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A design against crime intervention to reduce violence in the night-time economy

Melissa Marselle

Research Fellow, Design Against Crime Solution Centre, University of Salford

Andrew B. Wootton

Director, Design Against Crime Solution Centre, University of Salford

Mark G. Hamilton

Inspector, Greater Manchester Police

Abstract (100-150 words)

This paper describes the research, development, implementation and evaluation of a design against crime intervention aimed at reducing violence against the person offences in Manchester's Gay Village (UK). Research found that violent crime could be understood in terms of the use and design of the environment. Violence against the person offences peaked during the weekend night-time hours, which coincided with heavy footfall on narrow, non-pedestrianised streets. The design solution—to pedestrianise the area during the weekend nights—was implemented by Manchester city council and Greater Manchester Police (GMP) on a pilot basis. An initial evaluation by GMP analysts suggests that serious violent crime fell by one offence during the pilot period when compared to the month before. A survey of users of the area during the pilot period suggests that the intervention did not increase fear of crime and was well received by members of the public.

Key words: (5)

design against crime; situational crime prevention; violent crime; pedestrianisation; crime prevention through environmental design

Introduction

Design Against Crime (DAC) is a branch of crime prevention concerned with preventing crime, anti-social behaviour and fear of crime through the design of products, places and services. DAC holds that designers have an important role to play in crime prevention, and that they have particular skills of value to this task. Ken Pease (2001) observes that:

> *"Designers are trained to anticipate many things: the needs and desires of users, environmental impacts, ergonomics and so on. It is they who are best placed to anticipate the crime consequences of products and services, and to gain the upper hand in the technological race against crime."* [p. 27]

DAC promotes a human-centred approach to preventing crime and feelings of insecurity by focusing on the roles, motivations, actions and experiences of human users within any crime prevention scenario. This encourages a more empathetic and holistic approach to crime prevention (Davey *et al*, 2005; Town *et al*, 2003). The application of design expertise to crime prevention enables a move away from technological systems and security devices indicative of a fortress society (e.g. locks, CCTV, barbed wire) to innovative and subtler design-led solutions (see Davey *et al*, 2003; Design Council, 2003 for examples).

In order to design against crime, designers must consider the potential for their designs to be misused or abused. This necessitates considering the potential abuser or misuser, as well as potential users. To do this, designers need to understand offenders' *modus operandi* (MO), as well as the tools, skills and resources employed in the course of committing a crime in order to better anticipate and design against potential offenders' actions (Ekblom and Tilley, 2000).

The aim is to develop design solutions that 'short-circuit' potential offenders' behaviour, but without reducing the design's value to legitimate users. Good DAC solutions will prevent the opportunity to commit a crime without negatively affecting the user's experience, increasing fear of crime, creating social problems, or causing the seriousness of the crime to escalate (Davey *et al*, 2005).

Place-based crime prevention

DAC utilizes two place-based crime prevention theories – Crime Prevention Through Environmental Design (CPTED) and Situational Crime Prevention (SCP) – into the wider arena of design practice (Colquhoun, 2004). Developed by C. Ray Jeffrey (1971), CPTED posits crime is partly caused by opportunities present in the physical environment. Proponents of CPTED argue that crime depends not only on the individual's motivation or 'criminality', but also on being presented with the opportunity to act on these motivations. Therefore, CTPED concentrates on design of the physical environment in order to reduce opportunities for crime. Principals of CPTED are applied to crimes that occur in the public realm such as burglary, street robbery, vandalism and vehicle crime, as well as fear of crime in public places (Schneider & Kitchen, 2002).

Situational Crime Prevention "intervenes in those causes which the offender encounters, or seeks out, in the immediate circumstances of the criminal event" (Ekblom, 2006, p383). Situational Crime Prevention, developed by Ron Clarke (Clarke, 1995; 1999; Felson and Clarke, 1998), aims to make the design of products, services, environments or systems crime resistant. SCP identifies twenty-five strategies that can be used in the design of products,

places, services, and systems to reduce their vulnerability to crime (Clarke, 1992; Schneider and Kitchen, 2007).

The interior design of pubs and clubs can reduce the occurrence of violent offences. One example of a public house that has been redesigned using CPTED principals to tackle crime problems is the Wendover pub in Wythenshawe, Manchester (Davey *et al*, 2003). The pub was blighted by drug-related crime. In order to resolve this problem, a multi-agency working partnership was established to tackle criminal activity. Through close consultation with residents and crime prevention experts, the pub was transformed into a vibrant and thriving venue for all sections of the local community. Design changes significantly altered the character and nature of the venue, reducing crime-related incidents and creating Britain's first 'Secured By Design' (SBD) accredited public house. The most significant internal change was the relocation of the toilets, previously the site of most of the drug dealing, and the removal of all seating at the bar to prevent congestion. Other changes included CCTV, improved lighting in the car park and the planting of low-lying shrubbery.

Certain physical attributes within pubs and clubs that are experienced as annoying or frustrating to indiviudals, are also associated with agression (Homel *et al*, 2001; Raistrick *et al*, 1999). These attributes include overcrowding and inadequate seating. Inconvenient bar access, where layout of furniture in a venue creates obstacles that restrict movement, can result in pinch points forcing people to crowd around a limited area of the bar to compete for service (Deehan, 1999; Homel *et al*, 2001). The increase in density around a venue's bar area makes physical contact between individuals more likely, which can escalate into physical violence between young men (Ramsay, 1982). SCP techniques to reduce provocation to violent through the reduction of stress and the avoidance of disputes require a re-design of the interor layout of the bar area (Clarke, 2008). An open layout could reduce crowding and increased staff could faciliate an efficient queing system.

City Centre Crime project

This paper describes the research, development, pilot implementation and initial evaluation of a DAC intervention to reduce violent crime in the public realm of Manchester's Gay Village (hereafter referred to as 'the Village'). The intervention was to extend the pedestrianised zone in the Village in order ease pedestrian congestion and to reduce the opportunity for violence against the person offences in the night-time economy.

