes, but does suggest that the lighting had some effect on the distribution of crimes in the estate.

It was anticipated that the better lighting may alter the pattern of crimes between day and night. However Tables 4.13 and 4.14 show that there has been no consistent change in the pattern of crimes between day and night. This analysis covers such a

short period and so few crimes, that it is unlikely that anything other than a very strong change would have been detected.

Table 4.12

Victimisation of respondents over past six weeks

	Pre-lighting N=168 %	Post-lighting N=91 %	Post-lighting N=47 %
Home broken into and something stolen	2	**5**	4
Attempted break in	4	**6**	2
Something stolen from outside house	5	**6**	6
Vehicle tampered with or damaged	2	4	9
Vehicle stolen	**1**	4	2
Something stolen from vehicle	**1**	4	**4**
Deliberate damage to home or property	**2**	15	**6**
Theft from person	-	3	**2**
Threat/insult/pestered	**3**	12	**6**
Rape/sexual assault	-	-	-
Violence	**2**	6	**4**

Table 4.13

Timing of incidents occurring within last 6 weeks (pre-lighting)

	Pre-lighting N=168			
	day %	night %	both %	d/k %
Burglary	62	38	-	-
Att. burglary	38	62	-	-
Item stolen outside	33	67	-	-
Vehicle damage	33	67	-	-
Vehicle stolen	50	25	-	25
Item stolen offm/v	50	50	-	-
Damage to home	25	75	-	-
Theft from person	-	-	-	-
Threat/pestered	-	50	50	-
Racial attack	-	-	-	-
Rape/sex assault	-	-	100	-
Violence	-	50	50	-

Table 4.14

Timing of incidents occurring within last 6 weeks (post-lighting)

	Post-lighting N=91				N=47			
	day	night	both	d/k	day	night	both	d/k
	%	%	%	%	%	%	%	%
Burglary	25	75	-	-	**100**	-	-	-
Att. burglary	33	67	-	-	33	67	-	-
Item stolen outside	33	33	**33**	-	33	17	-	50
Vehicle damage	-	-	-	-	25	75	-	-
Vehicle stolen	-	-	-	100	-	100	-	-
Item stolen from m/v	33	33	33	-	40	60	-	-
Damage to home	25	50	13	**13**	20	60	20	-
Theft from person	-	-	-	-	100	-	-	-
Threat/pestered	11	78	11	-	20	20	60	-
Rape/sex assault	-	-	-	-	-	-	-	
Violence	60	40	-	-	-	100	-	-

Table 4.15

Groups seen as a threat

	Pre-lighting N=168	Post-lighting N=91	N=47
	%	%	%
Shouting or banging car door late at night	79 "*	30	34
Being rowdy or abusive	26	28	32
Vomiting or urinating in the street or on your property	16	10	35
Fighting or arguing with each other	20	22	25
Making threats or being aggressive towards you	4	2	6
Being violent towards you	1	0	2
Damaging your car	2	2	2
Damaging your house or property[1]	2	·1	4

Groups Seen As A Threat

Drinkers are one group who can be seen as a potential threat through rowdy or abusive behaviour. Respondents were asked about problems with people being drunk or leaving licensed premises on the estate late at night.Percentages show respondents experiencing this behaviour once a week or more.

The results do not reveal any significant patterns. It would appear that drunken behaviour is rarely directed at individuals and is rarely aggressive, but is of a more inconsiderate nature. Respondents were also asked if groups or gangs of youths hang about in or around this street after dark. In the pre-lighting survey 60% said they did and 62% in survey two. It upset 26% in the first survey and this increased to 41% in the second. It appears possible that one negative effect of the new lighting was a greater awareness by residents of what **was** happening on the estate at night.

Chapter 5

The Pedestrian Survey

The re-lighting scheme was limited to the main pedestrian route through the Monsall Estate. This leads from the bus stops and usual taxi drop at the South West end of the estate through the main square, Parbrook Close, alongside the deck access maisonettes to the Clarendon pub. The aim of the pedestrian survey was to count, and obtain the views of, users of the re-lit area, whether they lived in that part of the estate or not.

The pedestrian survey involved both counting pedestrians and conducting interviews with a random sample of respondents. The survey was conducted over 4 nights in December (before re-lighting) and 4 nights in March (two months after re-lighting). In each period interviews were carried out on Friday, Saturday, Monday and Wednesday nights between 6 and 12 pm. Two teams of two interviewers (comprising one male and one female) were sited at the archways which form **the** southern entry to and the northern exit from the square. In total 113 interviews were completed, 61 before re-lighting and 52 after re-lighting.

Characteristics of the sample.

Table **5.1**

Age of those interviewed before and after re-lighting (percentages)

	Before N=61 %	After N=52 %
16-25	68	57
26-45	25	31
46-60	2	10
60+	5	2

Table 5.2

Gender of those interviewed before and after re-lighting

	Pre-lighting N=61 %	Post-lighting N=52 %
Men	53	40
Women	47	60

Pedestrians were selected at random for interview and a fairly even balance between men and women was achieved. The first pedestrian survey had a slight majority of young males. The second survey had more young women and there was a slight increase in the number of 26-45 and 46-60 age groups.

In both surveys over 90% lived within a 15 minute walk of the interview point and as table indicates, the majority had lived in the area for a considerable length of time.

Table 5.3

Length of time lived in the area

	N=61 %	N=52 %
Less than one year	23	22
1-5 years	23	26
6-10 years	21	24
11-19 years	18	26
More than 20 years	14	4

Table 5.4
Reasons given **for** being out at night

	Pre-lighting N=58 %	Post-lighting N=44 %
Social Club	2	–
Local Pub	17	39
Evening Classes	2	-
Visiting Friends/Relatives	57	50
Late Shopping	3	5
Eating Out	10	5
Work	3	2
Other	5	-

People were asked what reasons they had for being out at night. The majority of respondents were either going to or returning from visiting friends or relatives, (a further illustration of the strong community links on the estate). The 'local pub[1] was also an important reason for going out at night. As Kate Painter pointed out,' This [question] is important in the context of the survey, since it is assumed that lighting will have most impact (positive or negative) in areas where there are inducements for people to use the streets in the evenings after dark * (JCatejfeinter, 1989)

Over half the respondents used the square on six or seven evenings previous to both the before and after interviews, indicating that it is the main way through the estate. A number of the refusals to co-operate in the household post-lighting follow up survey were from earlier respondents who felt that they had not benefited from the re-lighting because it was not outside their houses. However the relatively large flows of pedestrians, and the similarity in their characteristics to those of the household survey respondents, suggest that the re-lighting of this route was in fact a benefit for the whole community on the estate.

Table 5.5
Are you usually alone?

	Pre-lighting N=58 %	Post-lighting N=44 %
Always	31	22
Sometimes	59	75
Never	10	4

Table 5.6
Use of the square

Number of evenings the square was used by respondents during the week preceding the interviews(%)

	Pre-lighting N=58 %	Post-lighting N=44 %
0	3	4
1	3	2
2	3	9
3	-	12
5	5	10
6 to 7	79	56

As a whole our counts revealed a slight increase in traffic between December and March from 1,357 to 1,477 in the surveyed hours. If we begin to examine the time and composition of the flows, some rather more revealing patterns begin to emerge (Table 5.7). It was the mid-evening period 8-10pm when total pedestrian movement increased the most, by 23%. There was a smaller increase between 6-8 pm of 97c. Females out alone decreased apart from the 8-10 pm period. The number of males out alone also decreased for all time periods. Total numbers of males decreased more than total

Table 5.7

Pedestrian counts before and after re-lighting

Group		December N	March N	% Change
Female		*206*	*188*	- *9*
	6-8 pm	88	71	- 19
	8-10 pm	65	74	+ 13
	10-12 pm	53	43	- 19
Male		*407*	*343*	- *16*
	6-8 pm	154	139	- 10
	8-10 pm	143	127	- 11
	10-12 pm	110	77	- 30
Male/female		*160*	*154*	- *4*
	6-8 pm	70	50	- 28
	8-10 pm	58	74	+ 37
	10-12 pm	32	30	- 30
Males in groups		*305*	*299*	- *2*
	6-8 pm	127	120	- 6
	8-10 pm	119	129	+ 8
	10-12 pm	59	50	- 15
Females in groups		*170*	*291*	+ *71*
	6-8 pm	55	123	+123
	8-10 pm	83	139	+ 67
	10-12 pm	32	29	- 9
Males and females in groups		*109*	*202*	+ *85*
	6-8 pm	28	67	+ 139
	8-10 pm	53	96	+ 81
	10-12 pm	28	39	+ 39
Total pedestrian movement		*1357*	*1477*	+ *9*
	6-8 pm	522	570	+ 9
	8-10 pm	521	639	+ 23
	10-12 pm	314	268	- 15

numbers of females between December and March. However, it must be borne in mind that there were twice as many males as females walking alone in the pedestrian counts. The largest increases were mixed male and female groups which increased by 85%. Groups of females also increased by 71%. This may point to an increased confidence for women to go out at night, but that they still feel the need to be with someone. There was a general decrease of all pedestrian traffic between December and March in the 10-12 pm time period and the number of solo males decreased by 11% more than the number of females.

