Middlesex Polytechnic

LIGHTING AND CRIME PREVENTION:

THE EDMONTON PROJECT

Kate Painter

Specialist Technical Advisors: Roy Fleming and Peter Gunnell

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Kate Painter,
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Introduction

The project was a small, carefully controlled 'before' and 'after' study of the impact of lighting on crime and fear of crime. The approach adopted, differed from conventional large-scale crime prevention strategies. From the outset it adopted a multi-agency approach in order to get to grips with one clearly specified strategy. It was designed to carefully identify, monitor and evaluate the worth of lighting as a means of crime prevention. It was crime specific, area specific and strategy specific.

- The focus was a badly lit street and tunnel in the 'outer' city (Edmonton), which offered opportunities for crime to occur.
- The specific crimes chosen for analysis were:-
  - violence against the person (robbery, theft from the person, physical and sexual assault);
  - autocrime (theft and damage).
- Incidents of harassment were also included. Though less serious in nature, such events are very real problems in themselves, as well as compounding the effects of more serious crime and heighten people's sense of insecurity and vulnerability at night.

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Multi-Agency Approach

- The police identified suitable sites and site visits were undertaken by criminologists, lighting technicians and police.
- Industry (Thorn Lighting Ltd) funded the project and with the Local Authority undertook nightly maintenance inspections throughout the experimental period.
- Local M.P. liaised throughout.

Sample Size 360

207 street interviews conducted before lighting installed
153 street interviews conducted after lighting installed

1. Crime Reduction - 6 weeks before and after relighting

A total of 21 incidents was reduced to 3. The chances of being victimised in this one road fell from 1 in 10 to 1 in 40 after improved lighting.

	6 Weeks before Installation N=207	6 Weeks After Installation N=153
Threats	4	0
Autocrime	12	2
Robbery/Attack	5	1

2. Fear of Crime - 6 weeks before and after Relighting

Before - 65% feared for their personal safety in the street. Women's fear was much greater. 87% of women compared to 50% of men expressed fear of victimisation.

After - 62% of men and women felt safer. 82% of this group attributed increased personal security to improved lighting.

3. Frequency of Crime/Harassment in previous 12-month Period

Crime was a frequent occurrence within a 5 minute walk of the interview point.

41% of people had experienced some form of crime or harassment; physical attack (10%); autocrime (20%); harassment (20%). 9% had been victimised more than once.

20% reported members of their households had been similarly victimized.

30% of people had directly experienced interpersonal violence in the form of threats, assaults, harassment.

Women: 24% had a greater chance of being threatened and insulted than men (18%).

Women had an equal chance of physical assault (9%). This conflicts with police statistics and national crime surveys which say that men are more likely to be victims of violence.

4. Knowledge of Crime

A greater proportion of respondents personally knew someone within a five minute walk of the interview point who had been victimised.

- 33% knew someone who had been robbed/attacked
  20% knew someone who had been threatened
  32% knew someone who had had a vehicle damaged or stolen
  10% knew someone who had been sexually assaulted

5. Fear of Crime - Social and Psychological Impact

- 65% of people were afraid of victimisation (87% of women compared to 50% of men)

- 87% of women feared physical attack and this seems to be directly related to their fear of sexual attack (86%). For women, fear of crime may be reducible to fear of sexual violence.

- 61% of people consistently avoided areas within a 5 minute walk of interview point after dark. 24% avoided going out because they feared victimisation. 45% preferred to go out accompanied.

Differences between men and women's crime preventive behaviour are striking.

- 46% of women said they avoided going out after dark because they feared crime, compared to 90% of men, who never felt the need to take the same precaution.
- 73% of women prefer to go out accompanied (usually by a 'safe' male or a large dog). 94% of women, compared to 46% of men, avoided some or all areas within a five minute walk of interview point.

Physical Precautions

Twice as many women interviewed (29%) than men (11%) take some form of physical precaution to increase their feeling of personal security at night. Whilst more men carry knives, sticks and clubs, articles carried by women include knives, scissors, umbrellas, hair sprays, lengths of chain, keys, pens, bleach.

Other precautionary strategies adopted by women:

- always wearing flat shoes for quick escape
- never taking a handbag
- never wearing jewellery
- limiting the amount of money carried
- walking in road rather than on pavement in case of attack
- self-defence classes

However, 35% of men and women refused to answer the question.

6. Lighting and Crime Prevention

Police patrols and better lighting were regarded as the two measures which would do most to reduce crime and improve the safety of women. This localised pereception is also replicated in the West Kensington Estate Survey conducted in Hammersmith and Fulham (Painter, et al, 1988).

- 69% interviewed after installation noticed the improved lighting
- 82% of women noticed the changes in lighting compared to 62% of men

Of those who had noticed the improved lighting

- 99% thought the lighting was better
- 97% thought it "was" easier to recognize people
- 82% thought it "was" better maintained
- 65% thought the lighting cast less shadows
- 66% thought people being threatened had decreased
- 54% thought physical and sexual assaults had decreased
- 66% thought lighting had increased pedestrian traffic
- 85% thought fear of crime in the area had decreased

Improved lighting positively affected public perceptions of crime levels. Just as fear imprisons people in their homes and keeps people off the streets, increased feelings of public safety may well:

- encourage people to use the streets and reduce the likelihood of crime
- consolidate and regenerate the public sphere
- encourage informal, natural surveillance
- increase the possibility of human intervention should crime occur
- increase the possibility of victims/witnesses recognizing offenders

7. Conclusion

This project illustrates how improved lighting in one street reduced crime, reduced fear of crime and enhanced public safety within an urban environment.

CHAPTER 1:

1. INTRODUCTION

1.1 PROJECT AIMS & BACKGROUND

The major concern of this exploratory project was to examine the extent to which improved lighting reduced the incidence and fear of crime and harassment. The focus was upon a badly lit street which offered opportunities for crime to occur. The specific crimes chosen for analysis were autocrime and violence against the person. General incivilities, threats and verbal abuse were also included. Although less serious in nature, such events compound the effects of more serious crime and heighten people's sense of insecurity and vulnerability when walking alone at night.

The project originated as a response to four areas of concern in crime prevention:

(1) A growing interest in the possibilities of reducing crime through changes in environmental design.

(2) Increasing public concern and fear of violent crime.

(3) A recognition of the need to develop a multi-agency approach to crime prevention.

(4) A lack of research into the relationship between lighting and crime.

1.2 CRIME PREVENTION: MULTI-AGENCY AND MONITORED

Although *everyone* stresses the importance of a multi-agency approach to crime prevention, in practice this is difficult to achieve;

although everyone endorses the necessity of monitored research, such research is exceedingly rare. (Hope and Dowds, 1987).

1.2.1 MULTI-AGENCIES INACTION

The project was conceived and developed within a multi-agency framework. The police identified suitable sites for the project, analysed local crime reports and provided detailed divisional statistics for the target crimes. The local authority ensured the lithting was installed, maintained throughout the project and that no other public works or alterations were made to the environment during the study period. The entire research was funded by Thom Lighting Ltd., who also cooperated in the installation and monitoring of lighting levels. The design and implementation of the project was discussed at every stage with all parties and the success of the project is attributable to the enthusiastic cooperation of all the agencies and the dedication of the interview team.

1.2.2 A CONTROLLED SETTING

The project was stripped down to the bare essentials so that the effects of lighting upon crime and fear of crime could be carefully monitored. The project was

- strategy specific (lighting)
- area specific (clearly demarcated street)
- crime specific (autocrime and violent crime)

This report describes why and how this research was carried out to test a much neglected strategy of crime prevention. Chapter 2 deals with conventional approaches to crime prevention and the case for and against lighting as a preventive strategy. Chapter 3 outlines and explains the **methodology** adopted and Chapter 4 gives a detailed account and discussion of the results obtained. The final chapter summarises the findings and presents the conclusions.

CHAPTER 2

2. CRIME PREVENTION, LIGHTING & PUBLIC SAFETY

2.1 CONVENTIONAL APPROACHES TO CRIME PREVENTION

There is an increased awareness that the most immediate and practical solutions to localized problems of crime and harassment, lie in measures directed at highly specific forms of crime which involve changes in the design and layout of those environmental settings which offer opportunities and incentives for crimes to occur. The methods adopted to reduce crime in this way vary from project to project but have been variously dubbed "defensive", "environmental", "physical", and more recently "situational" prevention.

The 'situational' approach to crime prevention evolved throughout the late 1970's as exemplified in Home Office Circular 8/84. The approach is most successful where there is prior knowledge of the contexts or situations in which crime has occurred and is likely to recur. The particular situation is examined and the environment or design of the object in question is altered so that specific crimes can be controlled. This approach has resulted in introduction of protective screens in public offices and banks, modification of telephone boxes and electricity meters, installation of close circuit T.V. to limit shoplifting and the installation of locks and bolts to protect those most at risk from burglary.

The 'situational' approach is often contrasted with the 'social' approach to crime prevention as if in some way they are unrelated. The 'social' approach to crime prevention addresses wider issues such as the social causes of crime, the importance of local community involvement in crime prevention initiatives and fear of crime. Good street lighting encompasses both situational and social crime prevention. It can physically alter an environment, thereby reducing the incidence of those crimes which are linked to particular settings. A bright, uniformly lit environment is more attractive, encourages people to use the streets at night, enhances public safety and decreases fears which centre around the possibility of violent interpersonal crime.

2.2 NATIONAL & LOCAL CRIME SURVEYS AND OFFICIAL STATISTICS

Fear of crime has thus become an important policy issue in its own right. The British Crime Survey carried out by the Home Office Research & Planning Unit in 1983 and 1985 indicated that nationally fear of crime was becoming as much a problem as crime itself. These national surveys rightly pointed out that throughout the country crime was still a relatively rare occurrence and that the majority of peoples' fears were out of all **proportion** to risk. (Hough and Mayhew, 1983).

Crime, however is not equally distributed throughout the country. Localised crime surveys carried out in Merseyside, Islington, Broadwater Farm and Lansdowne Green, (Kinsey. 1985; Jones et al, 1986; SNU, 1987) have revealed that crime is concentrated in small geographical areas where its impact is **compounded** by general incivilities and harassment. Fear of crime appeared to be heightened at night with physically vulnerable groups such as women and the elderly living under a "self-imposed curfew". In these areas citizens' fears are a reflection of the actual risk of victimisation. Some may say city dwellers are overworried about crime but local crime surveys show they do have most to worry about.

Local crime surveys have drawn attention to the impact of fear upon individuals and communities. Fear of crime is primarily associated with individual anxiety about becoming a victim of violence from a stranger. It centres around concern for one's physical vulnerability and personal safety particularly whilst walking alone in the dark. In order to avoid victimisation individuals imprison themselves within their own home; streets and estates become deserted; communities begin or continue to fragment; those who can, move away; the public sphere is undermined.

Given the emphasis which has been put on inner city regeneration and the accumulated research into situational crime prevention and fear of crime, it is surprising that one of the most obvious 'situational' measures, street lighting, has not figured prominently in the debate. The apparent lack of central government interest in the relationship between lighting and crime stands in stark contrast to the concerns of ordinary people. Local surveys such as Hilldrop, Lansdowne Green and West Kensington estate surveys and borough wide surveys in Islington, Hammersmith & Fulham have shown that residents consider bright, well maintained lighting of streets and dwellings, to be one of the most important measures in reducing crime and increasing public safety. The public want better lighting, the local authorities want it, *the* police recommend it.

2.3 THE CASE FOR AND AGAINST LIGHTING AS A CRIME PREVENTION STRATEGY

The nub of the case against lighting as a means of crime prevention is that there is no unanimous evidence that it reduces crime. It is certainly true that in the United Kingdom there has been little research into the relationship between lighting and crime. Most research has been carried out in the U.S.A. and the results of the 103 projects are contradictory, inconclusive and many are methodologically unsound (Burrows & Fleming 1982). Nevertheless, what does emerge from virtually all the research is that increased lighting decreases fear.

Faced with the challenge of methodologically unsound research and contradictory results, it becomes increasingly important to conduct systematic research that seeks to refine, improve, monitor and evaluate lighting as a preventive strategy. Unfortunately, failed or inconclusive research tends to be suppressed and ignored. Yet there is much to be learned from unsuccessful projects if one is to successfully develop new solutions to old problems.

The starting point for the design of our project was to thoroughly examine the weaknesses of previous research in order that basic deficiencies could be remedied. Difficulties in undertaking research in the area should not be underestimated and therefore it may be helpful to review the main criticisms that have been made of the American research on lighting and crime prevention.

1. Large area studies

When lighting is improved over wide geographical areas it is virtually impossible to isolate the impact of lighting as a variable from others which affect crime levels and fear of crime.