This intervention is one of many developed during the City Centre Crime research project, which was initiated and part-funded by Manchester's Crime and Disorder Reduction Partnership (CDRP). City Centre Crime investigated the relationship between the design, management, use and misuse of the urban environment and crime within three geographical areas of Manchester city centre (Wootton and Marselle, 2008). These research areas were Piccadilly Gardens, the Village and the Northern Quarter. The purpose of the project was to research and develop place-based crime prevention interventions, which the CDRP could implement as necessary.

The City Centre Crime project ran from July 2007 to September 2008. At the end of the project, twenty place-based design interventions were submitted to the CDRP (Marselle and Wootton, 2008), six of which related to specific crime types that occurred within the Village research area. One of the key priorities for the CDRP and Greater Manchester Police (GMP) in winter 2008 was to reduce violence against the person offences in the city centre's night-time economy. For this reason, interventions to prevent this crime were prioritised for possible implementation. The authors presented two design interventions to prevent violence against the person offences in the night-time economy to Manchester City Council. Councillors selected one intervention, the Village pedestrianisation, for implementation on a pilot basis in October 2009.

Violence against the person is a police recorded crime category that covers a range of violent behaviour—from incidents resulting in no physical harm, such as verbal abuse and pushing or shoving, to murder (Smith and Hoare, 2009, p24). Violent offences are grouped into two

broad, higher level categories: violence with injury and violence without injury (Smith and Hoare, 2009, p23).

Method

Case study methodology was chosen for the investigation of crime incidents in the Village, as it involves a holistic, in-depth exploration of a specific unit of analysis (Willig, 2001). Data was collected to understand the interactions between criminal activity, the physical environment and its use. Further information on the methodology used in the City Centre Crime project, can be found in Wootton and Marselle (2008).

Interviews

Nineteen semi-structured interviews were conducted to understand how the use and design of the urban environment influenced crime and anti-social behaviour in the Village research area. Selection criteria for interviewees were that they either lived or worked in the area of Manchester city centre under investigation, or were responsible for the management or maintenance of the public realm in the area. Interviewees included city centre residents, business associations, city planners, street cleansing managers, street wardens, CCTV operators, car park managers, parking attendants, transport analysts, GMP, Greater Manchester Fire and Rescue Service, and Greater Manchester Against Crime (GMAC). Informed consent was obtained from all interviewees. Interviews were digitally recorded, transcribed and content analysis undertaken.

Police recorded crime data

Police recorded crime and incident data for one full year from August 2006 to July 2007 was analysed by the authors (Wootton and Marselle, 2008). Violent crime offences from the police recorded crime data were categorized according to Home Office classifications at the time (Nicholas, Kershaw & Walker, 2007, Appendix 2). Crime maps of violence against the person offences in the Village were created using MapInfo Professional® software. Temporal analysis of crime occurrence was conducted by time of day (07.00 to 18.59 and 19.00 to 06.59; GMTU, 2006) and day of the week (weekday and weekend; Smith, 2003). Multiple card sort methodology (Canter *et al*, 1985) was used to analyse the MO of violence against the person offences. The MO of violent offences within the Village was classified based on the free-text data provided in each police record (Wootton and Marselle, 2008).

Observation

CCTV

Time-lapse video footage from public realm surveillance, obtained from Manchester City Council's closed-circuit television (CCTV) control room, was used to investigate the pedestrian use of Sackville and Bloom Streets. Footage for a 24-hour period on a Wednesday

and Saturday in February 2008 were analysed. The sample days were chosen to allow comparisons with another footfall study conducted in Manchester city centre (FootFall Ltd, 2005). Five sample time periods were selected for the observation of surveillance footage on both the Wednesday and the Saturday (Wootton and Marselle, 2008). These times were selected to correspond with the times of high crime occurrence identified from analysis of police recorded crime data, in order to better understand legitimate user behaviour in relation to criminal activities.

Behavioural mapping was used to capture behaviour revealed in the surveillance footage. Behavioural mapping is a structured observation technique in which observed behaviours of a physical space are recorded on a map (Bell *et al*, 2001; Project for Public Spaces, 2005). Pedestrian numbers and behaviours such as standing or walking were recorded. Analysis of the data was conducted to obtain pedestrian footfall numbers throughout for the two days (Wootton and Marselle, 2008).

Walk-around

The authors conducted a walk-around in the Village on a Friday night in February 2008 from midnight until 3:30am. The purpose of the walk-around was to experience first hand the behaviour and flow of people in the public realm. Observations were recorded using covert video surveillance equipment, which was operated by a police officer accompanying the research team. The information and images were used for the purposes of obtaining information around crime and disorder issues for the CDRP. Later, the authors were able to analyse the video evidence obtained to clarify and compare the crime data against behaviour in the area. Excerpts were used later in the project to communicate problem issues to stakeholders.

The Problem Profile

All data on the environmental context, the legitimate use and crime occurrence of violence against the person offences in the Village were collated into a document termed a *Problem Profile* (Wootton and Marselle, 2008). A Problem Profile describes a specific crime problem occurring within a specific environmental location. Its structure draws on existing situational

models of crime causality (Ekblom, 2001; Wootton and Davey, 2003), which identify the pre-crime and post-crime factors that contribute to the occurrence of a crime. Specifically, the Problem Profile was organised around the design-orientated form of the Crime Lifecycle Model (Wootton and Davey, 2003). Additional information on victim and offender's demographics, MO, time and location of crime occurrence were also included in the Problem Profile.

Organised in this way, Problem Profiles for different crime types are used as a form of 'design brief' to structure creative thinking and facilitate innovation and concept generation activities to DAC. For violence against the person offences in the Village, both authors from the Design Against Crime Solution Centre studied the Problem Profile and highlighted data they judged to be pertinent to the occurrence of the crime and a potential basis for a DAC intervention. The researchers then discussed their findings from the Problem Profile to develop consensus on their understanding of the crime event. A workshop with stakeholders, most of which were interviewees, was conducted to validate the twenty City Centre Crime design interventions. The relevant data used for the subsequent DAC intervention central to this paper are discussed below.

Results

Design attributes of the environment

Manchester's Gay Village is described as "perhaps the most successful gay village in Europe" (Campbell, 2004). It is the focus for the city's Lesbian, Gay, Bisexual and Transgender

communities, and host to the city's annual gay pride festival. Today, the Gay Village is an inclusive area visited by people of all sexual orientations.