Table 5.8

Victimisation of respondents over the past twelve months

	Pie-lighting N=61 %	Post-lighting N=52 %
Insulted, threatened, pestered	4	31
Car, van, bike etc stolen or damaged	5	18
Physically attacked	2	14

Women were more likely than men to be victims of insults, pestering and threats than men. However, men were more likely than women to be victims of damage to cars,vans or bicycle. This reflects the higher level of car ownership amongst men. Women were more likely than men to be physically attacked in the first survey, in the second, men were more likely to be attacked. However, because of the relatively small numbers of victims with which we are dealing, it is difficult to draw any firm conclusions.

The percentage of respondents who had something stolen, been threatened or been attacked decreased slightly after lighting. When asked if they knew of other people in the area who had a vehicle stolen or damaged, over two-thirds did in both surveys. Vehicle damage or thefts from vehicles were thought to have occurred mostly at night. Actual vehicle thefts were thought to have taken place as much during the day as at night-time.

Reporting of crimes

Respondents were asked whether the incidents had been reported to the police. Insults, pesters and threats were reported less than car damage/theft or physical attack. Out of those who responded to this question (34), 19 had called the police and 16 had not.

Table 5.9

Were the police called when you were:

	Pre-lighting N=61 Yes %	Post-lighting N=52 Yes %
Insulted Or Pestered ?	43	18
Car, Van, Bike Damaged Or Stolen?	56	67
Physically Attacked?	80	60

Fear of crime and personal safety before and after re-lighting

Table **5.10**

Fear of crimes when walking through the estate

Do you feet unsafe when walking through here because of the possibility of crime against you?	Pre-lighting N=61 %	Post-lighting N=52 %
Yes	44	51
No	56	47
Don't know	-	2

When asked whether they ever felt unsafe because of the possibility of crime against them, a significant number said that they did, 44% in the first survey, 51% in the second.This figure may seem to go against an expected improvement in the fear of crime, but it is important to take into account that the proportion of women interviewed

rose from 48% to 61% between the two surveys and in both surveys a larger proponion of women felt unsafe,(twice as many as men in the first survey, and four times as many in the second survey).

Table 5.11 **Worry about specific** <;rimes ^when walking through the estate

Do you worry about the possibility of the following things happening during the day or night when walking through here?

		Pre-lighting			Post-lighting	
	yes	women	men	yes	women	men
	%	%	%	%	%	%
Attack(night)	9	64	34	60	74	38
Attack(day)	**9**	32	3	10	13	5
pester(night)	**8**	43	13	48	65	24
pester(day)	**5**	21	7	15	19	10
Women only						
sex assault(night)	**2**			73		
sex assault(day)	**2**			17		
Rape(night)	**6**			73		
Rape(day)	**2**			13		

Responses show that women worried more than men about all crimes both at night and during the day whilst walking through the area. The total number of men and women who were worried by crimes at night actually increased after lighting was installed, and why women's fear of sexual assault and rape should increase so much is difficult to explain. There may be other factors playing a part here, perhaps the knowledge of a local sex crime had heightened fears. Fears of these crimes did decrease slightly during the day. Those who worried about being raped during the day decreased from 22% to 13% after re-lighting. The differences between men and women's responses was quite significant in all cases, for example, 64% of women compared to 34% of men worried before re-lighting about physical attacks at night.

Avoidance behaviour

One important negative impact of crime and fear of crime is its debilitating effect on people's lifestyle. Behaviour, such as avoidance of particular locations, or taking protective measures against crime is an indication of this negative effect.

Table 5.12 Precautions against crime

As a precaution against crime do you ever?

	Pre-lighting			Post-lighting		
	yes N=61	men N=32	women N=29	yes N=52	men N=21	women N=31
	%	%	%	%	%	%
Avoid going out after dark although you would like to	26	9	43	23	5	36
Go out after dark with someone rather than by yourself	43	13	79	46	19	65
Stay away from certain areas within a 15 minute walk after dark	48	29	68	48	33	58

In both surveys, about a quarter said that they avoided going out after dark, with a further 12% in the first survey and 17% in the second who said they would sometimes avoid going out. Almost most half of respondents in both surveys would rather be with someone else when out after dark, and would stay away from certain areas as a precaution against crime. In all cases a greater proportion of women took these precautions. Most respondents said that they would not take similar precautions during the day.

Again, it appeared that men were the least fearful - all of the men interviewed in the second survey said that they would not take these precautions during the day whereas only 61% said the same.

Table 5.13

Precautions taken during the day

Do you take the same precautions during the day?

	Pre-lighting			Post-lighting		
	both	men	women	both	men	women
	N=61	N=32	N=29	N=52	N=21	N=31
	%	%	%	%	%	%
No	81	88	78	71	100	61

A large number of those interviewed took some physical precautions when walking round the area. It is rather disturbing to note that knives were the most frequently mentioned object. Mentioned in 'other' were hammers, screwdrivers and a whistle.

Respondents were asked whether they thought certain problems were more or less common in the area (within a fifteen minute walk of the interview) than they were five years ago. With each problem in both surveys "more" was the main response except in the case of street lighting. Those who thought threats were more common increased from 50% to 23%. Those who thought lhat burglary more common stayed the same.

When asked whether poor street lighting was a more common problem, it fell very significantly from 79% to just 30% after re-lighting. However respondents who thought that it was a problem which had remained static increased from 7% to *479c*. Council repairs were also viewed as a less common problem after re-lighting. The problem of being afraid to go out at night was viewed by many as more common, 73% in both surveys, but those who felt vandalism was less common increased by 8%. There was no significant change in the view of youths hanging round as a problem and those who thought noisy neighbours were a more common problem increased from just 6% to 42%.

In the first survey, the problems believed to be most serious were burglary, vandalism and poor street lighting. Burglary stayed high on the list of serious problems after re-

lighting, but vandalism decreased and poor street lighting fell from nineteen mentions to only two.

In both surveys, the best three ways in which respondents felt crime would be reduced were more police on the beat, stronger locks and better, brighter street lighting. Just over half the women interviewed said that they worried about sexual assault and rape, whilst walking through the area at night. This number actually increased to over two thirds after lighting installation. Those who worried about this sort of attack happening in the day was less (24%) and diminished further in the post lighting survey.

Worries of all respondents on pestering at night was quite small (28%) but this increased to 48%. Forty-three percent said that they took precautions whilst walking through the area, such as carrying a knife or taking the dog, but this fell to 34% after lighting. Other basic precautions, such as avoiding going out after dark, walking with someone else, and avoiding specific areas, were undertaken both before and after lighting with little change in the figures.

When asked ways in which women's safety could be improved, self-defence and better, brighter street lighting were believed to be the best measures, but in the second survey self-defence and more police on foot patrol were thought to be the best.

Chapter 6

The response to the new lighting

Post-Lighting Results

The post-lighting questionnaire contained a number of questions directly related to the new street lighting and the effects it may have. The effect of the new lights on the estate was dramatic (for an example see Frontispiece, before and after photographs of Parbrook Close - the main square of the estate). To a cynical outsider the main effect was to remove the night-time relief from the sight of a poorly maintained decaying estate. This view was shared by the 21% of respondents who felt the lights made the area look worse. For mosj of the residents, however, the new lighting constituted a significant improvement, 58% saying that it made the area look better.

Table 6.1

Changes in street lighting

Have you noticed any change to the street lighting in your street or in Monsall in the last few weeks?

	All respondents N=89 %
Yes	73
No	27

If yes, could you tell me more about the changes you have noticed?

	%
Brighter	90
Duller	3
Don't know	7
Better maintained	67
Worse maintained	6
Don't know	27
Easier to recognise people	84
Harder to recognise people	4
Don't know	12
Improved look of the area	58
Worsened look of the area	21
Don't know	21

Most respondents (73%) had noticed the change in street lighting when asked in the post-lighting survey. The majority found the lighting brighter and found it easier to recognise people (84%). Two thirds thought that it was better maintained. In all cases, very few felt it had a negative effect. If we compare the pre-lighting survey with the '47' control survey, however, there appeals to be little change in opinions on street lighting. Only when respondents were asked about shadows or glare created by the lights did the percentages fall considerably, from 50% to 26%. Fewer respondents thought that they were unevenly spaced.

The results appear paradoxical as the findings in Table 6.1 show a strong positive reaction to the new lights, yet Table 6.2 shows very similar views of the general state of the lighting between the pre-lighting sample and the post-lighting control group. It seems likely that this reflects the decision only to re-light the central walkway on the estate. It seems possible that the positive effects of this re-lighting were balanced by increased dissatisfaction with the lighting elsewhere on the estate which contrasted with the new lights. Our interviewers reported just such dissatisfaction and its adverse effect on response rates in the follow-up survey.

Table 6.2

Opinions of new lighting

Do you think that the lighting in this area is:

	Percentage^ answering 'yes'	
	Pre-lighting N=168 %	Post-lighting N=47 %
Too dull	69	64
Too bright	2	4
Unevenly spaced	64	47
Well maintained	33	38
Badly maintained	54	53
Satisfactory	36	26
Create shadows/glare	50	26
No views	7	9

Table 6.3

Influence of street lighting on safety

Would you say that the changes made to the street-lighting have had any effect on how-safe or unsafe you feel in the streets around your home?