2. Small area studies

in high crime areas the incidence of crime in one street or estate is low. Therefore, it is difficult to empirically verify on the basis of police statistics whether the introduction of improved lighting in restricted areas reduces the crime rate. So, we have a situation where large area studies make a causal relationship difficult to establish and small area studies are dismissed because of the small numbers of crime involved.

3. Daylight robbery

Many crimes such as burglary and robbery take place in the best form of light - daylight. Thus, good lighting will not significantly affect an individual's predisposition to offend. Moreover, the installation of better lighting may have the unintended consequence of encouraging the commission of certain types of crime at night.

Some pretty horrific crimes do take place in daylight. At the time of writing this report a young mother was brutally stabbed to death in broad daylight on a busy motorway. But it is important to differentiate between this random, unpredictable and, therefore, largely unpreventable crime which could occur day or night from the vast majority of crimes (Cornish & Clarke, 1986). Whilst good lighting will not deter every offender it may deter some. If we have learned anything from 150 years of criminological failure to deal with crime it is that certainty of detection is about the only deterrent that has any effect (Maguire 1982). If good lighting increases the risks that offenders may be recognized or increases the chances of someone coming to the aid of a victim who has been attacked then it deserves more attention as a preventive strategy than it has hitherto received.

4. Displacement

Better lighting simply displaces crime, therefore does not prevent it. However, as Cornish & Clarke point out:

> "Despite the frequency with which the displacement hypothesis is offered as a crucial objection to situational crime prevention approaches, little systematic evidence about the phenomenon exists. In consequence, judgements about its likely importance can at present be formed only on the basis of a rather unsatisfactory amalgam of disparate findings."

In short, displacement is an argument for doing nothing.

5. Short term solutions

Effects of improved lighting on crime diminish over time. This argument is fairly put, but, as has been argued, what is necessary is to rigorously determine short-term effects. Later long-term research will, of course, be of great value.

6. Types and Levels of Lighting

Previous research has failed to differentiate between different types and levels of lighting and their effects upon crime.

It is pertinent to note that virtually all the arguments levelled against lighting as a proven means of crime prevention can be levelled at every other preventive strategy, from increased police patrols through to target hardening, neighbourhood watch and publicity campaigns; the difference being that the latter strategies have been researched, funded and refined. In Britain, lighting as a crime preventive strategy has not. What is common to all crime prevention initiatives is that they are notoriously difficult to assess. Hence the importance of rigorous, preliminary *fieldwork* as to the selection of areas, types of crime for analysis and the construction of relevant indicators whereby particular strategies can be monitored and evaluated. The majority of research projects which have attempted to establish a relationship between lighting and crime have failed to meet these requirements for two reasons. Firstly, previous projects have operated within an imprecise definition of crime and secondly, there has been an overemphasis on quantitative measurement rather than on the qualitative effects of improved lighting.

The term "crime" is an all embracing category, including many different types of offences, i.e. burglary, robbery, assault, vandalism, rape etc. Even within these separate categories, the nature of offence can be very different in terms of seriousness, location and impact. Clearly it is nonsensical to expect there to be a relationship between lighting and all types of crime in all circumstances. No one measure can be expected to succeed in all communities, for all types of crime or for all types of residents. For example, it is true to say that the majority of burglaries do take place in daylight but equally the unlit house at night provides a clear indication to a would-be offender that the target is unoccupied. Cues and stimuli within the environment which may trigger the propensity to offend differ at night. And in the instance quoted above, good lighting may well act as a deterrent. Thus, it is important to be specific about the relationship between lighting and crime and delineate the types of crime, the location and the time at which lighting as a crime prevention measure will have most effect.

2.3.1 LIMITATIONS OF CRIME STATISTICS

In previous studies conducted in the United States there has been an over-emphasis on the statistics of crimes known to the police as the indicator for measuring the effects of improved lighting. Important as these statistics are, they do not provide an accurate measure of crime. Both national and local crime surveys have shown that not all offences are reported to the police and some crimes which are reported are not necessarily recorded by the police. Moreover these surveys indicate that crime is focussed geographically in urban areas and socially upon particular groups - thus locally focussed crime surveys give a more informed picture of the distribution of crime within a particular locality.

Further, the police collate their statistics to fit in with Home Office categories. As has been pointed out this means that quite dissimilar crimes in type and nature are crudely lumped together under one heading. Robbery is a case in point. This

one crime category includes offences such as armed robbery, street robbery, bag snatches and theft from the person.

A further drawback of national and divisional crime statistics is that they mask geographical concentrations of crime. For example, certain Metropolitan Police Divisions can chart fluctuations in crime on a 2—kilometre basis but not on a street or estate basis. Local victim surveys have shown crime varies enormously from one street and estate to another. In short, national and divisional crime statistics 'even out' crime across wide geographical areas. They tell us which crimes have occurred and roughly where they took place but at present, they can tell us little about prevention.

Police statistics of crime do not include the many forms of anti—social behaviour and harassment which compound the effects of more serious crime, and they do not, in any way, relate to fear of crime in the community which adversely affects the quality of urban living. (1) Yet all the indications are that improved lighting decreases fear of crime and has a significant effect on interpersonal crime. Consequently, the quantitative measurement of the qualitative effects of lighting formed an important part of our methodology. So whilst the findings have been compared with national and divisional police statistics the limitations of quantitative measurements of crime must be borne in mind.

Having outlined the case against lighting as a means of crime prevention and the difficulties in assessing changes in crime prevention using police statistics it is worthwhile reviewing the case for lighting as a crime preventive measure.

(1) It is now easier for the police to prosecute individuals who are abusive or estate in anti-social and disorderly **behaviour. Section** 4 of the 1986 Public Order Act means that a person can be guilty of an offence if s/he uses threatening, abusive or insulting words or behaviour with intent to cause that person to believe immediate violence will be used.

2.3.2 THE CASE FOR LIGHTING AS A CRIME PREVENTION STRATEGY

Firstly, it is argued, good lighting reduces crime and fear of crime by creating feelings of personal security which favourably affect local perceptions of the incidence of crime. Some studies indicate that in areas where lighting has been improved, residents perceive crime has lessened even though recorded crime rates have shown no reduction. By encouraging people to use the streets good lighting has an important part to play in improving the quality of and participation in urban life.

Secondly, it encourages people to use public places at night thereby increasing informal, natural surveillance and interaction within a locality thereby reducing the propensity to offend.

Thirdly, as an added bonus, good lighting aesthetically improves the physical environment and finally, it is a relatively low cost option.

The previous section reviewed two broad approaches to crime prevention in the U.K. and put the case for and against lighting as a crime preventive strategy. Against this background the project set out to rigorously test the intuitive appeal of lighting as a crime preventive measure. The next chapter explains how we went about it.

CHAPTER 3

3. METHODOLOGY

This chapter explains the approach and methods employed to select the area and target crimes for detailed analysis.

3.1 RESEARCH AIMS

The project was designed with the aim of studying the crime and fear reductive effects of street lighting. It sought to overcome some of the basic weaknesses of previous research in the area which had tended to take a 'global' and/or purely quantitative approach to the issue.

3.2 SMALL SCALE MULTI-AGENCY APPROACH

From the outset the project adopted a locally based multi-agency approach to crime prevention. It was designed to clearly identify, monitor and evaluate the worth of lighting as a means of crime prevention within a clearly defined area - a badly lit street and tunnel. It was a "stripped down" experiment which, as mentioned earlier, was crime specific, area specific and strategy specific. The advantages of such a small area based approach involving local agencies (M.P., police, industry, polytechnic and local authority) are that:

1. It enabled resources to be focussed on poorly lit sites most vulnerable to crime and fear of crime.

2. The selection of a clearly demarcated street facilitated the careful control, monitoring and evaluation of lighting as a means of reducing crime and fear of crime.

3. It allowed quantitative and qualitative methods to be employed.

4. It facilitated a total approach to the problem of crime prevention drawing the police, industry and local authority into closer cooperation.

5. The inter-agency approach fostered by a small scale project gave rise to systematic and objective procedures for the process of selecting target areas, crimes for analysis and types and levels of lighting, from the planning stage through to the implementation, monitoring and evaluation of the specific measure - lighting.

3.3 METHODOLOGY - RESEARCH DESIGN

Meetings were held between the police, Thorn Lighting, local authority and Middlesex Polytechnic. It was agreed that the local crime prevention officer would identify a number of sites which were badly lit. Site visits were undertaken by representatives from each agency, and a suitable area selected according to the following criteria.

3.3.1 GEOGRAPHICAL LOCATION

The site would be located in an outer-city urban setting where the design and layout of lighting within the environment rendered those using the area vulnerable to specific types of crime and forms of harassment. The site was to be clearly demarcated - i.e. a street or an alleyway. It also had to be an essential pedestrian through-route leading from a residential setting to commercial, transport and/or leisure facilities. The choice of a badly lit, well used area was essential, since it was envisaged that such a location would encompass relevant characteristics of social mix, changeability, mobility and transience, all of which lend themselves to opportunist offending.

The advantage of restricting the project to such a small geographical location for analysis (as opposed to an estate or neighbourhood) was that the relationship between lighting, crime and harassment and fear could be more efficiently managed, controlled and monitored.

Five sites were identified by the local police and visited at night. The one chosen fulfilled most of the criteria outlined above. Edmonton was chosen for quite pragmatic reasons. Thorn Lighting and Middlesex Polytechnic are in the locality and the local M.P. is chair of the Parliamentary Lighting Group and consequently had an especial interest in supporting the project. Edmonton is not regarded as an unusually high crime area and is typical of many 'outer' city boroughs.

3.3.2 TYPES OF CRIME

Given the research aims, the focus was upon the types of crime which occur on the street - property crimes (autocrime, vandalism) and interpersonal crimes such as street robbery, theft from the person, physical and sexual assaults. General harassment was included since this is believed to contribute to personal insecurity and dissatisfaction within a neighbourhood. At the design stage there was no way of using statistics recorded by the police to target either areas or crimes since crime records are not computerised on a street basis. Thus, the site was chosen on the basis of design and layout, not because it was thought to be a 'high' crime area.

3.3.3 TYPES AND LEVELS OF LIGHTING

Resource constraints in time and money also meant that the site chosen should be able to be lit with relative ease and economy. For example within our time scale it would not have been feasible to lay new cables, posts etc. The relighting scheme was designed to. meet BS5489 Part 3 which lists 3 categories of lighting level dependent upon crime risk. The highest category 3/1 was chosen, calling for an average illuminance of 10 lux and a minimum of 5 lux. the Code of Practice also states a preference for 'white' light sources for category 3/1. Therefore high pressure sodium lamps were used. The original low pressure sodium (orange) lighting was found to provide levels below the lowest category (3/3), which calls for an average value of 3 5 lux and a minimum of 1 lux.

3.4 RESEARCH METHODS

The project combined quantitative and qualitative methods.

A street survey was considered to be the most appropriate method of collecting data of the incidence of 'outside' crime, fears of crime and public perceptions of lighting.

3.4.1 PILOT SURVEY

Some questions included on the survey were taken from previously tested victim surveys. This allowed sane comparability on the incidence and fear of crime. Because this was the first survey specificially to examine the effects of lighting and crime, a small pilot survey was undertaken in the area to remedy any faults with additional questions and any deficiencies/ommissions in the questionnaire design. After the pilot survey, a question on physical precautions was added as it was evident that a number of people carried weapons to protect themselves from crime.

3.4.2 MAIN SURVEY

- Interviews were conducted immediately before and 6 weeks after the installation of lighting which took place mid-December. The project took place during winter months for obvious reasons.

- People were asked about their experiences of crime and harassment over the previous 12 month period and more specifically about incidents which had occurred 6 weeks prior to the installation. Incidents during the latter period were contrasted with the six week period after installation. Incidents were recorded over the twelve month period to provide some background information on the frequency of crime and harassment in the locality.

- The unit of analysis was the individual rather than the household, but individuals were asked about the experiences of other household members to provide as much information as possible on the frequency of crime.

- The questionnaires in the 'before' and 'after' conditions were designed with thought as to the time and context of their administration (at night, in the cold, in poor lighting). The majority of questions were closed with multiple choice answers, most (not all) were pre-coded. Maps were used to identify where crimes took place, area avoidance because of crime and any immediate displacement effects.

- Interviews took place after dark between 5.00 p.m. and 12.00 p.m. Some daytime interviews were also included in order that the experiences of people who seldom or never went out at night, could be included.

- The questionnaire was partly comparable with other victim surveys and addressed the following issues:

1. Peoples use of public space day/night.
2. Fear of crime and precautionary behaviour.
3. Experience and knowledge of crime within a five minute walk of the interview point.
4. Views of the quality of lighting
5. Views on crime prevention.