The Village research area investigated in the City Centre Crime project had a geographical area of 0.025 square kilometres and perimeter of 0.68 kilometres. The research area encompassed Sackville Park, the Rochdale Canal, and Abingdon, Bloom, Canal, Chorlton and Sackville streets (see Figure 1). It is a mixed-use area with businesses at ground and basement level, and residential dwelling from above the first floor. Twenty-eight bars, nightclubs, takeaways, restaurants and private taxi firms populated the relatively small geographical space of the Village research area. At the time of the research, parking was largely concentrated on Bloom and Chorlton streets where a multi-storey car park, surface car park, and on-street parking are present. The street layout of the Village follows a Victorian grid street pattern. Narrow pavements abut narrow through roads. Vehicle traffic through the area predominately travelled on Chorlton, Bloom and Sackville streets. At the time of the project, no traffic calming measures were in place. Canal Street was the only pedestrianised street at night. However, Canal Street is only part-pedestrianised, as it is intersected twice by heavily vehicle-trafficked Chorlton and Sackville streets.

<<insert Figure 1 about here>>

Legitimate use

With a large choice of bars, pubs and nightclubs, the Village is one of Manchester city centre's most popular nightlife areas. Unsurprisingly, the predominant use of the Village is related to the weekend night-time economy.

Interviewees described the use of the Village:

> *"The two main clubs probably attract 5,000 people... [Including the] bars, probably 10,000 people plus will come into the Village every weekend."*
>
> Village Business Association interviewee

> *"For the size of the area, it's got a very large amount of bars and clubs and facilities and little takeaways and restaurants, or what have you. It's a hell of a lot. And the amount of people—the footfall around that area is massive."*
>
> Greater Manchester Police interviewee

Analysis of the CCTV footage found a distinct pattern in the pedestrian use of the Village. Pedestrian traffic during the weekday was low, but high on the weekend nights. On Wednesday, the number of pedestrians did not go above 1,000 users per hour for the entire day on Sackville Street (see Figure 2), or over 500 pedestrians per hour for the whole day on Bloom Street (see Figure 3). On Saturday, pedestrian traffic on these streets was greatest in the night-time (see Figure 2 and Figure 3). The number of pedestrians peaks at 23.00 with

over 2,000 users per hour on Sackville Street and at 03.00 with over 1,500 pedestrians per hours on Bloom Street.

<< Insert Figures 2 and 3 around here >>

People in the Village area were observed walking in or appropriating parts of the street. During the observational data collection (walk around), the researchers frequently observed people walking in the street on non-pedestrianised roads. The pavement on Bloom Street was observed to be heavily congested, and observation suggested that this was due to two main environmental factors. First, there are numerous takeaways and a private taxi firm on Bloom Street. Due to a lack of public seating, individuals tended to stand on the pavement outside these establishments eating their takeaway meals or waiting for their taxi. Second, due to the narrowness of the street cars were parked with their wheels on the pavement, which reduced the amount of pavement available to pedestrians. Both of these conditions made two-way pedestrian traffic on the pavements difficult. Individuals walking in opposite directions have limited pavement space to pass one another, due to stationary groups of people on one side and stationary vehicles on the other. There was considerable opportunity for accidental or deliberate physical contact with strangers, which could escalate into violent altercations. As a consequence, many people chose to walk in the road.

People in the Village were observed, in both the CCTV footage and the walk around, using the road as an extension of either the pavement or a licensed establishment. Large groups of people were observed to be milling about on the pavement and road directly outside entrances

to two clubs. These substantial groups appropriated this space on the street for their social use. The introduction of the English Health Act 2006 prohibited smoking indoors; consequently, a greater number of individuals were observed 'hanging out' outside premises to smoke and socialise. These individuals were in addition to the other large group of individuals outside premises—those queuing to gain entrance.

Conflict between pedestrians and vehicles was observed both on the CCTV footage and during the walk around. Bloom Street is open to vehicle traffic in both directions. People who walk in the road to avoid the congested pavement must therefore move to the side of the street to allow vehicles to pass. Canal Street is not pedestrianised along its entire length. No pedestrian crossings existed at either of the intersections with Sackville and Chorlton streets. Consequently, pedestrians attempting to cross these two streets have to avoid moving motor vehicles. During the walk around, the researchers observed that this resulted in a build up of crowds of pedestrians waiting to cross Chorlton and Sackville streets on either side of the junction with Canal Street. This situation provides an opportunity for bumps and shoves with strangers that may escalate into violent altercations. As the night goes on, the impact of alcohol consumption on pedestrian behaviour becomes more apparent. Thus, yielding to motor traffic may become more problematic and drivers may become impatient with pedestrians on the street or vice versa. Examples of such behaviours were observed on the CCTV footage and during the late night walk around.

Crime occurrence

Analysis of police recorded crime data revealed that 337 violence against the person offences occurred in the Village study area between 1 August 2006 to 31 July 2007. Findings from

analysis of the police recorded crime data considered pertinent to the crime occurrence and subsequent DAC intervention development were:

- 93% (*n* = 312) of all violence against the person offences occurred during the night-time hours (19.00–07.00). 65% (*n* = 204) of these offences occurred during the weekend nights (Friday, Saturday, Sunday).
- The main locations for violence against the person offences in the Village study area were the street (54%; *n* = 183) and in or around premises (39%; *n* = 131). Both locations are hotspots for violent crime during the weekend night-time hours.
- Over half (54%; *n* = 181) of all violence against the person MOs involved physical violence against members of the public. The second biggest MO of violent offences was verbal abuse to police officers (23%), for which a separate crime prevention intervention was created.

Intervention

Concept development

Based on the above information, the Design Against Crime Solution Centre set about developing a DAC intervention to address this issue. Concept generation techniques such as the Crime Lifecycle Model, brainstorming and mind maps were used to devise design interventions to prevent violent crime associated with the night-time economy. A significant contextual factor relating to violence against the person offences during the night-time economy hours—the main hotspot for violent offences—was the combination of very high pedestrian footfall and a relatively small geographical space. This was considered by the City Centre Crime researchers to be the main and most significant contributory factor.