	N=68
	9c
No	46
Yes-feel safer	54
Yes-feel less safe	-

Since the lighting was changed do you go out less after dark. more often than before. do you go out less after dark or has it had no effect on your willingness to go out after dark at all?

	N=67
	%
Go out more after dark	10
Go out less after dark	*2*
No change	88

An important effect of the re-lighting scheme was on the feelings of safety. Yet again there appear to be conflicting results depending on the context of the questions. Table 6.3 shows that, when asked directly about the influence of the n'cw lights on safely. over half of the respondents reported feeling safer and none felt less safe. Yet replies to a question related to specific risks of assault, reported in Table 5.11. showed an increase in fear among both men and women following re-lighting.

Table 6.4

Effects of new lighting

Do you think that the changes made to the lighting of Monsall have had any of the following effects?

	N=65 (those of the '91 who noticed a change)			
	Increase %	Decrease %	Same %	Don't know %
People using the street at night	28	3	42	27
Vandalism to cars/property	5	16	50	30
Noise	13	5	56	27
Youths hanging around	14	9	63	14
Confidence going out at night	22	3	74	2
General community safety	39	-	45	16
Personal fear of crime	2	14	79	6
Burglary	11	8	51	31
Risks to women	6	25	48	22
Risks to elderly	5	20	52	23
Road safety	8	9	54	29

Table 6.5

Lighting preference

Do you have any preference for orange or white street lights?

	Pre-lighting N=165 %	Post-lighting N=82 %	N=47 %
Prefer orange	13	6	4
Prefer white	53	63	66
No preference	32	22	30

It was notable that once white lighting had been installed it was preferred by a rather larger proportion of respondents in both post lighting surveys. It appears that when questioned directly about the lighting, outside the context of crime, the new improved lighting had been noticed and was appreciated.

Chapter 7

Reported crime and crime prevention

The Greater Manchester Police are involved in a number of multi-agency approaches to the problems of the Monsall Estate and have collaborated with the Greater Manchester Probation Service in monitoring crime on the estate. Crimes recorded on the estate are notified to the probation service, and with the full co-operation and agreement of the local Police Division these records were made available for this study.

The crime levels on the estate are high compared to national averages but not so high as to be seen as a particular problem in relation to other problem areas served by the local force. The estate suffers from a number of drug related crimes, and this is recognised as a problem both by residents, highlighted in responses to a number of open ended questions in the surveys, and the police. This must be seen in the context, however, of even more serious drug related problems affecting the City of Manchester

Table 7.1

Recorded Crime **on** the Monsall Estate January 1990 to April **1991**

	N	%
Property	18<x	**59**
Burglary	129	**41**
Items stolen from outside dwelling	6	**2**
Damage to home	51	**16**
Vehicle	86	**27**
Vehicle tampered with / damaged	20	**6**
Vehicle stolen	41	**13**
Something stolen from vehicle	25	**8**
Personal	35	**12**
Theft from Person	6	**2**
Rape / sexual assault	2	**1**
Violence / assault	27	**9**
Other	9	**3**
TOTAL	**316**	100

as a whole. In the recorded statistics, however, crimes against property, vehicle related crime and crimes against the person dominate. The total number of recorded crimes for the 15 months from January 1990 to April 1991 was 316. These are categorised, using the classification used in the survey, in Table 7.1 below. The table sub-totals the major groups and then shows the itemised list below each group heading.In order to gain an impression of the possible effect of the re-lighting the crimes occurring during the six weeks before the first survey and the six weeks before the second survey (once the lighting had been installed for about two months). These are summarised in Table 7.2.

Table 7.2

Recorded Crime on the Monsall Estate

Total number of crimes in the 6 weeks before pre-Ughting survey (A) 6 weeks before post-lighting survey (B). Crime group totals in bold.

	A Prc-lighting	B Post-lighting
Property	26	15
Burglary	21	14
Items stolen from outside dwelling	-	-
Damage to home	5	1
Vehicle	11	4
Vehicle tampered with / damaged	6	2
Vehicle stolen	4	2
Something stolen from vehicle	1	-
Personal	3	5
Theft from Person	-	-
Rape / sexual assault	-	-
Violence / assault	3	5
Other	-	-
TOTALS	**40**	**24**

Both over the 15 month period and in the two six week periods running up to the questionnaire surveys property related crime was the largest problem. This validates the respondents assessment of 'big problems' discussed in Chapter 2 and their perceptions of victimization risk discussed in Chapter 3. Both burglary and vandalism are general widespread problems on the estate. These risks are well known to the residents and they were shown in the survey to take a range of precautions against these crimes. While personal attacks are a cause of considerable worry, particularly to women and the elderly, they are relatively rare on the estate although there was a slight increase in the number of attacks between the two periods.

The period over which crimes could be recorded following the installation of the new lighting is too short to be able to draw any firm conclusions. The confounding factor of the proximity of the first field-work period to Christmas, when burglaries can be expected to increase because of the additional goods in the houses, makes any conclusions tentative at best. However there was a relatively large percentage decrease in recorded crime between the two 6 week periods. While not statistically significant, when taken in combination with the results of the other five studies and earlier studies in other areas, the consistent decreases in burglaries and other crimes, particularly in the vicinity of the new lighting adds circumstantial evidence to the case for lighting as a crime deterrent. Two recent Home Office publications (Ramsey and Newton, 1991 and Atkins, Husain and Storey 1991) cast doubt on the efficacy of widespread re-lighting on overall crime levels and account for the types of results obtained in our study by suggesting that specific crime 'black spots' can be influenced by re-lighting. This raises the issue of displacement - are better lights simply a factor in moving crime from better to worse lit areas? There is some very limited evidence in the case of our study that this may have been the case.

The distribution of crimes in the two periods has been plotted on two maps reflecting the two six week recording periods (Figures 7.1 and 7.2). These maps show the re-lit route through the estate and the distribution of property, auto, and personal crimes recorded around it. Not only is the reduction over the period notable (the maps do not cover the whole estate, and do not as a result reflect all local crimes), but the reduction in property crimes along the re-lit route is remarkable. It is possible that potential offenders, deterred by the better lighting, simply turned their attention to less well lit properties. However an overall reduction in recorded crimes suggest the more optimistic view that the lighting actually prevented, rather than displaced, further crimes against properties along the re-lit route. Somewhat disappointingly, however, there was a slight increase in the number of personal assaults recorded on the estate and

Figure 7.1
Reported Crimes in the vicinity of the relighting route - 6 weeks before pre-lighting surveys