In the 'after' condition some questions were omitted and others added on the effects of new lighting upon crime levels, public safety and the environment. Pre-installation interviews were conducted over a 9 day period, 30 November - 9 December 1987. The lighting was installed by week beginning 14th December. Post monitoring interviews were conducted 6 weeks later over a 9 day period in January 1988. Over 80% of the interviews were conducted after dark.

Other quantitative measures were also built into the project in order to compare the before and after effects of lighting.

3.4.3 POLICE STATISTICS

- National and divisional police statistics for target crimes were examined in order to assess aggregate seasonal fluctuations.

- Analysis of crime sheets for the particular street over the previous 3 years from October to January was also undertaken by the police. It was hoped that both sets of statistics would provide an additional (albeit inaccurate) yardstick by which to evaluate whether local changes in crime and fear were due to seasonal fluctuations or the effects of improved lighting.

3.4.4 PEDESTRIAN TRAFFIC FLOW

Pedestrian traffic flow sheets were completed in both conditions to monitor people using the street 'before' and 'after' the lighting was installed. The intention was to provide an objective indicator as to whether improved lighting had any effect on public use of space. This data proved very time

consuming to analyse and because of resource constraints it is not included in the report.

3.5 QUALITATIVE DATA

3,5.1 INTERVIEWER OBSERVATION AND EXPERIENCE

Interviewers were issued with two forms:

(1) Interviewer fieldwork sheet

to record any crime and harassment they observed in and around the street and any comments made to them by pedestrians over and above those included in the questionnaire.

(2) Interviewer harassment forms

- to record any threats, harassment, violence directed towards them. They were asked to record details of the nature of such incidents and the impact it had on them and/or other passers-by.

Both forms provided additional information on levels and impact of harassment within a well defined locality. We were interested to know whether the female interviewers attracted more harassment than their male companions.

3.6 INTERVIEWERS

A team of five researchers (2 females, 3 males) were used. It was decided only to use females to interview pedestrians. The area was very dark and it was thought that people would be less threatened if approached at night by a female rather than a male. At the beginning we intended to have two females interviewing accompanied by one male who would complete the pedestrian traffic forms.

Because of the level of harassment we had to increase the number of males to two per evening.

3.6.1 FEMALE HARASSMENT

Verbal and sexual harassment on the street is a common occurrence for many women and contributes to women's high fear of crime. Because of these experiences many women never or seldom go out after dark. We asked our researchers to stay on the street until 11 p.m. - 12 p.m. each evening to monitor whether females did attract more harassment than males. We also asked the females to walk alone under the tunnel and 30 yards along the road at 40 minute intervals in order to see whether they experienced any general/sexual harassment whilst walking alone. They always kept in sight of other researchers and each researcher was equipped with a personal alarm. This feature of the experiment was dropped after the first night because of the level of harassment experienced by the female
Chap. 4. for further details.)

3,7 FIELDWORK SUPERVISION

Interviewers were asked to phone the project manager on the hour throughout each evening so that the interviewers' personal safety and problems with the questionnaire could be carefully monitored. Notes of all telephone conversations were kept by the project manager.

3.8 INTER-AGENCY COOPERATION AND ENVIRONMENTAL CONTROL

Inter-agency cooperation was vital if the project was to be successful. In order to isolate the influence of lighting on crime and fear from other variables a strictly controlled environment was essential. Thus, *the* police kept their level of patrolling constant, the local authority delayed building work which was due to begin during the experimental period. After installation of lighting, the borough engineers department checked the lighting each night during the **six** week period to monitor efficient maintenance of lights. Thorn Lighting also carried out their own checks on lighting levels throughout the period. We were fortunate with the weather which remained dry, though cold, during the time interviews were conducted.

3.9 CONCLUSION

In previous research the tendency to rely on 'objective' quantitative data has obscured the non-quantifiable effects of lighting on community safety. The design of this project has built in quantitative and qualitative methods in an attempt to fully assess the effects of lighting as a crime preventive measure. Yet the limitations of the research should be made explicit.

Resource constraints meant that displacement of crime to other areas/targets could not be adequately monitored. Consequently, the evidence for displacement remains tentative and anecdotal, and requires further investigation in future research. This weakness however is replicated throughout much crime prevention research.

A second weakness in the design, also attributable to limited resources is that we were unable to monitor whether the crime and fear reductive effects of lighting could be sustained over a longer period of time.

CHAPTER 4

4 RESULTS OF STREET SURVEY

4.1 DEMOGRAPHIC DESCRIPTION OF THE SAMPLE

The opening section describes the size, age, race and gender of those using the demarcated road; how often they used it and why. (All percentages have been rounded up or down to nearest whole number).

Table 1

Size of Sample

	No of Respondents Interviewed
Before lighting installed	207
After lighting installed	153
Total sample size	360

Table 2

Age of Respondents

N=360		
16 - 24	41%	(147)
25 - 44	40%	(144)
45 - 59	11%	(40)
60+	8%	(29)

Table 3

Race of Respondents

N = 360		
White	71%	**(256)**
Black/AfroCaribbean	22%	(79)
Indian/Pakistan	5%	(18)
Other non-white	2%	(7)

Table 4

Gender of Respondents

N 360		
Male	63%	(226)
Female	37%	(134)

Thus the sample using the route were predominantly white (71%), young to middle aged (81%) males (63%). It is almost routine procedure for crime surveys to break down their samples by race and age, gender and race, age, race and gender. The focussed approach and aims of the study as well as sample size meant that this was an inappropriate method of analysis. Splitting the sample by gender would have given such small numbers for analysis that any trends identified would have been unreliable.

However, analysis of results before and after installation of lighting is undertaken on the basis of gender. The numbers were large enough in each category to warrant identification and explanation of differences in behaviour, fear and experience of crime. Moreover, national and local crime surveys indicate that the most significant variable in explaning victimisation and fear of crime is whether an individual is male or female. Briefly, crime surveys reveal that men rather than women have a greater risk of being the victim of violent crime whereas women who are least likely to be victimised (Hough & Mayhew 1983 & 1985) are the most fearful group in the country (Maxfield 1984). As will be seen, these survey results contradict this global picture.

The gender breakdown in the 'before' and 'after' samples is as follows:-

Table 5

Gender of Respondents Before and After Installation of Lighting

Condition	Total No of Respondents	Men	Women
Before lighting installed	207	61% (127)	39% (80)
After lighting installed	153	65% (99)	35% (54)

In order to give some indication of the cohesion and stability of the community, all respondents were asked how long they had lived in the area (within a five minute walk), how regularly they used the route and why they used it. If it became evident that the majority of the *people* were using the route on an irregular basis it would have been difficult to test whether people had genuinely noticed the changes made to the lighting and any *effects* these changes had made upon crime and fear of crime within a locality.

94% of those interviewed lived within a 5 minute walk of the interview point and the majority had lived within the area for a considerable period of time.

Table 6

How long have you lived in this area (within a 5 minute walk)		
0 - 1 years	12%	(43)
2 - 5 years	22%	(79)
6 - 10 years	18%	(65)
11 - 20 years	27%	(97)
21+ years	16%	(58)
Not applicable	5%	(18)
Total	100%	360

The picture which emerges is one of a well established community. 83% of the people using the route had lived in the area between 2 and 21 years. 61% had lived in the area between 6 and 21 years. Thus the view that the overwhelming majority (70%) thought that crime in the area had worsened is made against a long history of local urban experience.

The majority (84%) of people also had used the route regularly. 70% used it between 5 and 7 evenings per week. Given that the route was badly lit, people were asked why they used it.

Table 7

Why do you use this particular route?		
It is the quickest way	79%	(284)
It is the only way	6%	(21)
It is the safest way	2%	(7)
Other	13%	(48)

The route was used because it provided the quickest way home. However, few (2%) of people thought it to be the safest way. For those living in and around the road the safest way meant taking a long detour along a well-lit main road.

4.2 FEAR OF CRIME - BEFORE AND AFTER INSTALLATION OF LIGHTING

TABLE 8

Do you ever feel unsafe when walking through here because of the possibility of crime against you?

Total No. of Respondents = 207

	Yes	No
Men (127)	50% (64)	50% (63)
Women (80)	87% (70)	13% (10)
Total	65% (134)	35% (73)

Before new lighting was installed 65% of respondents felt unsafe walking along the route. In line with other surveys it is evident that women's fear is much greater than mens. Just over 87% of women expressed concern for their personal safety in comparison with 50% men. Only 10 women out of the 80 surveyed said they were never afraid.

Fear of crime is generally associated with fear for one's personal safety, particularly safety from violent crime and harassment when outside, alone and in the dark. Consequently, respondents were asked about their relative fears of specific crimes day and night.

Table 9

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

Total No. of Respondents	207 YES	(127) MEN	(80) WOMEN
Being attacked/night	64% (133)	50% (63)	87% (70)
Being attacked/day	11% (22)	4% (5)	21% (17)
Being pestered/insulted night	31% (63)	17% (22)	51% (41)
Being pestered/insulted day	9% (18)	3% (4)	18% (14)
WOMEN ONLY			
Being sexually assaulted/night			86% **(69)**
Being sexually assaulted/day			41% (33)

50% of men and 87% of women were worried about being physically attacked. Women's high level of fear of violent crime (87%) is clearly associated with fear of sexual violence at night (86%). The complicating factor here is that 41% of women *continue* to be fearful of sexual victimisation in daylight. Consequently, it is not suggested that improved lighting will completely eradicate women's fear of sexual attack, since the root cause of such fear is fear of violent men rather than a simple fear of the dark. This occurs because women are as likely to be physically and sexually assaulted by a male known to them as by a stranger and as research has shown the former category of violence is more likely to take place in well lit and presumably 'safe' environments such as the home as it is in unlit streets at night. (Hanmer and Saunders, 1987, Edwards S, 1985, Kelly L, 1987).

Nevertheless, women's fear of criminal violence is related to their assessment of their physical vulnerability, and such insecurity is heightened at night whilst walking alone in poorly lit environments. Our findings indicate that improvements in lighting greatly increase men and women's feelings of personal security. (See Table 10).

FEAR OF CRIME - AFTER INSTALLATION OF IMPROVED LIGHTING

Six weeks after the installation of new lighting 153 people were interviewed and asked about their concerns and experiences of crime and harassment in that period.

Table 10

I During the past 6 weeks, whilst walking in this road, would you say that your own feelings of personal safety have increased, decreased or remained the same?

Total Respondents	(153)	(99) MEN	(54) WOMEN
Increased	62% (95)	61% (61)	63% (34)
Decreased	3% (5)	4% (4)	2% (1)
Remained the Same	31% (47)	29% (29)	33% (18)
Don't Know	4% (6)	5% (5)	2% (1)

62% of men and women reported that their feelings of personal safety had increased. Those people who reported feeling safer were then asked an open-ended question:

"Why do you feel safer in this road?

83% (79) of those who felt safer attributed this to the improved lighting.

"Lights have improved." (Male)

"Much brighter. Felt much safer since the white light has been on by the tunnel." (Female)

"Lights have improved, much brighter. I will now go out at night." (This woman said she was 'mugged' twice last year at night by the bridge. In November her sister had her chain snatched at night). (Female)

4.2.1 FEAR AND PRECAUTIONARY BEHAVIOUR - TEMPORAL AND SPATIAL *AVOIDANCE* STRATEGIES

A further indication of people's fear and/or experience of crime is the extent to which they alter their behaviour to avoid victimisation. Precautionary behaviour involves a number of strategies from 'social isolation' (never or seldom going out after dark), 'avoidance' of particular areas, and 'physical precautions' (carrying objects to protect oneself from attack). The following sections cover the extent to which men and women adopted such strategies.

4.2.2 TEMPORAL AVOIDANCE

Table 11.

As a precaution against crime, do you ever:

	(207) YES	(127) MEN	(80) WOMEN
Avoid going out after dark, although you would like to?	24% (49)	10% (12)	46% (37)
Go out after dark with someone other than by yourself?	45% (94)	28% (36)	73% (58)
Stay away from certain areas (within **a** five minute walk) after dark?	61% (127)	41% (52)	94% (75)
Do you take similar precautions during the day?	24% (49)	10% (12)	45% (36)

The differences between men and women's crime preventive behaviour is striking. 90% of men never avoid going out after dark, and when they do a minority rely on other male or female companions for protection. This indicates how much more physically secure and confident men are in their night time use of public space.

46% of women avoid going out at night, though they would like to. If they do venture out 73% (58) take a companion (often a 'safe' male-husband or boyfriend). Women clearly feel more vulnerable to interpersonal violence, and as a consequence radically constrain their social mobility.