Proposed intervention

The proposed intervention to prevent violence against the person offences in the Village was to extend the limited pedestrianised zone currently on Canal Street to include all the heavy footfall streets in the area. This would decrease pedestrian density, ease crowding and reduce the pressure on the limited available space. Late night economy users would then be less likely to bump into one another and opportunities for provocations (accidental or otherwise) that may lead to violence would be reduced. In addition, the number of 'near misses' (such as those observed via CCTV and in the walk around) and injurious road traffic accidents involving intoxicated pedestrians in the area would also be reduced.

Limited availability of space, and pressure due to a high density of people on the street, can increase the likelihood of physical contact between strangers, which can escalate into violent altercations (Marsh and Fox-Kibby, 1992). Drunk people take up considerably more space on pavements, slowing the movement of crowds behind them (Geddes, 2008). This 'blocking' behaviour may cause irritation to others on the street, which can result in confrontation and violence. Research has shown that groups of drunk people going in opposite directions take longer to pass each other on a pavement, and are more likely to bump into one another—potentially sparking confrontation (Moore *et al*, 2008). Pedestrianisation of the street would ease congestion, thus reducing frustration and reducing the likelihood of violence. Reducing provocation through reduction of stress and the avoidance of disputes are two established SCP techniques (Clarke, 2008). Furthermore, the Home Office Police Standards Unit recommends introducing temporary pedestrian zones around areas with a high concentration of late-night economy establishments (Home Office Police Standards Unit, 2004).

The proposed extents of the pedestrianisation zone in the Village suggested by the researchers are shown in Figure 4. The entire length of all streets would not need to be pedestrianised, but merely the areas with a high concentration of night-time economy premises and volume of footfall. The City Centre Crime multi-layered research approach enabled the pedestrianisation to not only be targeted geographically but also temporally, with streets in the area only pedestrianised during the hotspot periods—weekend nights (Friday, Saturday and Sunday) from 00.00 to 05.00.

<<insert figure 4 about here>>

Implemented intervention

Manchester city council and GMP implemented the pedestrianisation intervention in the Village on a pilot basis. The pilot ran during four weekends in October 2009, starting on the evening of Friday 2nd and ending the morning of Sunday 25th. Figure 5 shows the extent of the implemented pilot pedestrianisation scheme.

As would be expected in the development from concept to reality, a number of trade-offs had to be resolved and the implemented intervention differs from the original proposal. The police and council agencies adapted the proposed intervention to accommodate road closure legislation and feedback from consultation with local businesses and residents. However, the main aspects of the original intervention remain—closure of high footfall streets to traffic on the weekend nights. Streets were closed to traffic on Friday and Saturday nights between the

hours of 20.00 and 04.00. The reason to implement the pedestrianisation at 20.00 was to limit the number of cars that might become 'stranded' parked on the street within the pedestrianised zone, were the restriction to come into force at midnight.

<<insert Figure 5 about here>>

Temporary barriers were used to restrict vehicle access during the pilot. Parts of Sackville Street and Bloom Street were closed, and driving restrictions were in place on Brazil Street and Richmond Street. However, arrangements were made to allow access to these two streets for residents and businesses. Drop off points for taxis and vehicles were arranged at either end of the pedestrianised zone. Parking in the area was reduced, with the car park on Sackville Street closed and a reduced number of on-street pay and display parking bays in operation. Images of the temporary barriers and the adoption of the streets by pedestrians can be seen in Figures 6 and 7.

<<>insert figures 6 and 7 about here>

Evaluation

Method

Crime figures

Greater Manchester Against Crime (GMAC) was responsible for evaluating the impact of the pedestrianisation pilot on crime. GMAC is an initiative to share information between the ten Greater Manchester local authorities, GMP and other relevant agencies in Greater Manchester to support crime and disorder reduction work. The evaluation examined the number of police recorded serious violent crimes that occurred in the pedestrianised zone of the Village during the pilot period. At the time of the pilot, GMP and the CDRP were concerned with reducing

the number of serious violent crimes that occurred within the late-night economy. Serious violent crime, or Grievous Bodily Harm (GBH) with Intent, "occurs when there is clear evidence of a deliberate attempt to inflict serious bodily harm regardless of level of injury sustained" (Smith and Hoare, 2009, p25).

A before- and during-intervention (A-B) study design was conducted for the evaluation of crime figures. Criteria of the analysis were limited to incidents of serious violent crime that occurred in the pedestrianised zone between the hours of 20.00 and 04.00. Three time periods were analysed: four weekends in October 2009 when the pilot was in place; four weekends in September 2009 prior to the invention; and four weekends in October 2008, as a comparator of crime levels in the month of October generally. In all cases, only incidents occurring in the area defined by the pilot pedestrianisation were analysed.

The City Centre Crime researchers were not directly involved in the pilot study or its evaluation. However, the researchers were keen to gain feedback on the intervention from users of the area and so decided to undertake a user survey.

User survey

An evidence-based approach to crime prevention should also assess changes in fear of crime and perceptions and attitudes to social control (Sutton *et al*, 2008). Sustainable crime prevention initiatives will be those recognised and supported by the wider public (*ibid,* pg 71). In addition, the Design Against Crime Solution Centre's approach to crime prevention research is human-centred and aims to avoid inconveniencing legitimate users or promoting feelings of insecurity. Therefore, a user survey to assess public response to the pilot pedestrianisation was conducted.

A cross-sectional study design was used for the survey. The survey was conducted on the final Saturday of the pilot between the hours of 22.00 and 23.30. The survey was conducted at these times for safety reasons, as this was not the peak period for violent crime. Non-probability convenience sampling was used to recruit participants for the survey. The researchers stood in Sackville Street and asked individuals or groups who were walking through the street if they could spare the time to provide their opinion about the Village pedestrianisation. Those who verbally consented were involved in the study. Each participant was asked five questions by the researcher. The researcher then recorded the participant's responses on an individual questionnaire *pro forma*. The researchers identified themselves by

their university affiliation. No written consent was obtained from participants. All responses were anonymous, as no personally identifying details were requested from participants. Each participant was asked six questions. Gender and year of birth were collected. Opinion about the pedestrianisation pilot was asked with a single item, "What do you think about the Village being pedestrianised on the weekend evenings?" Response options were 'good idea', 'bad idea' or 'mixed views/don't know'. A yes or no question was asked to discern if the participant had visited the Village prior to the pedestrianisation pilot. If the participant had answered yes they were asked, "Thinking about safety, how has the new pedestrianisation changed the way you feel about the area?" The three response options were 'feel more safe', 'feel less safe', or 'no difference/don't know'. The final question, asked to all participants, was, "The current pedestrianisation is only a four week pilot, ending this weekend. What do you think about the Village being pedestrianised on weekend evenings permanently?" Response options available were 'good idea', 'bad idea' or mixed views/don't know'.