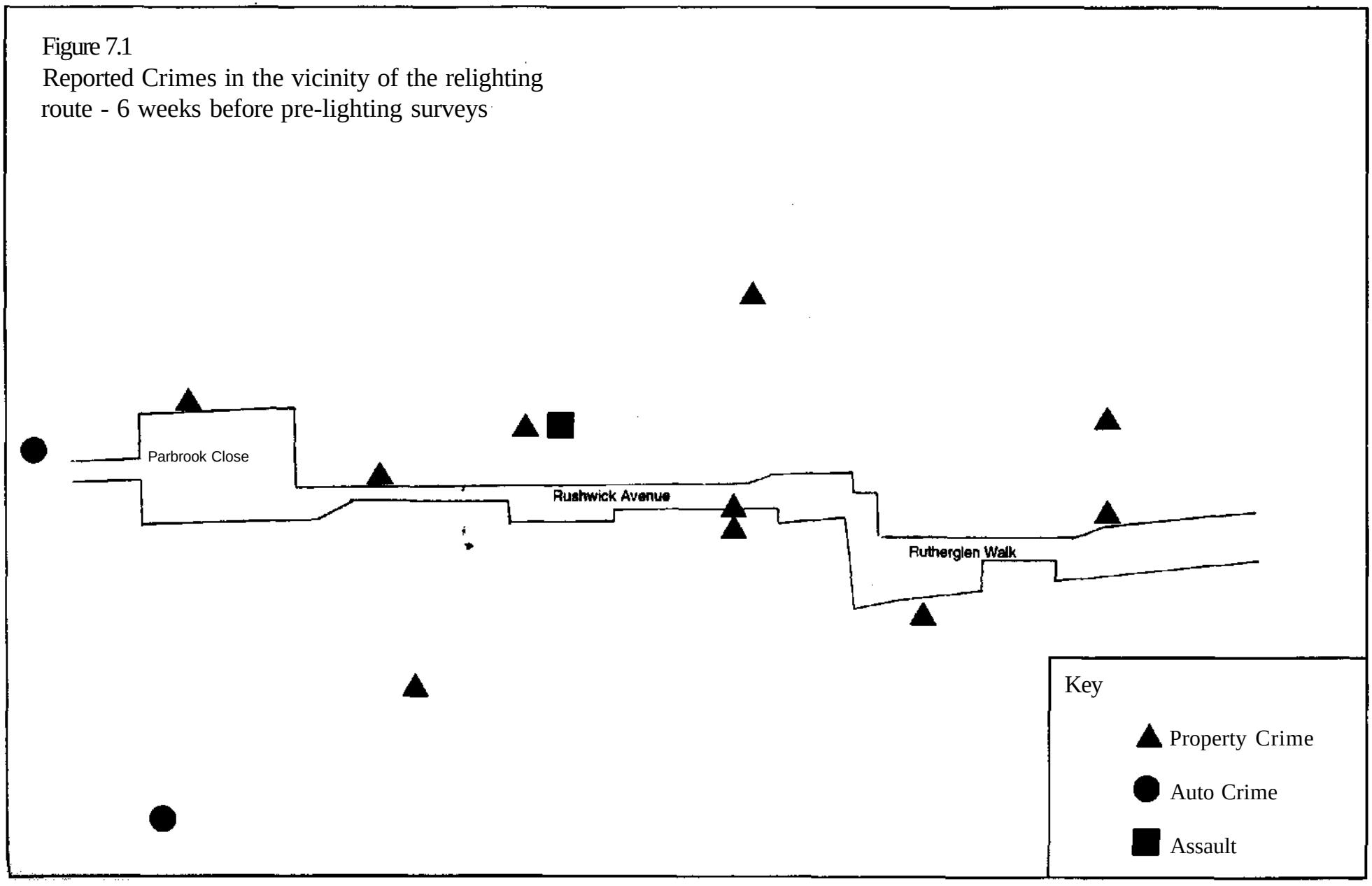
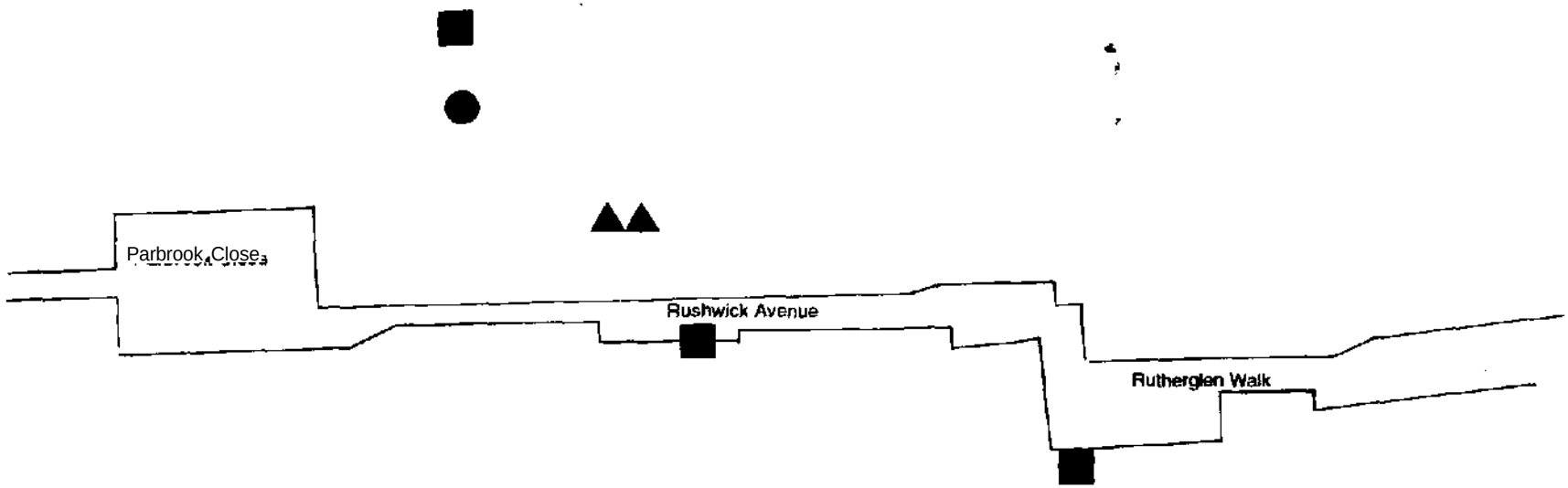


Figure 7.22

Reported Crimes in the vicinity of the relighting route - 6 weeks before post-lighting surveys



Key

Property Crime

Auto Crime

Assault

two of these took place on the re-lit route. It should be noted, however that these are relatively rare crimes in this area.

We have argued elsewhere (Barr and Pease, 1990) that rather than worrying about displacement effects, attempts should be made to deal with crime 'placement[1]. This is based on the somewhat pessimistic view that if crime cannot be prevented then a positive approach should be taken to achieving a particular distribution of crimes that is more equitable - or conforms to alternative social objectives. It appears that the provision of a high standard of lighting (beyond the appropriate British Standards, see Technical Appendix) can, and probably does in this case, contribute to crime control. However, it is probably best used as a deterrent in highly victimised areas and as a means of positive discrimination in combination with other policies for such areas. The respondents to the pre-lighting survey identified street lighting as the second most popular crime prevention strategy after an increased police presence.

Table 7.3

Recommended methods of crime prevention

Which three measures would most reduce crime in Monsall?

	Pre-lighting N=168 %
More police on foot patrol	91
Better, brighter street lighting	55
Stronger locks on doors and windows	51
More leisure facilities for young pe©[fle	38
Harsher sentences for convicted offenders	37
More neighbourhood watch schemes	26

Evidence in our survey does not support the Home Office view that the main role of improved lighting is in reducing the *fear* of crime rather than crime itself. The tentative evidence from this survey suggests that the reverse was in fact true, with the improved lighting having little effect, or even a negative effect on the fear of crime while possibly helping to achieve a reduction in actual crime levels. In the context of crime placement it would be reasonable to expect a uniform increase in lighting standards across a large area, such as an entire borough or complete neighbourhoods, not to have a significant effect on crime levels. Potential criminals probably assess the *relative*

risks involved in committing alternative offences, or the same offence in alternative locations. So, for example, habitual burglars will normally choose properties in which the risk of being seen and caught is minimised. If that risk is increased, by lighting particularly vulnerable areas, the burglars may transfer some of their attention to areas with a similar, higher level of risk of apprehension. Thus a measure such as lighting can be used to help equalise the probability of victimisation across areas. If, however, the absolute risk of apprehension across an entire area is increased, making no relative changes it seems likely that the pattern of crime may remain the same as before as has been the case in the Home Office Wandsworth study.

The analysis of crime statistics is fraught with difficulties and it is almost impossible to account for change in crime patterns by reference to a single change of circumstances in a changing environment. There is certainly no evidence in these figures, nor in the responses in the pedestrian and household surveys that the additional lighting has increased the risk of crime. There is, evidence, in the trends of the crime figures, however that a positive change has occurred in recent months and has coincided with the re-lighting of the estate. In the absence of other evidence it should be concluded that the additional lighting is likely, though not certain, to have contributed to this decline. Given the very low cost per household of the limited scheme installed so far (capital costs approximately £16.70 per household, revenue costs approximately 66p per annum) it would be adequate to show that two detectable burglaries, subsequent court appearances and three month jail sentences (estimated to cost £7765. KPMG Peat Marwick 1990), had been prevented in order to cost justify the lighting improvement and its running costs for three years.

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Chapter 8

Conclusions

Questionnaire surveys such as those employed in this study are an imperfect instrument to record the subtleties of human behaviour, attitudes and feelings. They are used extensively in social science, however, because they provide the best method available for the monitoring of social change. Questionnaire surveys seldom give unequivocal results and very large samples, which are not usually economically feasible, are required to achieve levels of statistical significance that would be acceptable when testing drugs for example. Even matters of great national interest involving a single simple question such as 'If an election were held today which party would you vote for' are subject to margins of error, in normally published surveys of plus or minus 3%. In the studies reported here the margins of error are in the order of 10% for questions answered by all respondents and larger when subgroups are analysed. The best that one can hope for is to establish trends and comparability with similar studies carried out elsewhere, the conclusions drawn here must be read in that light.

The local situation

The Monsall Estate was suggested for this study by Manchester City Council because it was known to have a number of problems associated with the physical environment leading to difficulties in letting property and a resulting high turnover of a minority of properties on the estate. It was not immediately clear to us, but was reflected by the results of the surveys and informal reports from our interviewers, that this problem tends to obscure the fact that the majority of residents Jiadlited on the estate for over five years and have strong local community and family ties. Any conclusions that may be drawn from this study are likely to be applicable to similar local authority estates with similar problems but cannot be easily generalised to other types of area. The main research question was therefore, 'can improved lighting make a contribution to community safety in areas with multiple social environmental and economic problems'.

Was lighting a recognised problem?

A difficulty with any research focussing on a particular improvement is that it may bring into sharper focus an issue which was not previously seen as important. This does not appear to have been the case here. The City Council's own surveys on the estate had already identified lighting as an issue and the City Engineer's Department were aware of maintenance problems and the poor level of existing provision. Before respondents

were fully aware that our surveys were concerned with lighting, 51% reported being afraid of going out after dark and 37 % complained about street lighting as a 'big problem' in the area. The latter figure is nearly twice as high as the ratings in the Hull. Leeds and Glasgow studies. This is an important result because it might have been thought that in an area with many problems lighting would not be considered to have great significance. This was not the case and suggests that lighting should be considered as one of a package of measures for areas such as this.

Lighting and the fear of crime

The issue of attempting to manipulate the *fear* of crime is a controversial one. On the one hand such fear, where rational, is seen as an important defence mechanism which should not be reduced if, as a result, potential victims leave themselves exposed to risk. Measures should be aimed at reducing crime itself rather than the fear of it. On the other hand much of the fear of crime is misplaced. It has been shown that vulnerable groups such as women or the elderly frequently overestimate the likelihood of being victims of a crime and the fear itself significantly reduces the quality of their lives. In such cases the reduction of that fear can have a positive effect on well being and is justified, particularly if it does not lead to higher risk behaviour - which could lead to an increase in crimes against such groups.