4.2.3 SPATIAL AVOIDANCE

Table 12

It appears that if women do go out at night they traverse narrowly circumscribed routes. A staggering 94% of women and 41% of men avoided some or all areas within a 5 minute walk of the interview point. In total 61% of those interviewed undertook avoidance behaviour to reduce their risk of victimisation. (Table 11).

Avoided areas at night.

Total Respondents	(207) YES	(127) MEN	(80) WOMEN
Tower blocks	19% (39)	10% (13)	33% (26)
Salisbury Road	9% (19)	6% (67)	15% (12)
Bridge/tunnel (interview point)	22% (46)	13% (16)	38% (30)
Car park	57% (119)	47% (60)	74% (59)
Underpass to car park	63% (131)	51% (65)	83% (66)
Other than above	42% (87)	32% (40)	59% (47)

Whilst feelings of insecurity and vulnerability are heightened at night for men and women, it is significant that 45% (36) of women interviewed undertook similar crime avoidance behaviour during the day. Clearly, women in this area worry a great deal about being criminally victimized. Some may say they are over-worried. Yet such extensive avoidance behaviour should, perhaps, be taken as a barometer of the unrecorded instances of crime and general incivility and abuse which women experience in familiar and supposedly 'safe' environments rather than dismissed as an irrational fear.

Concern about criminal victimisation clearly undermines the quality of life for men and women, but its impact on women's lifestyles is profound.

PRECAUTIONS

'Taking precautions' has taken on an additional significance for women in this area. Though the numbers are small, our survey indicates that twice as many women as men take some form of physical precaution before going out at night.

Table 13.

Do you ever take precautions, such as carrying an object or personal alarm to protect yourself against the possibility of crime whilst walking through this area?

Total Respondents: 207

	Yes	No	No Response
Men (127)	11% (14)	49% (62)	40% (51)
Women (80)	29% (23)	39% (31)	32% (26)

Table 14.

Objects Carried

	Women
Bottle	0
Scissors	3
Knife	1
Stick/Club	0
Iron Bar	0
Personal Alarm	4
Other	15
Total	23

Historically, many young men in urban areas have routinely carried some form of object as much as part of a 'masculinity cult' as a form of protection. The extent to which women have adopted such behaviour is unknown. Though more research is needed on this point, these figures indicate that in this urban area almost one third of women interviewed are taking physical precautions to protect themselves from predatory crime at night. These range from carrying a knife and scissors through to a variety of 'streetwise' behaviour - always wearing flat shoes, always taking a large dog (Doberman Pinscher and Alsatians were

commonly cited), walking with keys, umbrellas, pens, sprays, bleach, long-handled combs at the ready. These figures do not include a number of women who said 'No' to the question, but at other points in the interview revealed that they had taken up self-defence; they never carried a handbag, or wore jewellery, and if possible walked in the road rather than on the pavement to avoid attack.

In all probability the figures quoted above underestimate physical precautions taken by men and women. The non-response rate on this question was high. Interviewers noted that people were extremely reticent to answer the question because they thought they may be liable to prosecution. This survey was undertaken just after the police launched a "knives amnesty" and people were very aware of their liability to prosecution. In all there are 10 references recorded on the interviewer incident forms (Appendix 2) and some of the comments are worth noting, since they support the notion of underestimated incidence.

> "At first refused to answer. Then said Yes (to carrying a weapon) but wouldn't tell me what it was. He's a solicitor!" (Male -age 25-45)
>
> "Karate man. 'If I carried a weapon and used it I could get prosecuted.' Said sarcastically. We need to be disassociated from the police because people are not likely to tell us about weapons they might be carrying." (Comment refers to male 16-25)
>
> "Over the past week I have noticed quite a lot of people (mostly women) carrying umbrellas in their hands. Yet it has been a dry week."
>
> "Refused to answer because she thinks we're with the police. Said she used to carry a knife but doesn't any more because fears prosecution." (female 25-45)
>
> Nurse on her way to work. Hadn't time to stop for interview. Said she sometimes carries a knife on advice of her boyfriend. Has been followed home and had an attempted sexual assault on her two months ago. Is very scared to walk through here because of number of muggings." (16-25)

"Police can't do anything so you have to protect yourself. Refused to answer directly." (Female 60 +)

"Not prepared to answer question on weapons. We might tell the police." (Male 25-45)

"Old man. Used to carry a knife. Is considering carrying an object as protection, possibly an alarm." (Male 60 +)

"Umbrella is not classed as an offensive weapon. Used to carry a weapon but now afraid of prosecution." (Female 16-25).

The impression given is one of quite ordinary men and women of all ages feeling the need to increase their personal security by carrying or considering carrying an object as protection. In addition 5 women said that they would like to carry a weapon or object but did not because they were afraid of it being used against them if attacked.

The findings strongly suggest a trend toward individualistic or privatised crime preventive behaviour. It seems that if people's public safety cannot be guaranteed by the police and local authority, citizens take personal responsibility for their own protection by carrying some form of weapon.

4.3 EXPERIENCE OF CRIME

Over the previous twelve month period 41% of respondents had directly experienced some form of harassment or crime in the form of physical attack or autocrime within a 5 minute walk of the interview point. In addition 29% reported that a member of their household had been similarly victimized.

Table 15

In the past 12 months have you			
Total No. of Respondents	(207) **YES**	(127) MEN	(80) WOMEN
Been threatened/insulted	20% (42)	18%(23)	24%(19)
Had your car/motorbike/ stolen/damaged	11% (23)	17%(21)	2% (2)
Been physically attacked	10% (19)	9%(12)	9% (7)
NO	59%(123)	56%(71)	65%(52)
Other members of your household been the victim of any of the above crimes/harrassment.	29% (60)	24%(31)	36%(29)

Few female respondents were victims of autocrime and, as we did not ask the question, there is no way of knowing whether this reflects a low rate of car ownership amongst the women interviewed. However they had a greater chance of being threatened and insulted (24% women compared to 18% men) and an equal chance of physical attack (9%). This localized finding is similar to the one recorded on the Lansdowne Green Estate (SNU,1987) but out of step with national crime surveys which state that young men are more likely to be the victims of violence than women. (Hough & Mayhew, 1983 & 1985). In total 30% of respondents had directly experienced interpersonal violence in the form of physical attack or harassment .

4.3.1 MULTIPLE VICTIMISATION

Multiple victimisation refers to situations where individuals experience more than one 'specific' victimisation from one type of crime (i.e. autocrime or physical attack) or 'general' victimisation (i.e. a combination of property and interpersonal crime). It also encompasses those individuals who have directly experienced crime and have also reported that members of their household have experienced crime.

Table 16

	No. of Respondents	No. of Incidents
Autocrime	23	32
Physical attacks	19	26
Total	42	58

18 of the 42 respondents who reported they had been the victim of autocrime and/or physical attack stated that members of their households had been similarly victimised. In 7 out of 18 cases household members had experienced multiple victimisation. We have not counted such incidents because this was not a household survey. However some of the incidents were of a serious nature and affect fear of crime in the area. One young man reported his father had been stabbed and a middle aged man reported that his wife had been attacked and held at knife point. Both incidents occurred at the interview point.

A much greater proportion of respondents personally knew someone in the area who had been a victim of crime over the previous 12 month period. One third of those interviewed knew someone who had been robbed or physically attacked in the street and 10% knew someone who had been sexually assaulted.

Table 17

Do you personally know anyone living in this area (within a 5 minute walk) who during the last 12 months has been	YES	NO
Robbed/physically attacked in the street	33%(68)	67%(139)
Threatened/pestered/insulted	20%(42)	80%(165)
Had their car/motorbike damaged	18x(37)	82%(170)
Had their car/motorbike stolen	14%(20)	86%(178)
Been sexually assaulted	10%(21)	90%(186)

The high total of incidents means that in all probability the same incident is known and recounted by a larger number of people.

4.3.2 TIMING OF INCIDENTS

As the focus of the study was on crime and harassment which occurs in the street it is predictable that the majority of incidents experienced and known about occurred at night. The figure for incidents experienced at night is 86% - i.e. 73 out 84 incidents.

4.3.3 COUNTING AND DISCOUNTING CRIME

Just as not all crimes are reported to, or recorded by the police, not all crimes will be reported to, or recorded by researchers. The high non-response rate to the question on carrying weapons is a case in point. However other incidents which had a great impact on fear in the community were discounted by our survey because either they fell outside our study area (but within a 5 minute walk) or they fell outside the 12 month period. These included 2 rapes and one multiple stabbing. Obviously, the experience and knowledge of such incidents influences individual and community feelings of insecurity for a longer period than 12 months. Equally, some of the incidents involving harassment and threats were difficult to count. For example respondents *who* reported such experiences said "it happens daily", "so many times I can't remember", "several times", "always being pestered". As a result for instances of harassment we have erred on the side of caution and counted the number of respondents who had experienced (42) rather than the number of incidents.

In addition we do not have an informed picture of the impact of crime on social isolation. Because of the aims and focus project the majority of interviews were carried out at night. Consequently, the experience and fear of crime of those *who*

never go out at night would not be adequately represented here. As one young woman interviewed during the day put it:-

> "I never go out after dark around here. I pick my daughter up from school at 4.00p.m. We go home. I double lock and chain the door and thats it until the next morning!"

In short, we felt that the street survey method was appropriate in fulfilling the objectives of the survey but like other methods it probably underestimated the amount of crime and the extent and impact of fear within the locality.

4.4 INCIDENCE OF CRIME BEFORE AND AFTER INSTALLATION OF NEW LIGHTING

The pattern, incidence and fear of crime and harassment over the 12 month period provides a context against which the impact of lighting can be evaluated.

Before installation of new lighting respondents were asked whether any of the incidents they experienced had occurred within the 6 week period prior to the interview. More specifically they were asked for the exact location so that only those incidents which occurred along the study route could be included. Subsequently these were compared with the incidence of crime along the route in the 6 week period after the installation of new lighting. To avoid any possibility of double counting, the 'before' and 'after' figures refer to respondents only (excluding other household members). Where respondents indicated they had been threatened and attacked these incidents were counted as attacks only.

Table 18

6 week period before lighting installed		6 week period after lighting installed	
Total No. of Respondents = 207		Total No. of Respondents = 153	
Threats	4		0
Autocrime	12		2
Physical attack	5		1
Total	21		3

A total of 21 incidents of crime were reduced to 3 after the installation of improved lighting. Once the difference in sample size is adjusted for in the 'after' condition the number of incidents increases slightly to 4.

It is possible to interpret figures in a number of ways. One can represent these figures as an 80% decrease in crime and harassment. However, percentage calculations on such small figures can be misleading. Another way of representing the figures is that the chances of victimisation after installation of the lighting have fallen from 1 in 10 to 1 in 40. Alternatively, 'impossibilists' may dismiss the figures as too small to be of significance. This issue will be addressed **subsequently.**

As with physical attacks, the incidence of autocrime along this route shows a definite pattern. Police analysis of crime reports for the study route show a regular occurrence with little seasonal fluctuation.

Table 19

Autocrime - Salisbury/Bridge Road, Edmonton. Police Statistics

1985	Nov - Dec	4	
1986	Jan	3	
1986	Nov - Dec	7	
1987	Jan	5	
			Survey Figures
1987	Nov - Dec	4	12
1988	Jan	1	2

In relation to both physical attacks and autocrime, our survey revealed a much higher number of incidents for the Nov - Dec 1987 period. Comparison between victim surveys and official statistics is fraught with difficulties but the reason for including police figures is that no matter how inaccurate they do provide us with the only empirical evidence for seasonal fluctuations against which our data can be placed.

Table 20

Autocrime - Details of Survey Figures

Before and After Lighting

Before (Nov - Dec 87)		After (Jan 88)	
Total Incidents	(12)	Total Incidents	(2)
Car Stolen	4	Car Stolen	1
Motorbike Stolen	4		
	2	Car Damage	1
Motorbike Damage	2		
Pushbike Stolen	1		

Table 21

Physical Attacks - Details of Survey Figures
Before and After Re-Lighting

Before (Nov - Dec 87)		After (Jan 88)	
Total Incidents	(5)	Total Incidents	(1)
Robbery	2		
Sexual Assault	1		
Physical Attack	2	Physical Attack	(1)

A visual representation of the incidence of crime before and after installation of lighting is provided overleaf. All the incidents took place at night.

The sexual assault and physical attacks were against women. The two robberies were against young men between 16 -25. All occurred under the bridge i.e. at the interview point.

On paper the number of incidents appears to be small. Nevertheless, it is likely that the majority of people would regard 5 physical attacks in a 6 week period in their road as a high incidence rather than as a 'small' number. Police analysis of crime reports for the previous 3 years reveals a patterning of incidents in time and place. All of the incidents took place along the study route. All took place at night; all involved women.