Results

GMAC crime data evaluation results

GMAC analysis of police recorded crime data found that two incidents of serious violent crime occurred during the intervention time period. Both offences occurred in just one weekend out of the four on which the pilot scheme was in operation. In the month prior to the pilot (September 2009), three serious violent crime offences occurred. These occurred on three out of the four weekends in September 2009. In the October 2008 comparison period, there were no incidents of serious violent crimes.

The GMAC analysis states that, when compared to the month prior, serious violent crime offences were reduced by one offence during the pedestrianisation pilot. In contrast, comparing the levels of serious violent crime from October 2008 to October 2009 indicates a rise in serious violent crime. However, GMAC highlight a general upward trend in serious violent crime from 2008 to 2009, with an increase of 12.4% across the entire police division. According to GMAC, the increase seen between October 2008 and 2009 is therefore likely a reflection of this trend. As previously stated, the City Centre Crime researchers were not

consulted on the GMAC analysis, and it contains notable shortcomings. These include a focus on only serious violent crime, the consequent small number of incidents involved, and the lack of a comparable location. These weaknesses are examined in more detail in the Discussion section.

User survey results

A total of 103 people were surveyed. 62% of respondents were male and 38% female. The age of respondents varied from 17 to 61 years, with a mean age of 27 years. Analysis of the survey results showed that the pedestrianisation was overwhelming supported by users of the Village. 87 per cent of respondents (n = 90) thought the pedestrianisation of the Village on the weekend evenings was a good idea. Almost all respondents (n = 93) expressed the opinion that pedestrianisation of the Village on weekend evenings should become a permanent feature. Individuals who had visited the Village prior to the pedestrianisation pilot were asked about their feelings of safety. 87 per cent of respondents (n = 90) had visited the Village prior to the pedestrianisation pilot and of these, 81% (n = 73) claimed they felt safer in the Village with the pedestrianisation than before the pilot.

Discussion

The paper described a design-led approach to the prevention of violent crime in the night-time economy in a specific context—Manchester city centre's Village area. Research was conducted at a small geographic scale to focus on the specific components relating to violent crime, and to investigate the relationship between crime, the built environment, and the behaviour of individuals. This research approach enabled the development of a design intervention tailored to the specific context and crime problem.

The research found violence against the person offences could be understood in terms of the use and design of the environment. Violent crime peaked during the weekend night-time hours, which coincided with a footfall of over 1,500 pedestrians per hour on narrow pavements in a largely non-pedestrianised space. The high density of people in the public

realm increased the opportunities for accidental physical contact with others, which could escalate into violence. Development of the intervention was to pedestrianise the Village area only during this hotspot time for violent crime – weekend nights between the hours of midnight and five in the morning. Manchester city council implemented the intervention on a pilot basis. The GMAC evaluation found that the pedestrianisation intervention reduced serious violent crime in the Village area during the night-time economy hours by one offence when compared to the month prior the intervention. A survey of users found that the intervention was supported by members of the public and did not increase fear of crime.

Limitations

The researchers recognise that there are serious limitations to the evaluation. The authors have identified five ways the evaluation of the pedestrianisation pilot could be improved:

1. *Evaluation design* – It is recognised that a before, during, and after (A-B-A) study design should have been utilised. The current intervention was only an A-B (before and during) evaluation. This design would have included the weekend periods during November in order to establish if incidents of serious violent crime increased once the pilot pedestrianisation zone was removed.
2. *Comparable area* – The evaluation lacks a comparable area for monitoring changing levels of crime and identifying displacement (or diffusion of benefits). The inclusion of a comparable area of the Village adjacent to the pedestrianised zone from which to compare the occurrence of serious violent crime would have improved the evaluation by GMAC.
3. *Footfall analysis* – Footfall analyses should have been conducted prior to and during the intervention period to identify any change in legitimate use of the pedestrianised zone, as

well as to allow comparison to the footfall data shown here. Footfall numbers would have enabled calculation of a risk ratio. The pedestrianisation may have increased pedestrian use of the Village, which would have implications on any conclusion regarding crime occurrence.

4. *Role of capable guardians* – Interviews with capable guardians of the late-night economy (i.e. door staff, neighbourhood policing teams) could have been conducted to gather their views and experiences during the pilot. Recorded crime does not capture all crimes that occur, as it only captures those crimes reported to the police (Flatley *et al*, 2010). This would have documented any change in behaviour or management of members of the public.
5. *Impact on related crime types* – The intervention was developed to prevent all types of violence against the person offences, but was evaluated only for reduction in serious violent crime. The evaluation should have also analysed the reduction in less serious wounding offences as well. The decision to evaluate the intervention on police recorded serious violent crime, or GBH with intent crimes, resulted in a low number of crimes for the analysis. For example, the number of police recorded GBH with intent offences that occurred in all of Greater Manchester in 2008/09 were 1,816 compared to 20,591 other violent offences with injury (Smith and Hoare, 2009, p 13).

A constraint of crime prevention work is the lack of investment in evaluation (Sutton *et al*, 2008). Grant funding for the City Centre Crime project was to generate design interventions to prevent crime and anti-social behaviour in Manchester city centre. Unfortunately, funding to evaluate any implemented interventions arising from the project was not included in the grant. It is worth noting that pilot implementation of the pedestrianisation intervention was implemented over a year after completion of the City Centre Crime research project. The authors did not have access to funding to conduct an academic evaluation of their proposed design intervention. This meant than the bulk of the evaluation was conducted for the CDRP 'in house' by GMAC police analysts. Consequently, the authors were unable to conduct as full

an evaluation as they would have liked. Given the time and number of stakeholders involved in canvassing support and giving the go ahead for this intervention, and in gaining technical input on its implementation, the possibility of containing intervention design, implementation and subsequent evaluation within the timescale of a single research project is problematic.