While that argument has great policy significance, and is of academic interest, the results in this survey showed no consistent reduction in *reported* fear of crime among either pedestrians or residents. A second factor involved here is the nature of the questions that can be asked. For example if one were to ask 'Are you worried that if you go out after dark you will get mugged and have your wallet stolen?' (not a question in our survey), a hypothetical scenario has been established to which people may respond even though they have no such fear normally, and such worries do not affect their lives. The power of imagination can make people respond positively to such a question. A more reliable, though indirect, method of establishing fear of crime is to ask factual questions about behaviour - and to observe behaviour. Responses to such factual questions in both the household and the pedestrian surveys showed a reduction in the range of precautions that respondents took when going out at night. It may be inferred from this that there was some effect when the lighting was installed. Sample sizes were too small for this to be statistically significant. However, when read in conjunction with similar effects elsewhere, where the change in lighting was the only common factor, this provides some support for the view that improved lighting led to changes in behaviour. These include a relaxation of some precautions taken and some increases in the number of pedestrians, particularly women in groups, using the streets at night.

Reducing Crime

The best test of the effects of additional lighting must be the before and after patterns of victimisations reported in the interviews (considerably higher than the amount of reported crime) and the official crime reports. Again, the relatively small numbers, and the short time periods involved, make it difficult to draw any strong inferences from the figures. There does, however, appeal* to have been a reduction in the crimes one would expect to be affected by better lighting. Burglaries have been reduced, particularly in properties along the re-lit route. It was a matter of concern however, that there was a spate of assaults, including some in the re-lit area prior to the follow up survey.

It is reasonable to infer that there may be an effect of the new lighting on both the absolute number, and more particularly on the distribution of crimes and crime types around the estate. To confirm such trends much more detailed studies would need to be carried out over a longer period than was possible here. There was little evidence from the survey responses that victimisation patterns were related either to housing type or the location of the new lighting. However, the official recorded crimes did appear to have been affected by the location of the new lighting.

Responses to the lighting

While the emphasis in this report is on community *safety,* it was notable that both in questions specifically about the lighting, and in unsolicited comments ,the lighting was generally thought to be much improved and this had a positive effect on the estate as a whole. A small note of caution should be sounded, because the most positive replies were obtained in the section of the follow-up questionnaire fhat specifically asked about the new lights. Lighting related questions in the post-lighting control sample showed relatively little change from those before the lighting. This again raises the issue of the effect of the questionnaire in focussing attention on one particular improvement, which was approved of, but may not have been at the top of many respondents list of concerns.

Conclusion

It would be simplistic to expect a study such as this to show unequivocally that lighting banishes crime, and the fear of crime, at the flick of a switch. Given the difficulties of an area such as the Monsall Estate the pessimistic view may have been that partial relighting would be a token gesture that would do little for the local residents. This does not appear to have been the case, there is tentative evidence of a range of changes of feeling, attitude and behaviour on the estate throughout the study.

We concur with the City Engineer's Report (Technical Appendix) that the level of lighting achieved in the re-lit areas is neither necessary nor appropriate everywhere. However, re-lighting has a dramatic effect on the night-time character of an area and can be used as one of a battery of measures in areas such as Monsall. The residents clearly want the lights, but also want them to illuminate a better maintained, safer, cleaner and more heavily policed environment. We feel that re-lighting should be used in difficult areas to highlight a range of changes in the physical and social environment, and that lighting should not be used as an end in itself. The costs of installing and maintaining additional lights appear to be low in relation to a large range of social costs incurred by leaving such areas poorly lit. While it is very difficult to relate this expenditure directly to reductions in crime or accidents, we feel that the cumulative evidence suggests that the re-lighting of particular problem areas is a highly worthwhile form of positive discrimination. It is one of a range of measures that could be hoped to stimulate a virtuous cycle of community change leading to a brighter and safer Monsall which was no longer viewed as a problem area.

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Technical Appendix

Brian Kerridge, City Engineer's Department, City of Manchester.

1 Selection of site for the study

Manchester City Council established a Community Safety Team of officers in the Chief Executives Department in March 1988 to further the development of practical policies on crime related community safety. The Council subsequently developed a pilot project on the Monsall Estate the major objective of which was to work with local residents, to identify and stimulate the development of those features of neighbourhood life which are seen by residents as likely to be significant in inhibiting crime and fear. As a consequence of this project, DOE Urban Programme Funding was secured for various types of improvement works including upgrading the street lighting. The lighting and crime study was seen as an opportunity for the further development of the City's own initiatives and in view of finance for street lighting improvements already having been secured for 1990/91, the Monsall Estate was an obvious choice of location for the study.

The street lighting on the estate was generally of a similar standard throughout. Therefore, the specific site of the study was selected on the basis of where improvements in the street lighting would provide the greatest benefit, bearing in mind that as of July, 1990, there was no financial commitment to the relighting of the whole estate. The site which was chosen is indicated on the Estate Layout Plan drawing No 2. and is the "arterial" pedestrian route between Sedgeford Road and Jocelyn Street via Parbrook Close, Rushwick Avenue. Rutherglen Walk and St. Augustine Street.

2 Existing Street Lighting

The existing street lighting on the study route is shown on drawing No 3 and consists of 13 positions with 35 watt low pressure sodium lanterns mounted at heights of 4 to 5 metres with photo electric cell control and low loss control gear. The four columns and lanterns on St. Augustine Street were erected in 1964. The remaining 9 positions were erected when this part of the estate was built in 1969.

3 Design Standard For New Lighting

In May 1990, the City Council resolved that the recommendations of Part 3 of the British Standard Code of Practise for Road Lighting (B.S. 5489:1989) for subsidiary

roads and associated pedestrian areas be adopted throughout the City. Also, that high pressure sodium lighting be used as the preferred light source.

Break-ins, personal attacks, drug abuse, vandalism to void properties and street lighting, illegal dumping, inadequate policing and low levels of lighting were all issues which had previously been identified by the City Council as being of concern to the residents. In view of these problems and by virtue of the study site having been selected for its importance as a main pedestrian route through the estate, category 3/1 of B.S. 5489 Part 3 which stipulates average and minimum illuminance levels of 10 and 5 lux respectively, were considered to be generally appropriate. However, Parbrook Close, a pedestrian square at the western end of the site which contains seven shops and is the main focal point on the estate warranted higher levels of lighting. A minimum level of illumination of 10 lux was felt to be appropriate which is broadly in line with the recommendations of BS 5489 Part 9. This minimum level of illumination was also used for the design of the lighting for the pedestrian square at Rutherglen Walk which also contains one local shop and abuts the Clarendon Public House.

4 New Street Lighting

4.1 Mounting heights

The mounting height of luminaires was carefully considered in order to achieve the objectives of lighting uniformity and to deter vandalism whilst at the same time considering the day time appearance. It was decided that on St Augustine Street the height should be 6M since this would afford the luminaires some extra protection from vandalism whilst not exceeding the eaves height of the buildings. The remainder of the site, being made up of the much taller property built in the 1960's, could be lit from a mounting height of 8M without fear of detracting from the day-time visual scene. The extra height in Parbrook Close and Rushwick Avenue also meant that a significant contribution to the illuminance levels on the first floor balcony areas was achieved.

4.2 Column types

All lighting columns used were galvanised steel and where these could be accessed by hydraulic platform for maintenance purposes these were of the simple straight pole type. In the other areas it was decided that hinged columns should be used and that these should be the base hinged type since this column from experience has proved to be the more vandal resistant option.

4.3 Light source

High pressure sodium was chosen as the preferred light source from the outset.

However, as an experiment tubular 150 Watt SON deluxe lamps on 8 metre columns were used on the pedestrian areas remote from the carriageway due to there superior colour rendering characteristics, ie colour rendering indices of 65 for a 150 Watt SON-DL as compared with 25 for the standard 150 Watt SON-T.

This trial was carried out in the knowledge that the 150 Watt SON-DL lamp gave a lumen output of 11.5 KLM compared with 15.5 KLM for the 150 Watt SON-T and 17.2 KLM for the 150 Watt SON-T Plus lamp. However, since all of these lamps operate on the same control gear, there is always the option in the future to change to SON-T or SON-T Plus temps which would have the effect of increasing the horizontal illuminance by approximately 35 % and 50 % respectively albeit at the expense of colour rendition.

On St Augustine Street 70 Watt SON-T lamps were used. Refer to drawing No 4 and associated schedule.

4.4 Luminaire choice

The equipment of Urbis Lighting was used on this scheme although it is fair to say. that the same night time visual effect could have been achieved using any manufacturer's equipment although the positions of the lighting columns would have been different and the number of luminaires required may also have differed.

The whole range of Urbis luminaires were assessed in order to determine which optic would best suit the requirements of the scheme. The spherical shaped Saturn lantern was chosen for the shopping areas with more conventional type street lighting lanterns (ZX2) for use on the remainder of the pedestrian area and similarly the ZX12 lantern on St Augustine Street, see drawing No 4 and associated schedule.

5. **Capital Installation** Costs

The total cost of removing 13 existing lighting positions and installing 19 new lighting positions including all labour, transport and materials, permanent reinstatement of the highway surface and the electricity supply authority's disconnection, transfer and new supply charges amounts to £ 12,595.