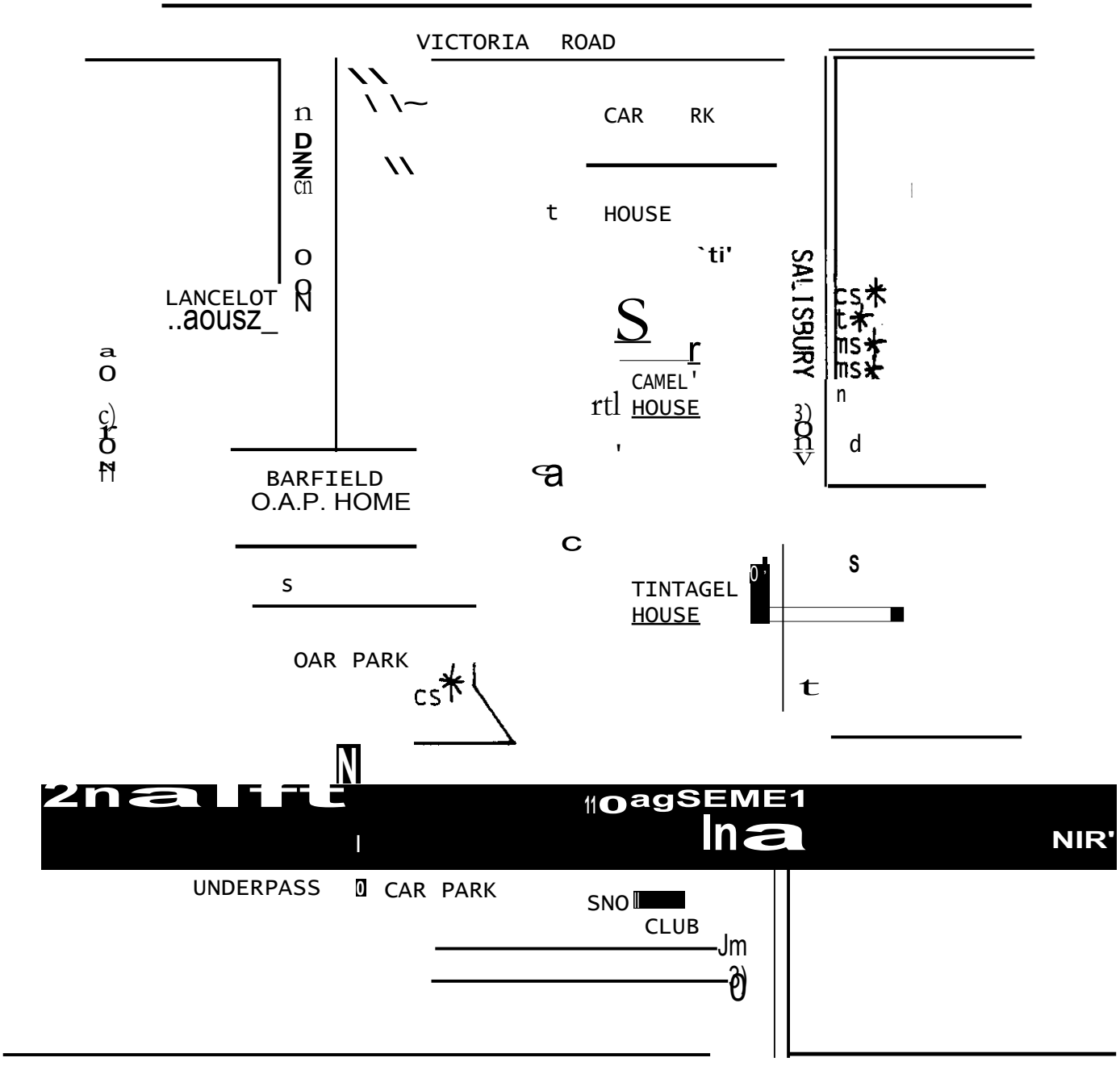
THE EDMONTON PROJECT: MAP 1 BEFORE INSTALLATION

Victimisation map (pre-installation) of Lighting in Bridge Road and Salisbury Road.

Respondents only

Physical attack and Auto-crime.

6 week period 19th October to 9th December 1987



Coding

a=attack cs=car stolen
i=insult ms=motorbike stolen
t=threat mrl=motorbike damaged
cd=car damage os=pushbike stolen

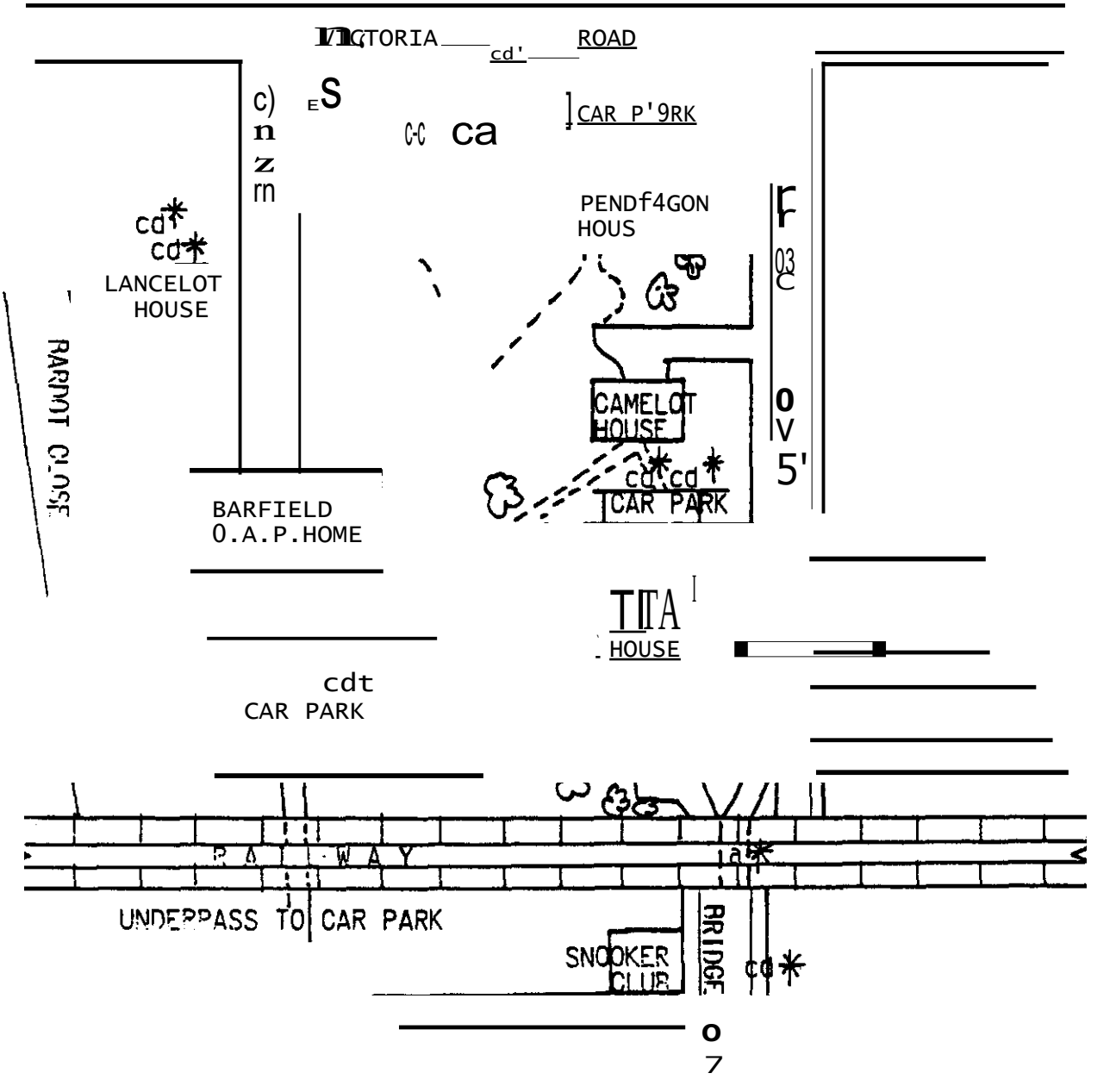
Totals

(2) involved robber de t sexual attack
2 physical attack. 1

(2) threats 13 incidents 4 in Salisbury Rd
(3) auto crime 13 incidents 12 Salisbury R

cs4.cd2.ms4.md1.ps1.

Victimisation map (Post monitoring)
Post installation of lighting in Bridge Road and Salisbury Road
Period 9th December1987 - 23rd January 1988



Cortina
a--attack
cdtcar damage
t= threat

All incidents-night time

Totals
a:1 in Bridge Road
cd:7 1 in Bridge Road
CS:2 1 in Bridge Road
t:1

Table 22

Street Crime - Police Figures - Edmonton 1985 - 1987

Nov - Dec 1985	2 females (aged 25-45)	Theft from person
Nov - Dec 1986	3 females (aged 50-78)	2 Theft from person 1 Assault & Robbery
Nov - Dec 1987	1 female (aged 45)	Theft from person

The problem of under reporting and under recording has already been discussed. This table is not an accurate picture of crime. It is probable that women in this age range for this type of offence are more likely to report incidents than younger men (or women for that matter). The question of accurate reporting is not the issue since our survey and police statistics have undoubtedly under counted the incidents in this period. For example, when post-installation interviews were undertaken in January, two people (1 man, 1 woman), who had not been interviewed **previously**, said they had been physically assaulted under the bridge in November. We did not count these incidents because the objective of post-installation interviews was to monitor crime after the installation of lighting.

What the blurred statistical picture indicates is that the physical attacks which occured within our study period Nov - Dec 1987 were not 'random seasonal fluctuations' but patterned events - i.e. similar in nature, occurring regularly at a particular point, at night and were realistically the cause of widespread fear in the community. The attacks against women were extremely severe in their nature and impact. Details of 2 **incidents are included** in **order** to

underscore the importance of preventive strategies for such offences.

Incident 1

Female aged 16 - 25. Walking her dog (Doberman) and waiting for her husband who is looking for a 'safe' place to park the car. She carries a knife and also has a large dog for protection. Being raped at night is a "big fear". She has been attacked under our bridge in the last 6 weeks and a further 6 times over the past year (only 1 of these outside our area) and once the year before. On two occasions she was injured and threatened with sexual assault. The incidents occurred, day and night. This woman is now moving out of London because of the muggings. Before we got to the lighting questions she stressed the lighting by our bridge is very bad.

Incident 2

This woman (25-45) was attacked under our bridge. She was mugged, was threatened and punched in the face; had a black eye, bruises and a split lip. She is now very nervous and worries about it happening again. Doesn't usually go out without her husband. Is too scared to carry a weapon in case it is used against her.

4.5 STATISTICAL TRENDS - AUTOCRIME & VIOLENCE

Analysis of crime statistics for autocrime, violence against the person and street robbery for the Metropolitan Police District Jan 1987 - Dec 1987 shows an increase over the year with little seasonal fluctuation. The Edmonton police division figures are in line with these trends.

Table 23

Metropolitan Police Statistics Jan 1987 - March 1988
Quarterly Breakdown

	Violence Against Person	Autocrime (theft of and from motor vehicles)
Jan - March 1987	4,623	51,342
April - June 1987	5,078	54,701
July - Sept 1987	6,514	51,438
Oct - Dec 1987	6,411	53,194
Jan - March 1988	6,174	49,463

Table 24

Edmonton Police Division Jan 1987 - March 1988
Quarterly Breakdown

	Violence Against Person	Autocrime
Jan- March 1987	44	932
April - June 1987	72	986
July- Sept 1987	81	714
Oct - Dec 1987	72	787
Jan- March 1988	78	881

Autocrime is down slightly across the whole of the Metropolitan Police district and the Edmonton Division during the quarter January - March 1988. The trend within Edmonton autocrime shows a slight upward trend for the two quarters of our study (Oct 1987 - March 1988). Over the year violence against the person is up by one third across the Metropolitan Police district. Within Edmonton it has nearly doubled between Jan 1987 - March 1988.

In Chapter 2 it was emphasized that global statistical trends mask the focusing of crime within geographical locations. In addition they lump together quite disparate crimes under one heading, e.g. robbery, burglary, autocrime. However, trends within the Metropolitan Police District and the Edmonton Division provide further indication that violent crime and autocrime are not subject

to marked seasonal variation. These crimes show an upward yearly trend throughout the Metropolitan Police District in general and Edmonton in particular whilst in our study area they were markedly reduced. We judge this to be as a direct result of improved lighting.