Davey *et al* (2005) argue that the concept of "the solution" is particularly problematic in relation to crime prevention. Not all crime can be prevented by a single design. The pedestrianisation intervention in the Village was a specific, evidence-based design solution to remove from the public realm particular contributory factors (the opportunity for bumps and shoves) that can escalate into violent altercations. The researchers highlighted a conjunction of high pedestrian footfall, small geographic space and intoxication. Serious violent crime occurring within premises or not related to opportunistic factors in the external environment (e.g. pre-meditated assault) would still be expected to occur—causal factors relating to the design and layout of the interior environment or previous (anti) social relationships will not be deterred by this particular intervention.
Understanding the lack of research evaluating crime prevention interventions, the authors hope that this paper might demonstrate the ability of applying DAC to a pre-existing urban environment, whilst highlighting some of the issues relating to effective evaluation.

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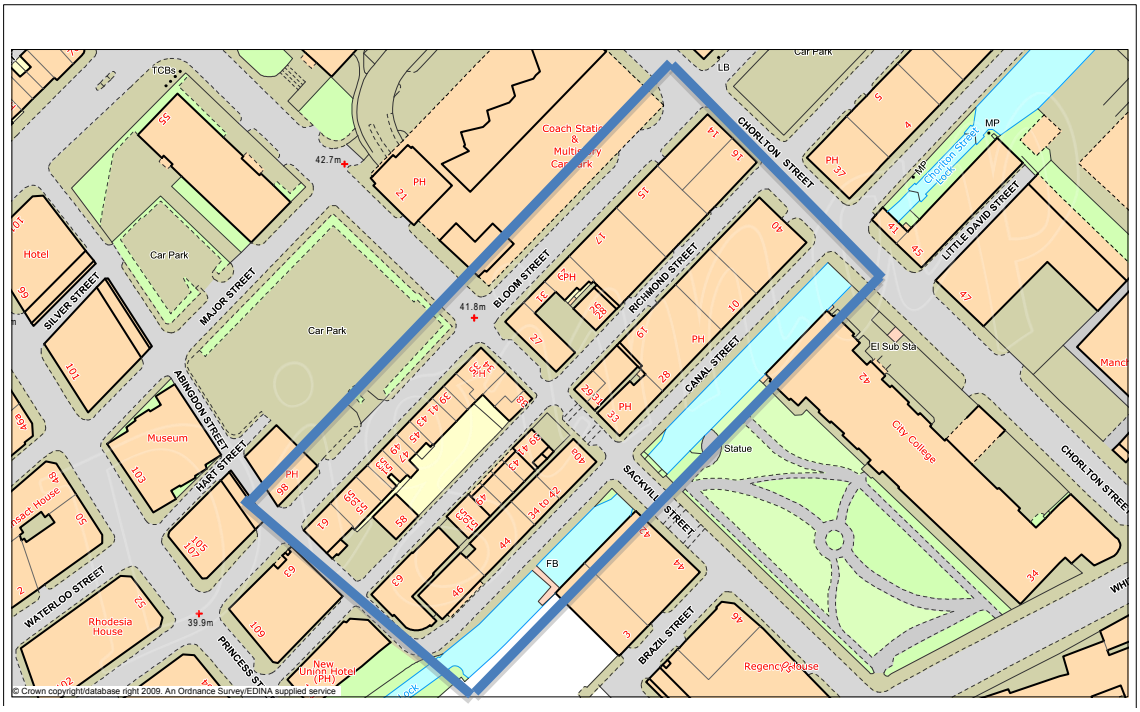

Figure 1. *Extent of the Village focus area investigated within blue lines.* © Crown Copyright/database right 2010. An Ordnance Survey/EDINA supplied service.