This equates to an average of £ 663 per new lighting position.

6. LIGHTING LEVELS BEFORE AND AFTER

The new lighting was installed and commissioned and the old equipment removed in January 1991. In order to monitor the change in illumination levels, the horizontal illuminance was measured at 352 "point" locations before and after installation of the new lighting on 24th October 1990 and 9th May 1991.

Table 1 compares the actual before and after illuminance values with the design values. These readings have been separated into five areas, as indicated on drawing No 5.

Table A.I

(Site Measured Values (3f Horizontal Illuminance For "Before" And "After" Schemes Compared With Design Values)

Location	Before Relighting		Design Level		After Area **Relighting**	
	Ave.	Min.	Ave.	**Min.**	**Ave.**	**Min.**
1 Parbrook Close (footpath)	1.5	0.3	10.0	5.0	14.3	**4.0**
2 Parbrook Close (Square)	1.8	0.4	-	10.0	15.5	**9.0**
3 Rushwick Avenue	2.5	O.I	10.0	5.0	12.6	**4.0**
4 Rutherglen Walk	2.3	0.3	-	10.0	20.3	**8.0**
5 St Augustine St	3.5	0.5	10.0	5.0	12.8	**5.0**

7. Statistical Summary

		Before	After	Increase
(i)	Average Illuminance For Whole Area	2.6 Lux	14.1 Lux	540%
(ii)	Minimum Illuminance For Whole Area	0.1 Lux	4.0 Lux	4000%
(iii)	Total Number Of Lighting Positions	13	19	46%
(iv)	Total Annual Energy Cost	£ 154.96	£ 600.04	390 %
(v)	Average Annual Energy Cost per position	£11.92	£31.58	260%
(vi)	Total Annual Maintenance Costs	£ 93.99	£ 152.96	160%
(vii)	Average Annual Maintenance Costs per position.	£ 7.23	£8.05	11 %

8. Conclusions

5.7 *Illumination*

Section 6 of this appendix indicates that the design level for average illumination was achieved at all the sections of the site (see photographs orientation is indicated on drawing No 5). The design level for minimum illumination was achieved in the main, however, table 1 quotes the absolute lowest illumination levels measured on site which fall below the design level but which only relate to a few small isolated areas at the site extremities. From a subjective assessment of the illumination level after implementation of the scheme it is considered that the design objectives have been achieved.

It is also considered that whilst the levels of illumination achieved are high in comparison with existing levels of illumination in similar situations elsewhere in the City, they are nevertheless appropriate to the site in question.

8,2 Increased energy and maintenance costs

In order to achieve an acceptable level of illumination on the site (a 5.4 fold increase in average illumination) it was necessary to increase the number of lighting positions by 46 % and to incur a 3.9 fold and a 1.6 fold increase in future energy and maintenance costs respectively. A simple comparison of energy and maintenance costs before and after improvements in the street lighting can be totally misleading, alarmist and detrimental to the aim for improved standards of public lighting unless such statistics are accompanied with substantive details. In this case, the reason for such high increases in energy and maintenance costs is not because (he new lighting levels are too high but that the original lighting was totally inadequate. The old lighting was of a height and type which rendered it vulnerable to vandalism. Even when all the positions were operative large areas of the site remained in darkness.

In effect, the old lighting did not serve the purpose for which it was intended. It could be argued therefore that the energy and maintenance costs associated with the old lighting was not money well spent. It is therefore considered important that assessment of street lighting improvements should be based upon need and not prejudiced by energy and maintenance cost comparisons.

8.3 Capital installation costs

The total costs incurred in removing the old lighting and installing the new are not indicative of the general costs of street lighting renewal in a residential area of the City of Manchester. The average cost of £ 663 per new position should not be used as a "yard stick" for the following reasons :-

(i) The execution of the work was not the subject of a contract and hence there was no competitive tendering.

(ii) The materials used were more expensive than would be used in the majority of residential areas due to the nature of this particular site.

(iii) The materials were purchased in small quantities without competitive tendering.

(iv) The more expensive SON deluxe (SONDL-T) lamps were used purely as an experiment.

(v) The geography of the site, the crime related problems and the relatively high standard of illumination applied are neither typical nor appropriate for all of Manchester's residential ares.

(vi) The scheme constitutes less than 0.05 % of subsidiary road lighting within the City and is therefore an inadequate sample on which to extrapolate statistical information.

8.4 Lighting of unadopted areas

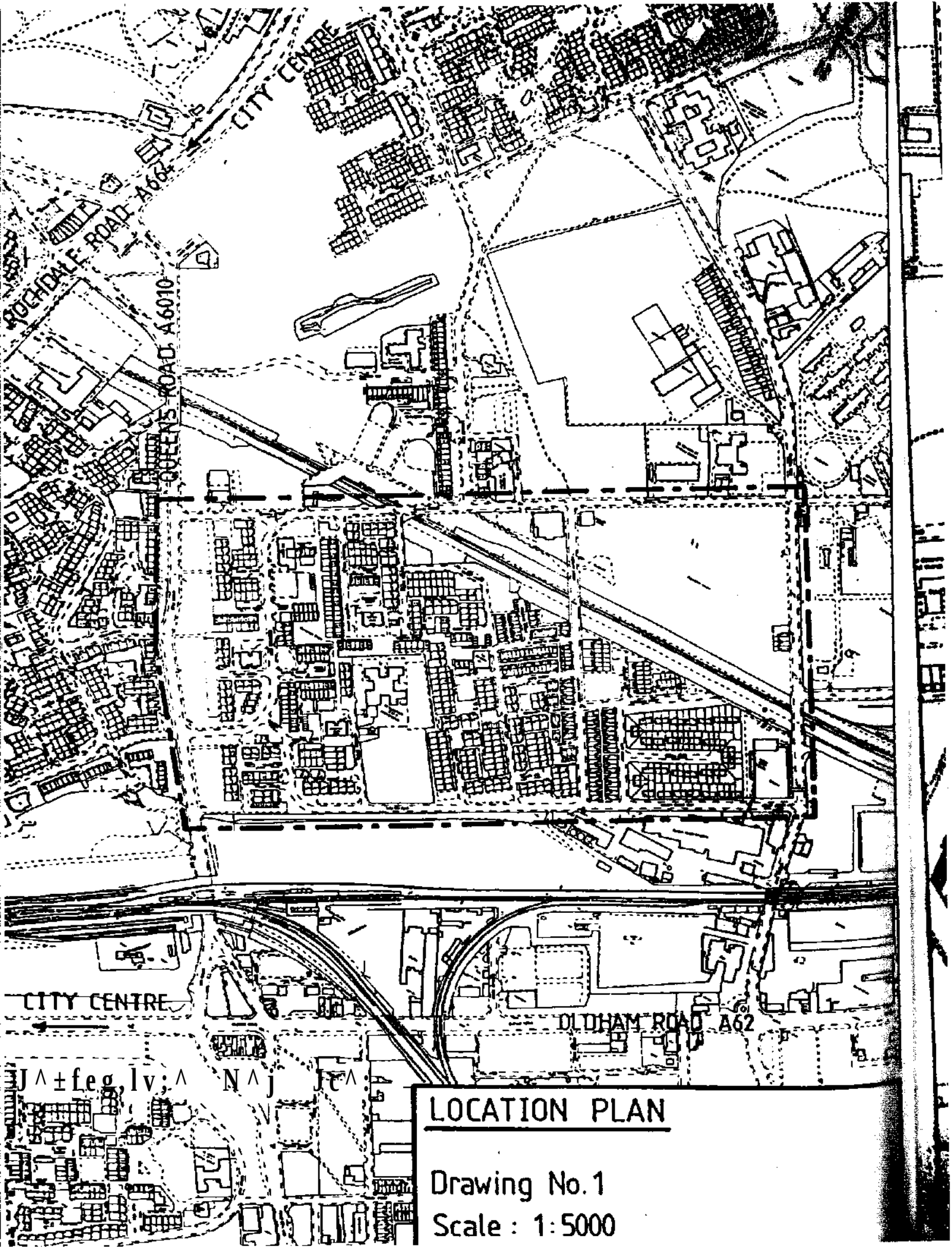
The new lighting column (No 13 on Plan No 4) was not essential in order to light the adopted footpath of Rutherglen Walk adjacent to the Clarendon Public House. However, without this lighting position the unadopted parking area also adjacent to the walk (see photograph 5) would have been inadequately illuminated and a situation would have remained which engendered fear. Provision needs to be made for such situations which are common in an inner City environment. However, the energy and maintenance costs associated with such additional strategic lighting positions should be recognised for the importance of the lighting and not simply be an unidentified element in excess of the costs of the old lighting.

8,5 Colour rendition

The improved colour rendering ability of the 150W SON deluxe lamps as compared with normal SON was evident on site. However, given their higher cost, lower lumen output and shorter life, their value in comparison with normal SON is difficult to quantify from this study. This is an aspect worthy of future investigation by the industry and / or the Institution of Lighting Engineers in order to establish a cost benefit relationship.