4.6 THE SCOPE OF LIGHTING IN CRIME REDUCTION

The strength of our evidence does not lie in large numbers, but in a detailed local focus with careful monitoring of events. The rigorous preliminary fieldwork and inter-agency cooperation which went into the choice of site; the focus on night time crime and strict control over events within the study area revealed a localized pattern of events. In line with others, (Heal & Laycock 1986) it is our firm conviction that only by such detailed crime analysis can localized patterns be identified and reliable preventive action taken. The failure to adopt this approach may account for why many crime prevention initiatives have proved to be disappointing.

The message is clear. Poor lighting in well used public places increases opportunities for certain types of criminal behaviour. They key factor as to whether lighting is the appropriate preventive strategy for any area will be the extent to which particular crimes are linked to particular settings and the extent to which lighting can change the physical environment so that it becomes less criminogenic. As Poynter has put it:

> "if the same kind of crime **happened** regularly at the same place and at the same time of day, everyday, it would be easy to deal with. However, even if crimes are not exactly repeated, sets of very similar cases can be regarded as potentially preventable if they are likely to recur in similar circumstances."

4.7 HARASSMENT

This section covers observational data on the incidence and nature of harassment

The difficulties in accurately counting the incidence of threats, insults and general harassment has already been mentioned. It was clearly a common experience for women who went out alone at night.

with such incivility and abuse is an important aspect of enhancing public safety. It is generally accepted that whilst less serious in nature incivilities and disorder compound the effects of more serious crime and increase fear of crime in the (Maxfield 1984). Sexual harassment is a problem, particularly for women and it plays a large part in contributing to an intimidating, threatening and violent atmosphere which in all probability is the cause of women; increased fear of crime. We hoped to provide some indication of the extent of harassment firstly by asking people directly about their experiences and secondly by instructing the male and female interviewers to observe and record all incidents of harassment and abuse directed at them **and at others**.

4.7.1 **INTERVIEWER HARASSMENT**

Previous crime surveys in **Merseyside and** Islington **have** noted that women are living under a self-imposed curfew. (R Kinsey, 1985; T Jones et al, 1988). Women in urban areas are increasingly reluctant to venture out after dark in order to avoid victimisation.

We asked our two female interviewers to stay on the street until 12.00 a.m. to see whether women really do receive more harassment or abuse than males out at this time. We also asked the female interviewers to leave the interview point at 40 minute intervals and walk alone under *the* bridge and twenty yards along the road always keeping in sight of the others. (For further details see Chapter 2).

The strategy was abandoned on the first night. The female interviewer was followed or approached by someone on each of the 3 occasions she walked alone between 5.00 p.m. and 8.00 p.m. Because of this experience and others which are recounted below, we decided to ensure that there were always 2 males present each evening.

Apart from this there seemed no difference in the amount of general abuse directed at the male or female interviewers. Some of the incidents directed at them all consisted of minor, though unpleasant, verbal abuse but 5 of the incidents in the first week were more threatening.

11.15 p.m.

"4 youths approached me. One said nastily. "Whats this f - -g all about!" I replied "Crime survey for Middlesex Poly". One youth had his hand behind his back where I could see a bulge. They're carrying some form of weapons. Do I feel scared and cold. Must have two males in future."

(Recorded by male researcher)

8.25 p.m.

"Three youths approached me and asked what we were doing. One boasts of a large "rap sheet" and takes out a knife. They were friendly but I was sacred."

(Recorded by male interviewer)

11.23 p.m.

"4 youths walked from bridge to Salisbury Road. They insulted us and pestered us with jeers." (language not printable).

7.30 p.m.

"Youth who knew I was an interviewer came up behind me, placed his hand on my shoulder and commented "watch out you don't get mugged." Made me jump - being touched; extremely scary."

(Recorded by female interviewer)

"A group of 4 youths keep entering the area and loitering around. One muttered "They'll get mugged" which was directed at us. Throughout the evening there have been at least two other groups of youths loitering around. One warned that we would become one of our own statistics. Very threatening."

(Recorded by two female interviewers).

There were approximately 20 incidents recorded in the 10 day period along with frequent warnings from passers-by that the males should stand nearer the females to ensure they were not attacked. The interviewers were also warned to watch their backs as someone had been firing at pedestrians and cars with an air rifle from one of the tower blocks.

4.7.2 <u>GENERAL HARASSMENT</u>

There were 28 incidents recorded in the 9 day period. Again, these varied in seriousness from drunks shouting, youths glue-sniffing and being offensive to pedestrians through to vandalism of cars and the phone box and "suspicious occurrences". There were also two fires in one of the tower blocks to which fire

engines were called. The fire officer informed the interviewers that he believes there is an arsonist living in the flats since there have been 3 fires in 2 weeks. The following descriptions give some idea of the generally insecure atmosphere within which inhabitants live.

7.30 p.m.

"3 youths creating a disturbance. Vandalizing a shopping trolley - swinging large poles above their heads. People walking past look scared. We become alert. Female interviewers very worried. From 8.20 onwards they went and hung around the underpass to the car park."

6.25 p.m.

"2 boys throwing stones at parked cars. Then at one car in particular. They created a lot of damage to the cars. Made (male interviewer) very angry."

7.23 p.m.

"Woman has lived here 7 months in the tower blocks. Had her door kicked in by the police because of fire at 4.30 a.m. on Monday morning. She said she's always being pestered whilst walking through here."

7.26 p.m.

"4 kids attempting to break the glass in the phone box - creating a lot of noise. 2 women passing by recommend that we should be standing nearer the females."

8.45 p.m.

"Approximately 3 males sitting in a car at top of path (Salisbury Road). As 2 females approached, they switched on their headlights and flashed them. As females pass they keep flashing their lights (obscene comments shouted). At 8.44 p.m. another car approached above car and tooted its horn as it passed. The first car tooted back - this went on for 10 minutes. 8.56 p.m. a car alarm goes off along Salisbury Road."

11.10 p.m.

"Two men came out of car park. Behaving suspiciously. Saw men walked-fast along track next to railway. They've done something!!"

Simply counting incidents gives no sense of the insecure climate within which pedestrians and residents exist. The interpretation that can be put on individual incidents is of course a subjective perception. What threatens one individual will be shrugged off by another. It is possible, though unlikely, that the tolerance level of our interviewers was lower than that of people for whom fires, being fired at by air rifles, vandalism and noise are common daily experiences. However, after the installation of new lighting, interviewers commented that the area was much quieter though more people were walking through. They recorded 2 instances of vandalism to shopping trolleys and commented that the youths pushed them from the well lit area to a darker area before creating the disturbance.

4.7.3 DOGS

Dogs are frequently used by individuals to protect themselves from crime, but this has a 'knock on' effect on community life. Nuisance, noise and mess from dogs were a constant cause of threat and annoyance in the locality. During the interview period of 10 days 2 people received hospital treatment after being attacked by large dogs - one was a two year old child and the other a male jogger. The mother of the two year old child said this was a common occurrence within the area and people felt unable to let children play on the grass because of attacks and dog mess.

4.8 LIGHTING, CRIME PREVENTION AND COMMUNITY SAFETY

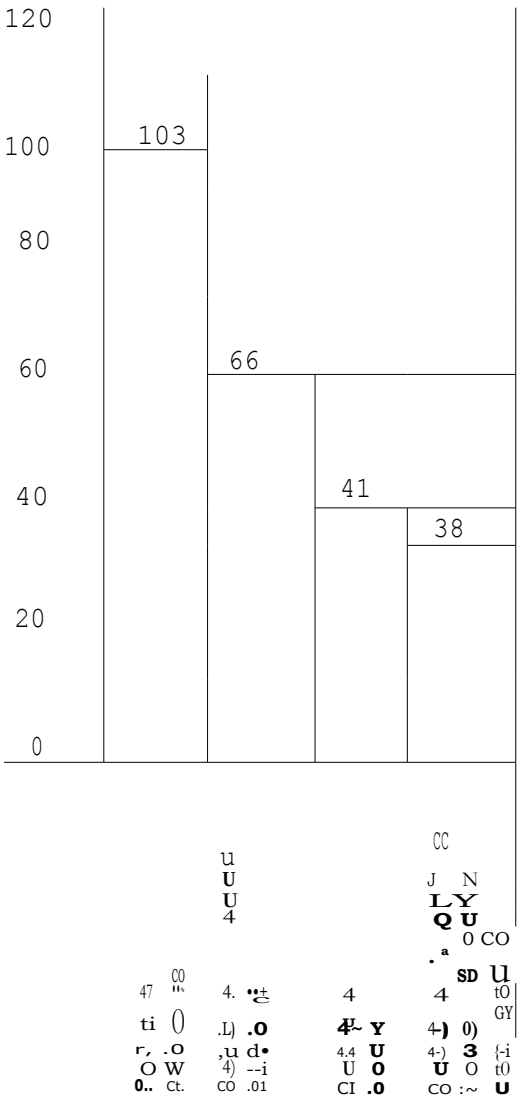
4.8.1 CRIME PREVENTION MEASURES, PUBLIC SAFETY AND CRIME AGAINST WOMEN

Prior to the installation of lighting, respondents were shown a list of measures which are traditionally thought to reduce crime. They were asked to choose and prioritise three in order of importance. The categories were:

More **police patrols**
Better street **lighting**
More leisure facilities for young people
Harsher **sentences**
More neighbourhood watch **schemes**
Better lighting around tower blocks/car parks
Better locks on doors and windows

The results were:

No. of respondents



In line with other surveys our results indicate that police patrols emerge as the clear favourite in public opinion as to what will do most to reduce crime. 50% of men (63) and women (40) put this as their first choice. 32% of respondents put street lighting as their second choice. 36% of women (29) showed a slight preference over men (29% 37) for this option. 20% (41) of respondents put locks and bolts as their 3rd choice and almost an equal number (18% 38) put better lighting around tower blocks and car parks as their third choice. A similar picture emerges when respondents were asked what crime preventive measure would do most to increase women's safety in the area.

Table 25

Rape, sexual assault and harassment such as kerb craving are particular problems faced by women. Which 2 of the following measures do you think would do most for the safety of women in this area?

More neighbourhood watch schemes	8% (16)
Better street lighting	26% (53)
More police patrols	35% (73)
Self defence courses for women	21% (43)
Women staying indoors	7% (14)
Other	4% (8)

for community crime prevention strategies. Police patrols (35%) and lighting (26%) are seen as measures which will do most to increase women personal security and safety. Thus the responsibility for developing a climate of public safety is seen to lie with the local authority

and the police. Self defence courses for women emerges as the third choice. This taken together with the information on the number of women taking physical precautions to protect themselves at night may indicate a trend towards privatised crime prevention measures.

There is a widely held and fallacious view propagated by sections of the media, police and judiciary that in some sense women are responsible for, and contribute to, their own victimisation if they are out alone at night. Consequently, we included the option of "women staying indoors" in our list of preventive measures to examine whether the public shared this view. It came bottom of the list. Only 7% (14) of respondents considered it to be relevant and this was counterbalanced by the 5 respondents in the "other" category who stated that "men staying indoors" would do most to increase the safety of women. In a free society men and women have the right to go out at night, and improvements in the fabric and design of public places should reflect this right by reducing opportunities for crime to occur.

The public perceive that lighting is an important crime prevention strategy. Once installed efficient maintenance is essential. Prior to the installation of new lighting people were asked how efficient the council were at providing certain essential services.

4.8.2 COUNCIL SERVICES

Table 26

Here is a list of some of the services the council provides. How efficient do you think they are in this area at:-

	efficient	inefficient	don't know
rubbish collection	55% (114)	37% (76)	8% (19)
keeping streets clean	40% (82)	56% (116)	4% (9)
maintenance of street lighting	21% (44)	75% (154)	4% (9)
council house repairs	15% (31)	70% (144)	15% (32)

75% of people thought the maintenance of street lighting was inefficient. In addition 81% (167) thought it was too dull, 44% thought it was unevenly spaced.

4.8.3 PUBLIC PERCEPTIONS OF LIGHTING UPON CRIME, HARASSMENT AND THE ENVIRONMENT

Of those interviewed (153) after the installation of new lighting 69% (105) noticed the change. However, there was a clear gender difference in level of awareness. 82% of women noticed the change compared to 63% of men. This tends to suggest that women are more alert to changes in the environment because they continually monitor the surroundings for safe and unsafe places to walk. This provides further evidence of the extent of precautionary behaviour women adopt to avoid the possibility of victimisation.

Those who noticed the changes made to lighting were asked to elaborate on the changes they had observed. On all questions posed, women were much more positive in their appraisal of lighting than men. Only those who had noticed the changes (105) were asked to comment.