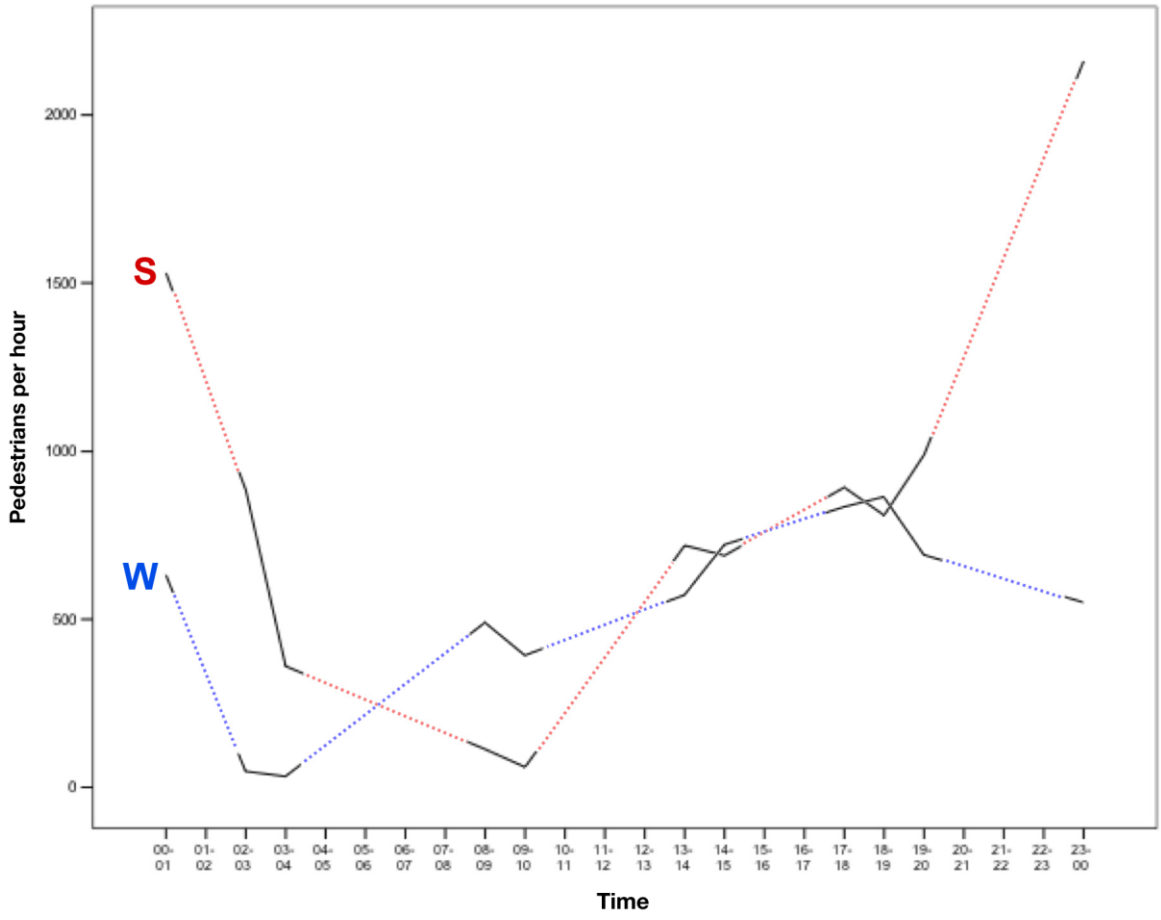

Figure 2. *Wednesday (denoted by a 'W') and Saturday (denoted by an 'S') pedestrian footfall on Sackville Street*

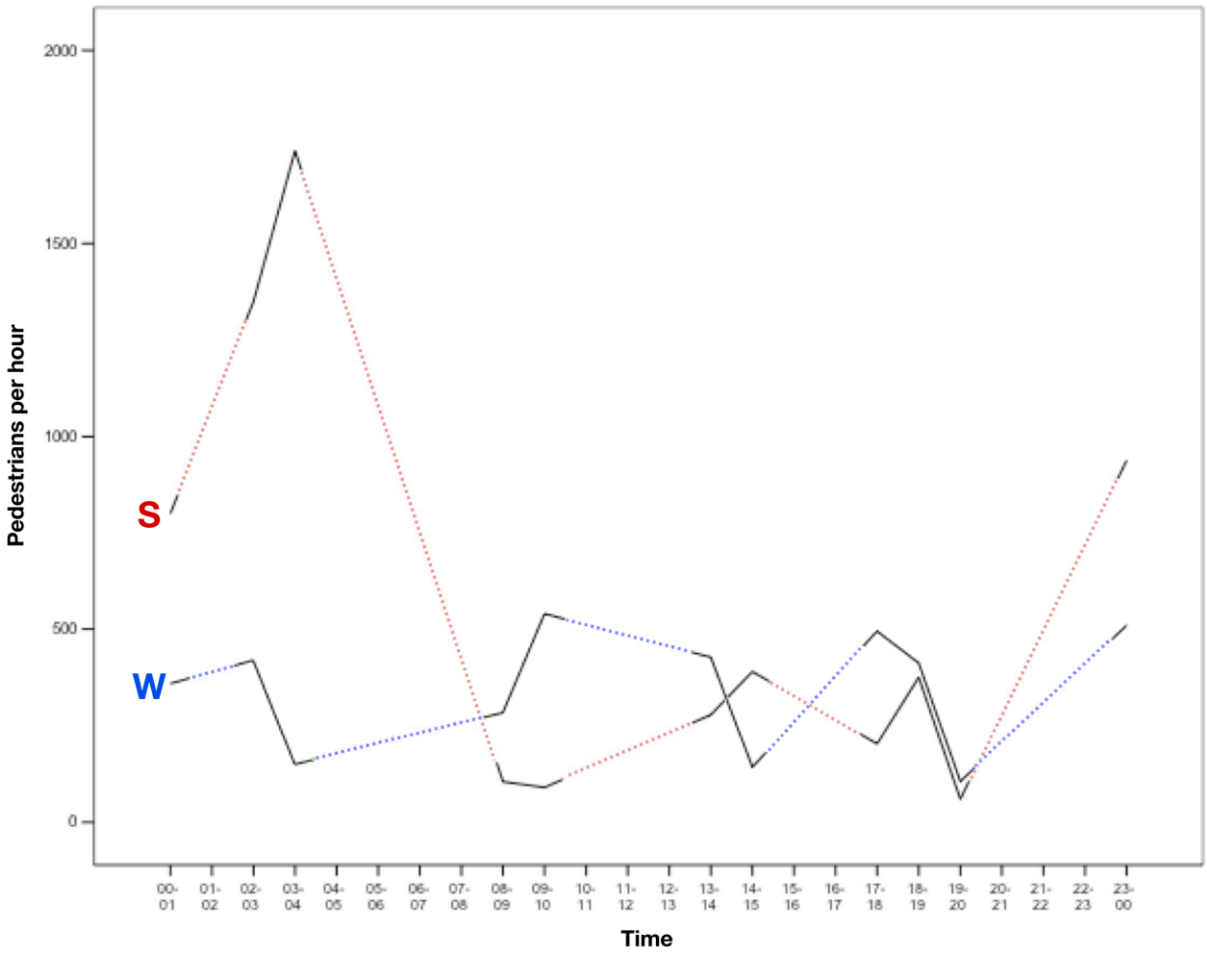

Figure 3. *Wednesday (denoted by a 'W') and Saturday (denoted by an 'S') and Saturday pedestrian footfall on Bloom Street*