SCHEDULE OF NEW LIGHTING SHOWN ON PLAN NO. 4

COIN	Type	Lantern	Matrix No	Lamp
N l	5M Straight	Urbis Saturn	871222	70 Watt SON-T
N 2	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 3	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 4	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 5	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 6	8M Straight	Urbis ZX2	860463	150 Watt SONDL-T
N 7	8M Raise/L	Urbis ZX2	860463	150 Watt SONDL-T
N 8	8M Straight	Urbis ZX2	860463	150 Watt SONDL-T
N 9	8M Raise/L	Urbis ZX2	860463	150 Watt SONDL-T
N 10	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N i l	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 12	8M Raise/L	Urbis Saturn	860463	150 Watt SONDL-T
N 13	6M Straight	Urbis ZX12	851022	70 Watt SON-T
N 14	6M Straight	Urbis ZX12	851022	70 Watt SON-T
N 15	6M Straight	Urbis ZX 12	851022	70 Watt SON-T
N 16	6M Straight	Urbis ZX 12	851022	70 Watt SON-T
N 17	6M Straight	Urbis ZX 12	851022	70 Watt SON-T
N 18	6M Straight	Urbis ZX 12	851022	70 Watt SON-T
N 19	6M Straight	Urbis ZX 12	851022	70 Watt SON-T

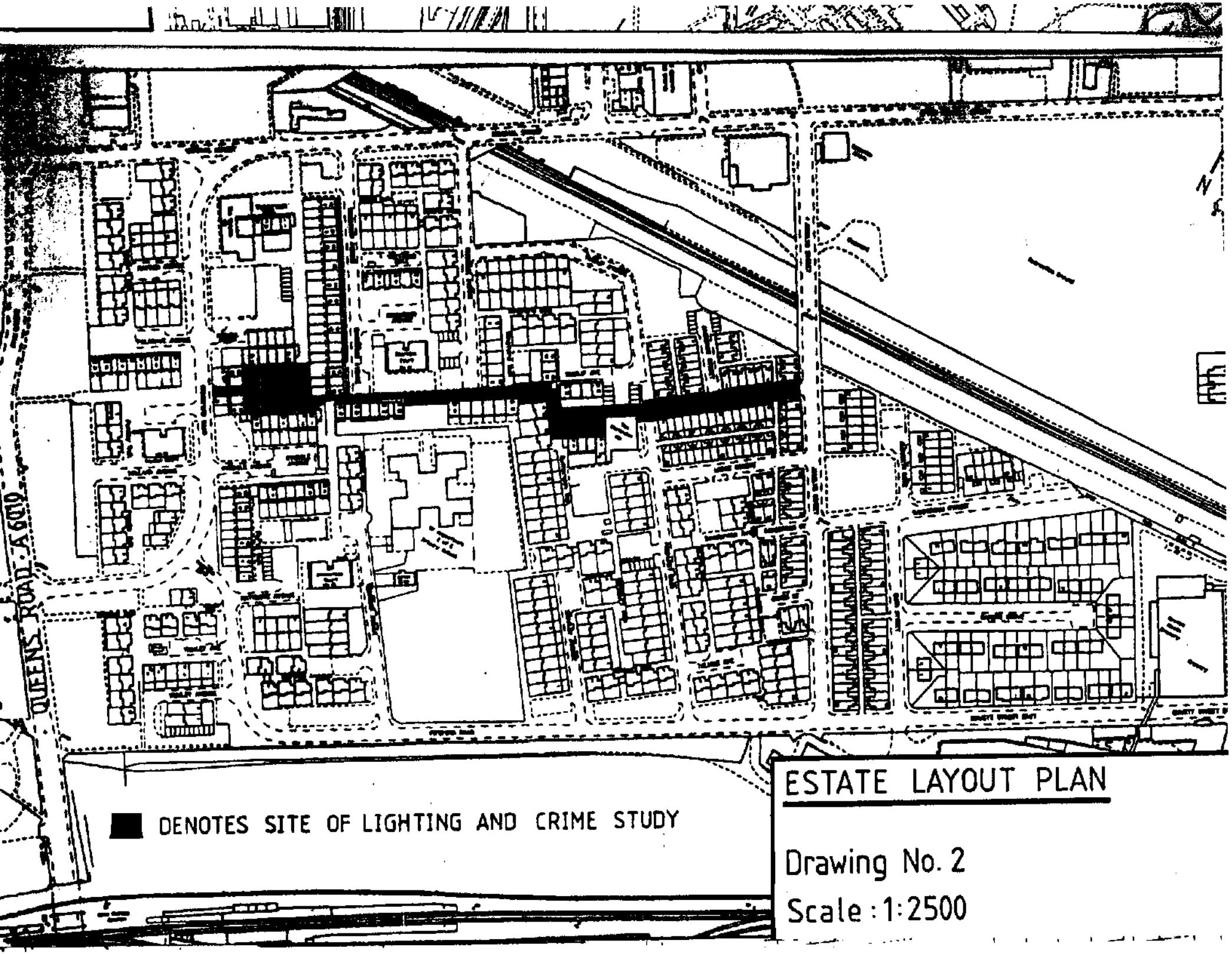


J^±feg,lv;^ N^j Jc^

LOCATION PLAN

Drawing No.1

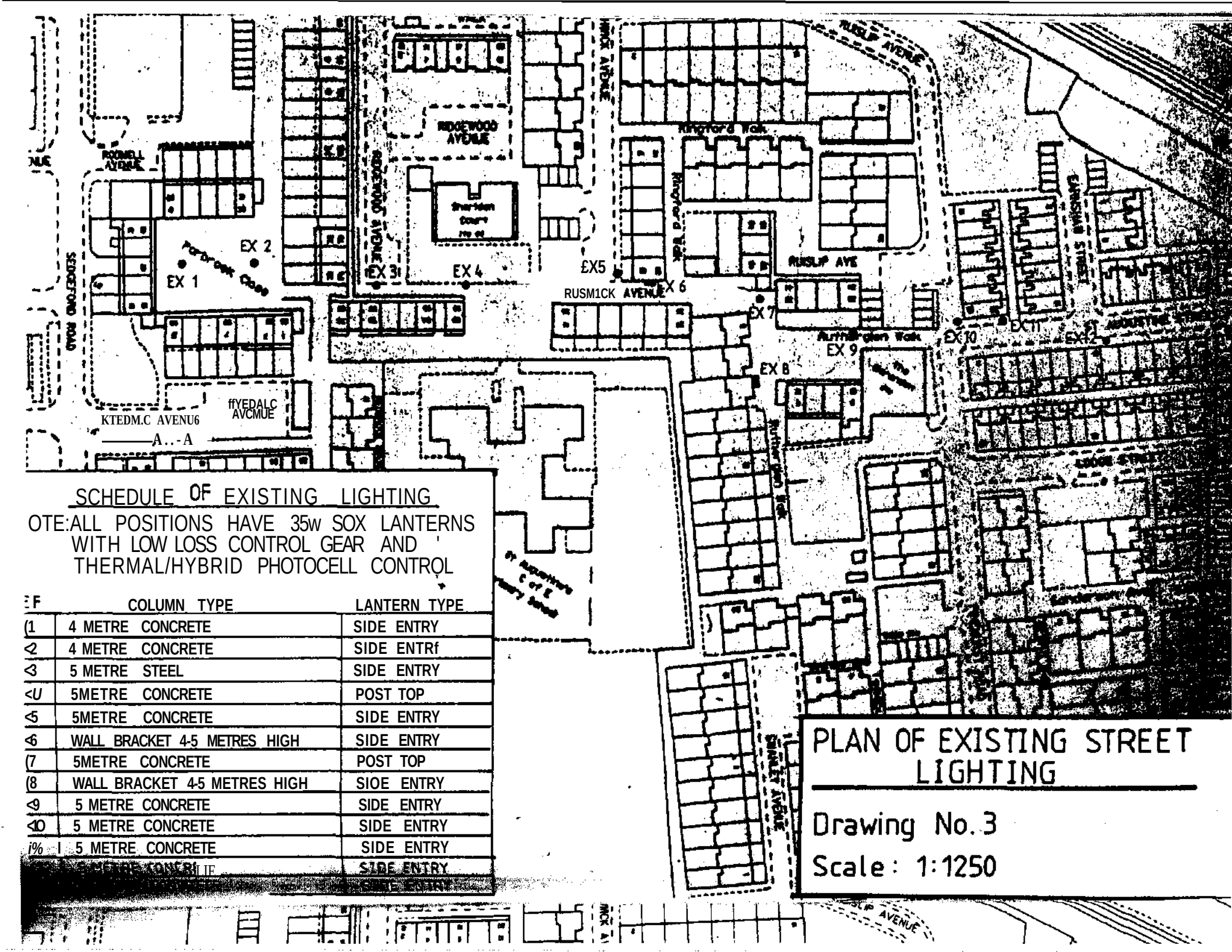
Scale : 1:5000



ESTATE LAYOUT PLAN

Drawing No. 2

Scale : 1:2500



SCHEDULE OF EXISTING LIGHTING

OTE:ALL POSITIONS HAVE 35w SOX LANTERNS WITH LOW LOSS CONTROL GEAR AND THERMAL/HYBRID PHOTOCELL CONTROL

:F	COLUMN TYPE	LANTERN TYPE
(1	4 METRE CONCRETE	SIDE ENTRY
<2	4 METRE CONCRETE	SIDE ENTRf
<3	5 METRE STEEL	SIDE ENTRY
<U	5METRE CONCRETE	POST TOP
<5	5METRE CONCRETE	SIDE ENTRY
<6	WALL BRACKET 4-5 METRES HIGH	SIDE ENTRY
(7	5METRE CONCRETE	POST TOP
(8	WALL BRACKET 4-5 METRES HIGH	SIOE ENTRY
<9	5 METRE CONCRETE	SIDE ENTRY
<10	5 METRE CONCRETE	SIDE ENTRY
i% I	5 METRE CONCRETE	SIDE ENTRY
	METRE CONCRETE	SIDE ENTRY