Table 27

Total No. of respondents	105
	YES
Lighting brighter	**99%** (104)
Lighting better maintained	82% (86)
Lighting improved	**96%** (101)
Lighting more attractive	58% (61)
Lighting makes it easier to recognise people	97% (102)
Lighting casts less shadows	65% (68)
Lighting improved look of area	47% (49)

The overwhelming majority of those who noticed the changes thought the lighting in the 6 week period had improved, that it was brighter, better maintained and made it easier to recognise people. There is clearly room for improvement aesthetically. Whilst 58% thought the lighting more attractive than before, only 47% thought it bad improved the look of the area. There were a number of comments about the need to cut down trees and shrubs near the route. People felt safer on the road but they were still worried about the possibility that assailants could hide in surrounding vegetation.

The importance of uniform lighting is as crucial as brighter lighting. If surrounding trees or buildings cast shadows around the well lit area or lights are unevenly spaced or erratically maintained the impact of lighting on public safety will be diminished. Those responsible for the installation and siting of lighting need to be aware of other environmental design changes which may need to accompany installation of lighting.

Table 28

Do you think that the changes made to lighting in this road have had any of the following effects over the past 6 weeks?

	Increase	Decrease	Same	Don't Know
The number of people walking through this road at night has increased, decreased or remained the same	66%(70)	0%(0)	19%(20)	15%(16)
People being threatened/ pestered in and around this road at night.	2%(2)	64%(67)	24%(25)	10%(11)
Physical assaults in and around this road at night	1%(1)	55%(58)	29%(31)	15%(16)
Sexual assaults in and around this road at night	0%(0)	53%(56)	33%(35)	14(15)
Vandalism in and around this road at night	11%(12)	39%(41)	41%(43)	9%(10)
Noise levels in and around this road at night	22%(23)	10%(11)	**63%(66)**	5%(6)
Gangs of youths **hanging around**	12%(13)	9%(10)	71%(75)	8%(8)

66% thought lighting had increased pedestrian traffic and that the number of people threatened (64%), attacked (55%), and sexually assaulted had decreased (53%).

Public perceptions of crime levels have tangible social and psychological effects. Lea & Young (1984) chart the effects of fear of crime as a series of interrelated events which cause

> "those who can to move away from what are seen as crime prone areas; an increase in social segregation because people retreat into their homes away from the community; and a decrease in the quality of life because people keep off *the* street. Fear of crime undermines the public sphere and increases privatisation."

Conversely, if the public perceive crime levels to be lower, community safety and security may well be enhanced. As W.I. Thomas put it, "if people believe something to be real it will be real in its consequences."

The most significant and positive effect of lighting was a reduction in fear. When asked whether people's fear of crime happening to them in the road at night had increased, decreased or remained the same, 85% (89) thought that fear of crime had decreased. In a factual report it is difficult to convey how much improved lighting is appreciated. The comments speak for themselves.

> "He said that even his grandmother used this route now the lights had improved."

> "Throughout the interview she stressed the lights were very important. Much brighter. When it is a dull night the orange lights are useless.., need more white lights."

> "More women seem to be walking through. Previously she used to run through the tunnel. Nov feels much safer. You can even see the area from the flats so hopefully people will see if someone is attacked."

"She thought the improved lighting was wonderful. Even when looking out from the flats you can see everything down here. More lights needed by other tunnel."

"Before the lights were improved she felt "bloody scared" walking through the tunnel."

"Stressed how much safer she felt "Almost like daylight". She works at night and when she comes home her husband can now see her walking through the tunnel. All her family feel safe in this area now."

4.8.4 PUBLIC PREFERENCE FOR TYPES OF LIGHTING

In the pre-monitoring period a number of respondents complained that the orange lights along the **road gave out** a **very** poor light. Consequently in the post-monitoring period we included the following question. It was asked of 153 respondents.

Table 29

Would you say you had any preference for the orange or white type of street lighting?	
prefer orange	6% (10)
prefer white	82% (125)
no preference	12% (18)

The overwhelming majority (82%) preferred white lights (high pressure sodium).

CHAPTERS

5. MAIN FINDINGS AND CONCLUSIONS

5.1 CRIME REDUCTION BEFORE AND AFTER RE-LIGHTING

Essentially the project was **a** 'before and after' study of the impact of lighting on crime. People were asked specially about their experiences of crime and harassment in one road, six weeks before and six weeks after the lighting had been installed. A total of 21 incidents of assault, auto-crime and threats were reduced to 3. (Once the difference in sample size before and after is adjusted the number of incidents increases to 4). Thus, the changes of being victimized along this one road fell from 1 in 10 to 1 in 40 because of better street lighting.

5.2 FEAR OF CRIME BEFORE AND AFTER RE-LIGHTING

Before brighter lighting was installed 65% of respondents feared for their personal safety whilst walking along the dimly lit street and under the railway bridge. Women's fear was much greater. 87% of women compared to 50% of men expressed concern for their physical safety. Women's fear of physical attack (87%) appears to be related to their fear of sexual violence (86%). The ever-present threat of sexual assault and harassment creates an intimidating and hostile atmosphere within which it is difficult for women to feel safe. Only 10 out of 80 women said they were not afraid when walking alone along the street at night. Risk and fear of sexual violence creates a very different urban reality for women than for men.

Six weeks after the introduction of brighter, uniformly spaced lighting, feelings of public safety were enhanced. 62% of men and women said their feelings of personal safety had increased and 82% of this group attributed the change to improved lighting. Again there was a marked difference in men and womens' levels of awareness. 82% of women noticed the lighting improvements compared to 63% of men. This provides a further indication that women are constantly alert to the possibility of attack and continually monitor their surroundings for safe and unsafe places to walk. Throughout the survey women were more likely to comment on poor lighting and were more positive and aware of the changes which had been made. 85% of men and women who noticed the changes made to the lighting thought that fear of crime whilst walking along the road had decreased.

Lighting is not a cure-all for crime. The success of lighting in reducing crime and fear in this locality occurred because of the way specific offences were linked to the environmental setting. Improvements to the lighting in this study dramatically altered the physical environment rendering it less criminogenic. As people's direct experience of crime diminished, so did their fear.

5.3 INCIDENCE OF CRIME AND HARASSMENT IN TWELVE MONTH PERIOD BEFORE THE INSTALLATION OF IMPROVED LIGHTING

Within a five minute walk of the interview point, crime was a frequent occurrence. In the previous twelve month period 41% of respondents had directly experienced some form of harassment, auto-crime or physical attack. In addition, 29% reported that a member of their household had been similarly victimised. 30% of respondents had directly experienced interpersonal violence in the form of assault, threats or verbal abuse. 9% had been victimised more than once. Few females were the victims of auto-crime, but women (24%) had a greater chance of being threatened, pestered and insulted than men (18%) and an equal chance of physical attack (9%). These local findings conflict with national crime *surveys*

and offences recorded by the police which indicate that men are more likely to be victims of violence.

5.4 KNOWLEDGE OF CRIME

A much greater proportion of respondents personally knew someone in the area (within a five minute walk) who had been a victim of crime. 33% knew someone who had been robbed or attacked in the street; 20% knew someone who had been threatened; 32% knew someone who had experienced theft or damage to their vehicles; 10% knew someone who had been sexually assaulted. The high total of incidents personally known to respondents illustrates the importance of tackling small numbers of crimes on a local basis. Bad news spreads quickly and extensively, heightening fear of crime within a locality.

5.5 THE PSYCHOLOGICAL AND SOCIAL IMPACT OF CRIME AND FEAR OF CRIME

Risks and fear of crime are major contributors to inner and outer city decay. Combined, they segregate communities and isolate individuals, imprisoning them within their homes. An indication of the extent of fear in a community is the extent to which individuals alter their behaviour to avoid victimisation.

5.5.1 AVOIDANCE BEHAVIOUR

61% of respondents consistently avoided areas within a five minute walk of the interview point after dark. 24% avoided going out because they feared victimisation and 45% only ventured out if accompanied by someone else. The difference between men and women's crime preventive behaviour is striking. 46% of women avoid going out at night and when they do go out 73% said they take a companion (often a "safe" male or a large dog). Though 50% of men admitted to being afraid of victimisation, 87% of women expressed their concern, and as a consequence of fear 94% of women avoided some or all areas

within a five minute walk of the interview point. Whereas the majority of women severely curtail their movements at night, 90% of men never felt the need to constrain their geographical mobility in the same way. This indicates how much more confident and physically secure men are in their use of public space at night. Women realistically assess they are more physically vulnerable to attack and the pervasive fear of sexual violence results on occasions in a self-imposed curfew after dark for nearly half the women interviewed.

5.5.2 PHYSICAL PRECAUTIONS AND WOMEN'S SAFETY

Fear of criminal victimisation undermines the quality of life for men and women, but its impact on women's lifestyle is profound. Twice as many women interviewed (29%) as men (11%) take some form of physical precaution to increase their feeling of personal security at night. Articles carried include knives, scissors, keys, umbrellas, sprays, bleach, pens, and long-handled combs. Other precautionary strategies included wearing flat shoes, taking self-defence classes, never wearing jewellery or carrying a handbag, limiting the amount of money carried and walking in the road rather than on the pavement to avoid attack. People recognised they could be liable for prosecution if found in possession of an offensive weapon. The fact that 35% of those interviewed refused to answer the question may indicate that figures quoted above under-estimated the number of people taking similar precautions.

The message is simple. Risks and fears of interpersonal violence are heightened in the dark. This is true of men and women. Badly designed and poorly lit areas such as the one we exam[i]ned offer opportunities for crime to occur and public fears represent a realistic assessment of risks. Lack of investment in public services, such as lighting, encourages individualistic and privatised crime preventive behaviour.

> Some may regard it as a sad commentary on a "free" society that women have to take such elaborate precautions before they go out at night. If central goverment and local authorities do not take responsibility for creating a safe environment, then individuals will defend themselves and they may well do so in ways that could increase violence in the street.

5.6 STATISTICAL TRENDS AND SEASONAL VARIATIONS

Some crimes are subject to marked seasonal fluctuations. As such the crucial issue which has to be addressed is whether the marked decrease in crime in this street was the result of improved lighting or a random fluctuation which would have occurred anyway.

Judging from national trends violence against the person and auto-crime increased between January, 1987 and March, 1988. A similar picture emerges within the Metropolitan Police District and within the local Edmonton division. Moreover, the target crimes occur with virtually no seasonal fluctuation throughout this time across the country, across London and within Edmonton. Against this national and local picture it seems highly unlikely that the marked decrease in crime within this locality was due to seasonal fluctuations.

Crimes which occur in a random fashion are, for the most part, unpreventable. The target crimes in this study did not occur at random. They happened in a particular location at night. Retrospective analysis of local police crime sheets indicated that similar numbers of both types of crime had occurred regularly at the same point between 1985 and 1988. To use criminological jargon, they were temporally and spatially patterned. Because they were patterned, they were predictable. Because they were linked to poor lighting of the immediate setting, they were preventable.

The strength of our evidence does not lie in weighty, random samples which are strong on statistical significance and

randomisation, and weak on control. Tackling small numbers of crimes on a local basis presents a far more effective approach to crime prevention. The tendency to dismiss small area-based research because it deals with "small" numbers of specific crimes may explain why so many centralised crime prevention initiatives have proved ineffective in preventing crime.

5.7 PUBLIC PERCEPTIONS OF LIGHTING EFFECTS ON CRIME

The public prefer community-based crime prevention strategies. Police patrols and improved lighting were retarded as the two measures which would do most to reduce crime and improve the safety of women.

69% of those interviewed after the installation of new lighting noticed the change. 99% thought it was brighter; 97% thought it was easier to recognise people; 82% thought it was better maintained; 65% thought it cast less shadows. There was a clear preference for white (High Pressure Sodium) lights (82%).

Improved lighting positively affected public perceptions of crime levels. 66% thought that people being threatened and pestered had decreased; 54% thought that physical and sexual assaults had decreased; 66% thought that lighting had increased pedestrian traffic and 85% thought fear of crime had decreased.

Subjective perceptions of crime have direct and indirect effects on the quality of urban life. If people believe crime is on the increase there will be a corresponding increase in fear. Conversely, if the public believe crime is decreasing, they will feel safer and, depending on their lifestyle, age, etc., are more likely to use the streets at night. This will increase pedestrian traffic flow, decrease opportunities for crime and harassment and increase the possibility for human intervention should an attack on person or property occur.

Good lighting is only one public measure in a range required to tackle the problems of crime and public insecurity. But it is an essential part of any overall strategy.