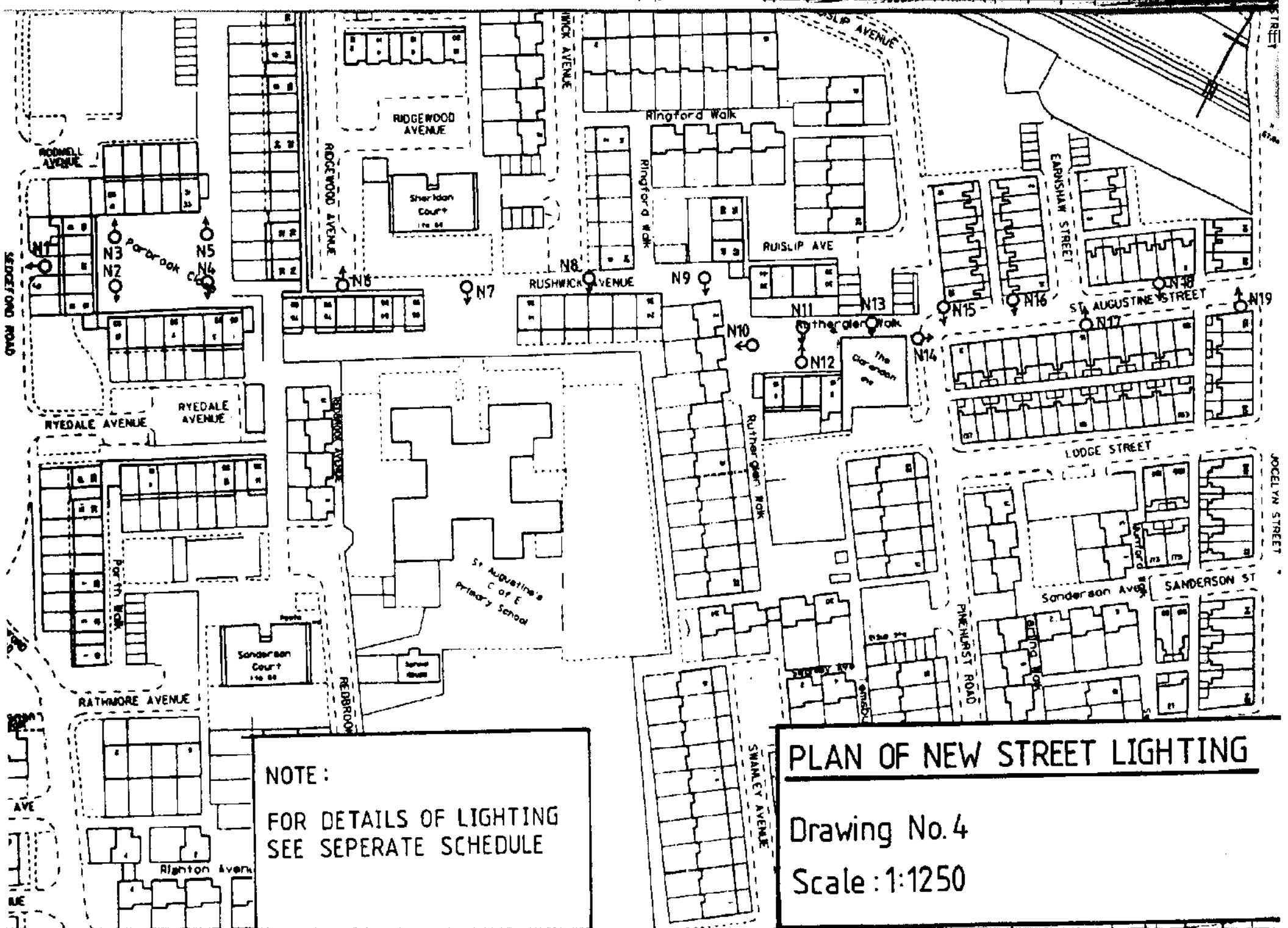
PLAN OF EXISTING STREET LIGHTING

Drawing No. 3

Scale : 1:1250

5 METRE CONCRETE	SIDE ENTRY
5 METRE CONCRETE	SIDE ENTRY

Scale : 1:1250



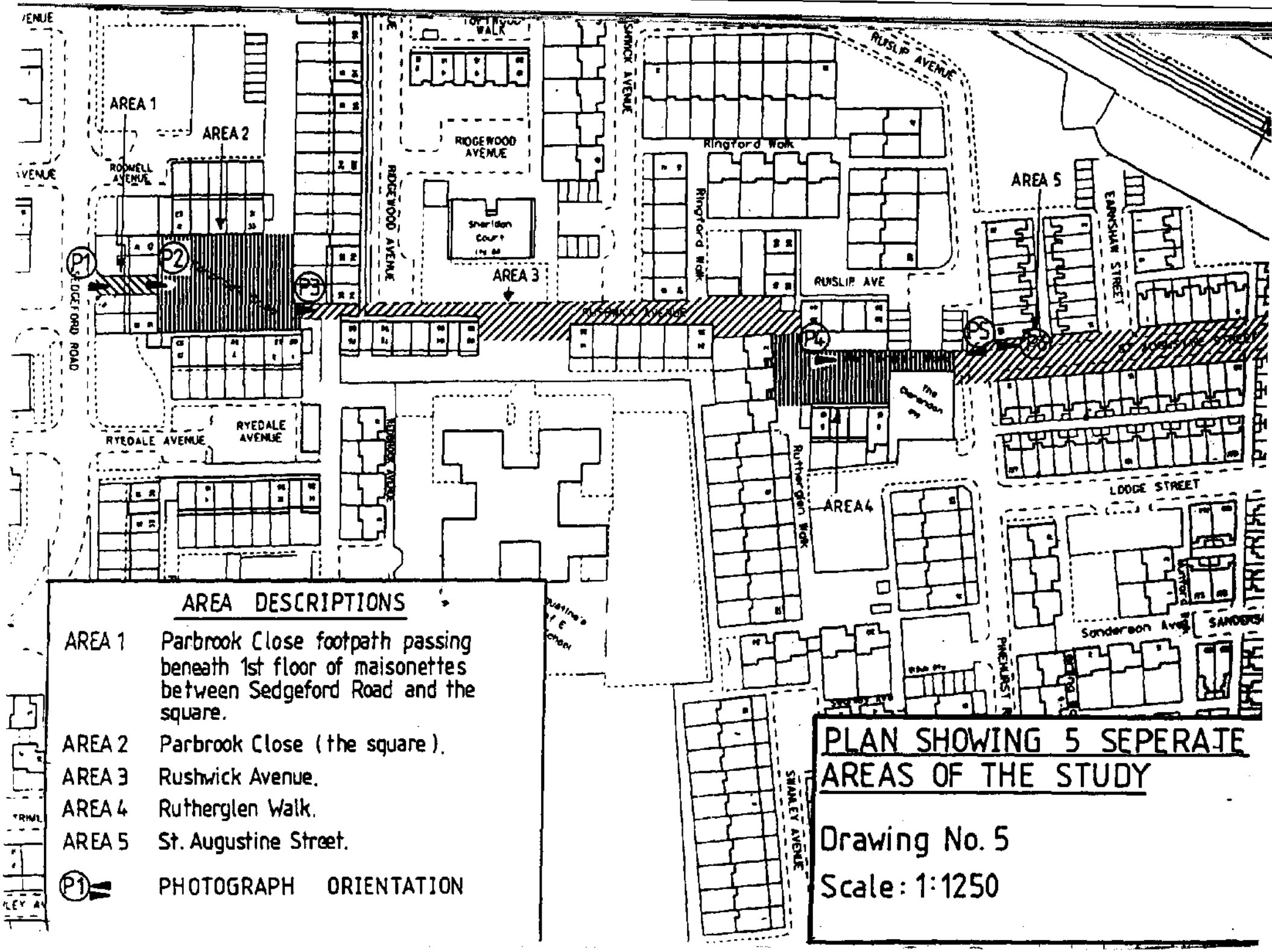
NOTE :

FOR DETAILS OF LIGHTING
SEE SEPERATE SCHEDULE

PLAN OF NEW STREET LIGHTING

Drawing No. 4

Scale : 1:1250



AREA DESCRIPTIONS

AREA 1	Parbrook Close footpath passing beneath 1st floor of maisonettes between Sedgeford Road and the square.
AREA 2	Parbrook Close (the square).
AREA 3	Rushwick Avenue.
AREA 4	Rutherglen Walk.
AREA 5	St. Augustine Street.
P1	PHOTOGRAPH ORIENTATION

PLAN SHOWING 5 SEPERATE AREAS OF THE STUDY

Drawing No. 5

Scale: 1:1250