5.8 PRIVATIZED CRIME PREVENTION AND URBAN DECAY

Local authorities are on the horns of a dilemma. They are under increasing pressure to cut costs whilst improving local services. It is an impossible equation - the lack of investment in basic community facilities, such as lighting, means that citizens resort to their own devices in order to avoid victimisation. Privatised crime prevention strategies identified in this survey include:-

- never/seldom going out after dark
- avoiding public areas and restricting movements to narrowly circumscribed routes
- taking weapons/objects for individual protection
- buying a large dog(s)
- self-defence classes

The cumulative effect of these individualised strategies is to undermine the public sphere, endanger public safety, increase opportunities for crime and harassment, and contribute to the spiralling downward trend of urban degeneration.

5.9 CONCLUDING COMMENT

This project indicates that improved lighting can dramatically, immediately and at low cost, reduce specific crimes and fear of crime within a locality. As a crime prevention strategy, good lighting has been lost amidst widely used strategies; police patrols, publicity campaigns, neighbourhood watch. Good lighting can not only be regarded as an effective crime prevention strategy, it is a desirable thing in its own right. Approaches to crime prevention must be broadened to include the issue of community safety and public participation in an urban environment. Lighting makes a vital contribution on all fronts - it improves the look of

an area; it encourages people to use the streets; it enhances public safety. As this project demonstrates, it can and does reduce crime.

APPENDIX

TECHNICAL LIGHTING REPORT

TORN LIGHTING

Research & Engineering Laboratories

CONFIDENTIAL

TECHNICAL MEMORANDUM No. **RR470401.6RH**

Date: 4/7/88

Sheet 1

Title:

Lighting Measurements at Edmonton Green

Synopsis:

A study of the effect of increased lighting on the occurrence and fear of crime has been carried out in conjunction with Middlesex Polytechnic Department of Criminology. A residential site at Edmonton Green was selected for this study. Interviews were carried out before and after relighting to assess people's reactions to better lighting.

This report gives details **of the** old and new lighting installations and the results **e1** on-site measurements of illuminance. It is shown that the **new** lighting substantially meets the recommendations for the highest lighting category of the proposed new code for residential lighting. The new lighting is a very marked improvement over the old and this is borne out by the interviews, on which a report is to be issued by Middlesex Polytechnic.

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Introduction

An investigation into the possible relationship between lighting and the incidence of crime has been carried out in conjunction with Middlesex Polytechnic Department of Criminology. A site at Edmonton Green comprising two roads and a path serving a tower block estate was selected for this study. A considerable number of people used the route and poor lighting was thought to make users vulnerable to crime and harassment. Interviews with passers-by were carried out before and after relighting to assess their reactions. This report gives details of the old and new lighting installations with the results of measurements made under both. This memorandum complements a report from Middlesex Polytechnic detailing the results of the interviews.

Description of the site

A map of the site and surrounding area is reproduced on sheet 5. (scale is 1:1250). The site comprised Salisbury Road from its junction with Victoria Road to the left hand bend near the railway (about 200m in length) and then a path about 30m long to a rail over-bridge. This leads to Bridge Road, which in 50m joins the main road, Fore Street, The Broadway, the other end of the site. The photograph on sheet 6 shows Salisbury Road viewed towards the railway from Victoria Road. The three tower blocks of flats shown on the map are situated out of the picture to the right. The picture on sheet 7 is taken from Bridge Road looking under the railway bridge towards the path and the estate.

Lighting

a) Before improvement. Along Salisbury Road this comprised 35W SOX lanterns at 5m mounting height. On the map they are the columns numbered from 1 to 10 (shown as squares). At the end of the path by the bridge were two 80W MBF post top lanterns on 5m columns numbered 10 and 11 (shown as circles). In Bridge Street, two 35W SOX lanterns were mounted at 5m height on the columns numbered 1 (Fore Street) and 2 (by the bridge) again shown as squares.

On an initial inspection of the site, several lanterns were not working. These were rectified by the local engineer with the exception of the post-top no.11 by the bridge, which appeared to have been vandalised beyond simple repair.

Measurements of horizontal illuminance at ground level were made over the length of the site at 4m intervals. On the road sections, lines of measurements were taken along the two pavements 2m behind the kerbs (i.e. near side N/S and off-side O/S when proceeding from Victoria Avenue) and down the centre of the road. Two lines of values were taken under the bridge and one along the path.

The results are contained in the summary on table 1, for the four sections of the site, i.e. Bridge Road, Salisbury Road, under the bridge and on the path. For each section of the site the average and minimum illuminances are given in the "before" columns. The first column refers to the whole of each section of the site, while the succeeding columns break the road sections down into the N/S and O/S pavements and the centre of the road. The lighting on all sections except Bridge Road fails to meet even the least demanding requirements of the new BS5489 part 3 for lighting residential roads i.e. an average illuminance of at least 3.5 lux and a minimum greater than 1 lux. The poor maintenance certainly exacerbated the situation, but this applied throughout the "before" period of the study.

b) After improvement. It was not possible within the scope of this investigation to change the column positions or lantern mounting heights. Computer calculations were therefore carried out for new lanterns on the existing columns. The aim was to achieve the recommended illuminance levels for the 3/1 or highest category of lighting in the forthcoming part 3 of BS5489. i.e. an average illuminance over road and pavement or path of at least 10 lux and a minimum illuminance of not less than 5 lux. It was not possible to meet these levels at all points on the site with the given constraints on column position and mounting height. However it was shown that the levels were met in all but two small areas if the 35W SOX lanterns were replaced with 100W SON-T Beta 79 and the 70W MBF post top lanterns replaced with 150W SON-T Gamma 6. This change from SOX to SON is in line with the new part 3 where high pressure sodium is the preferred light source for areas in which pedestrian activities predominate or where the crime risk has to be considered. The lanterns replaced are marked on the map with a square for the Beta 79 and a circle for the Gamma 6. A few lanterns on adjoining roads were also replaced where they contributed to the lighting on the site itself.

Measurements of the new lighting were made at the same positions as those before the improvement. The results are listed on table 1 in the "after" columns.

The new lighting demands greater electrical power, but this must be weighed against the benefits obtained. For example, on Salisbury Road, although the power consumption is doubled, the lighting level is increased over four times. There is also the greater life and consequently less maintenance of the high pressure sodium lamps, together with the benefits to the neighbourhood in terms of crime reduction, as detailed in the report by Middlesex Polytechnic.

Assessment of the Measurements

As predicted, the measurements show that the requirements of the new residential road lighting code for the highest category of lighting level are substantially met over most areas of the site. For example, along Salisbury Road the average illuminance of 19 lux is well over the minimum of 10 lux. The minimum of 3.8 lux, although less than 5 lux, is one of the only three measurements which did not meet the minimum, out of 120 values taken along Salisbury Road.

The path proved the most difficult section to light and both the average and minimum are less than aimed for, but as the path constitutes only a small part of the site, it does not look unduly dark.

The improvement in lighting under the bridge is especially marked, probably because of the increase in the minimum value of illuminance. In Bridge Road the minimum of 2 lux is at a point between the two columns where the distance between extreme pavement edges is 12m. The existing columns would need changing to cope with such a width. Even so, it is a relatively small area that is below the desired minimum.

Subjectively, the lighting over the whole site has been most markedly improved and the results from the survey carried out by Middlesex Polytechnic reflect this impression. Amongst the major benefits expressed by residents are: a greater feeling of security, brighter lighting on the roads and paths, the ability to distinguish colour and being able to view parked vehicles directly from their houses.

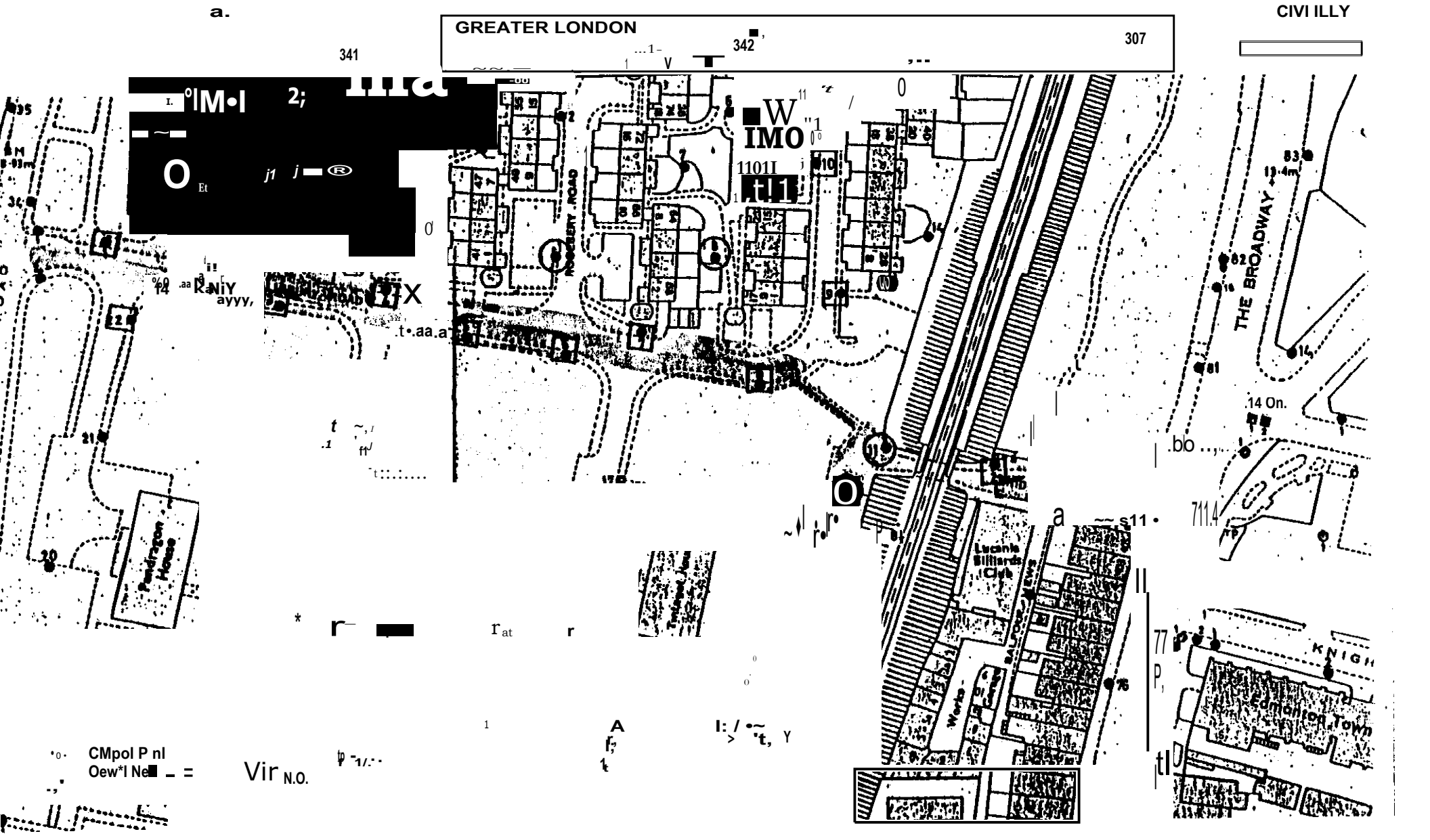
MAP OF THE SITE AT EDMONTON GREEN

REPORT NO. RR470401.6RH

: Beta 79 100w SON-T after relighting (35w SOX before)

O : Gamma 6 150w SON after relighting (80w MBF before)

Sheet No.5



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4.7.88 ,
Sheet 6.

View along Salisbury Road towards the path
and railway bridge

RR470401.6RH
4.7.88
Sheet 7

View from Bridge Road under the railway bridge
towards the path to Salisbury Road

Table 1 Summary of Horizontal Illuminance Measurements Before and After Relighting.

Section of Site		Illuminance in Lux								Notes
		Overall		N/S Pavement		(Centre of Rd O/S Pavement)				
		Before	After	Before	After	Before	After	Before	After	
Salisbury Road from Victoria Rd to path	Ave	14.5	19	3.8	15	5.0	25	**4.6**	17	(Before relighting 135W SOX lantern damaged but still lit
	Min	0.59	3.8*	.3	5.0	2.6	6.1	0.59	0.59	
Path from Salisbury Road to Bridge	Ave	10.58	6.0							Post top lantern 1 no:11 not lit
	Min	0.49	1.8							
Under railway bridge	Ave	1.5	7.3							Post top lantern 1 no:11 not lit before relighting!
	Min	10.41	5.5							
Bridge Road from bridge to Fore St.	Ave	13	23	18.4	15	7.2	16	22	39	(Brightly lit snooker hall on O/S
	Min	11.7	2.0	11.7	2.0	2.0	3.9	3.5	9.7	

Less than 5 lux recorded at only 3 points out of 120 measured on Salisbury Road

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