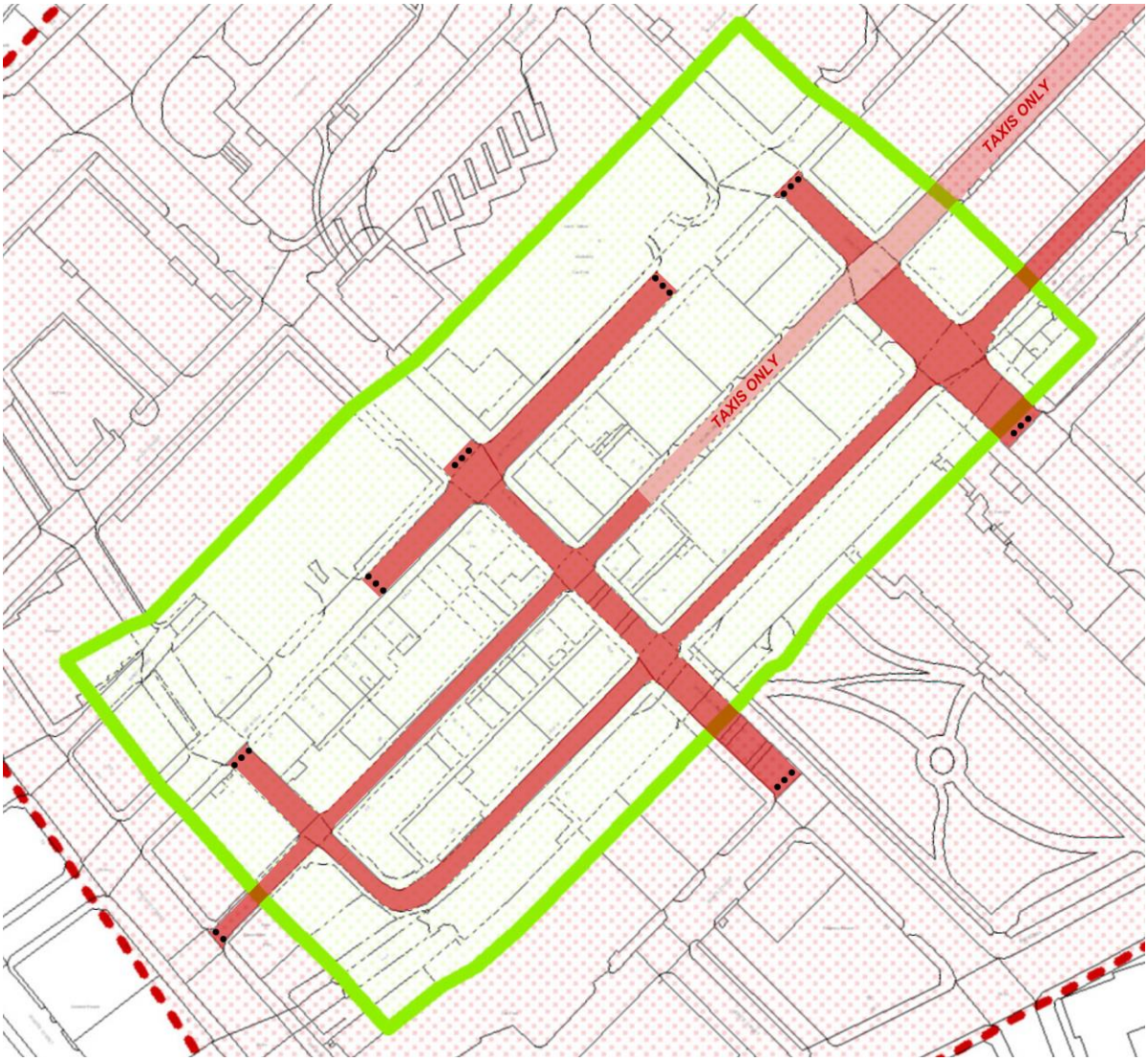

Figure 4. *Proposed pedestrianisation of the Village.* © Crown Copyright/database right 2010.

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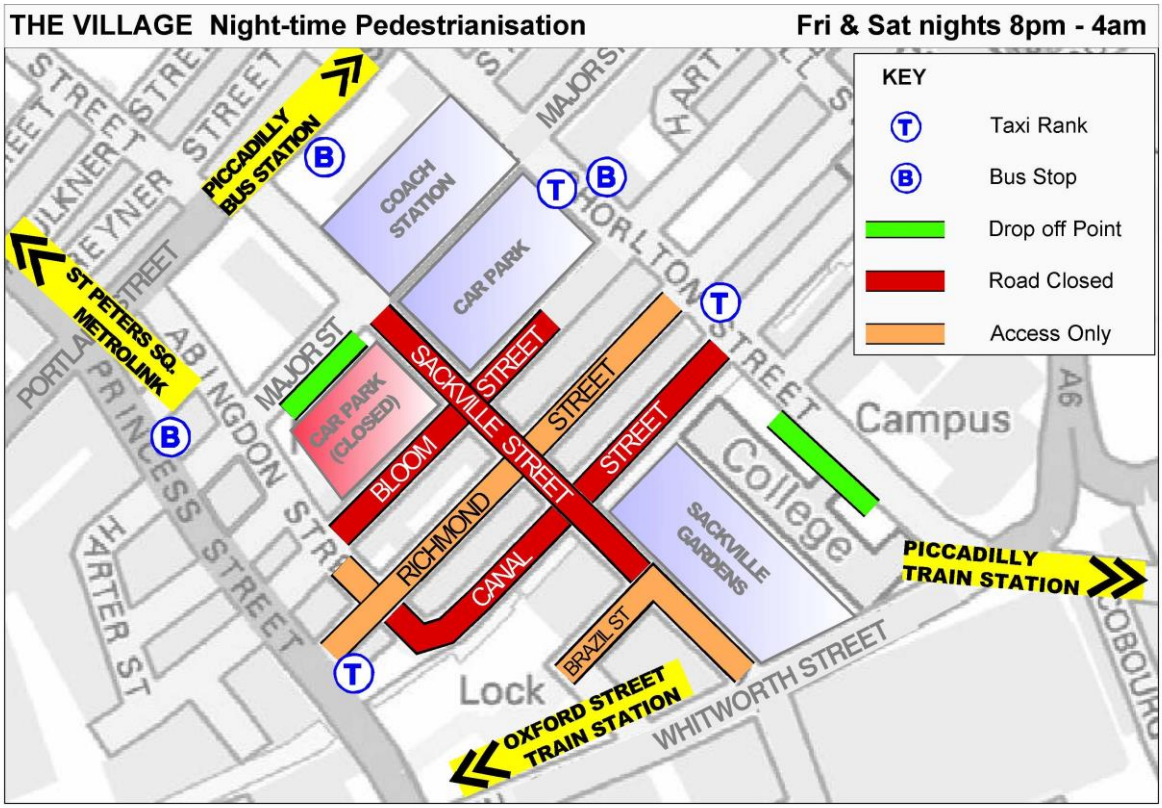

Figure 5. *Actual pedestrianisation of the Village implemented by Manchester City Council and GMP.* © GMAC/Greater Manchester Police

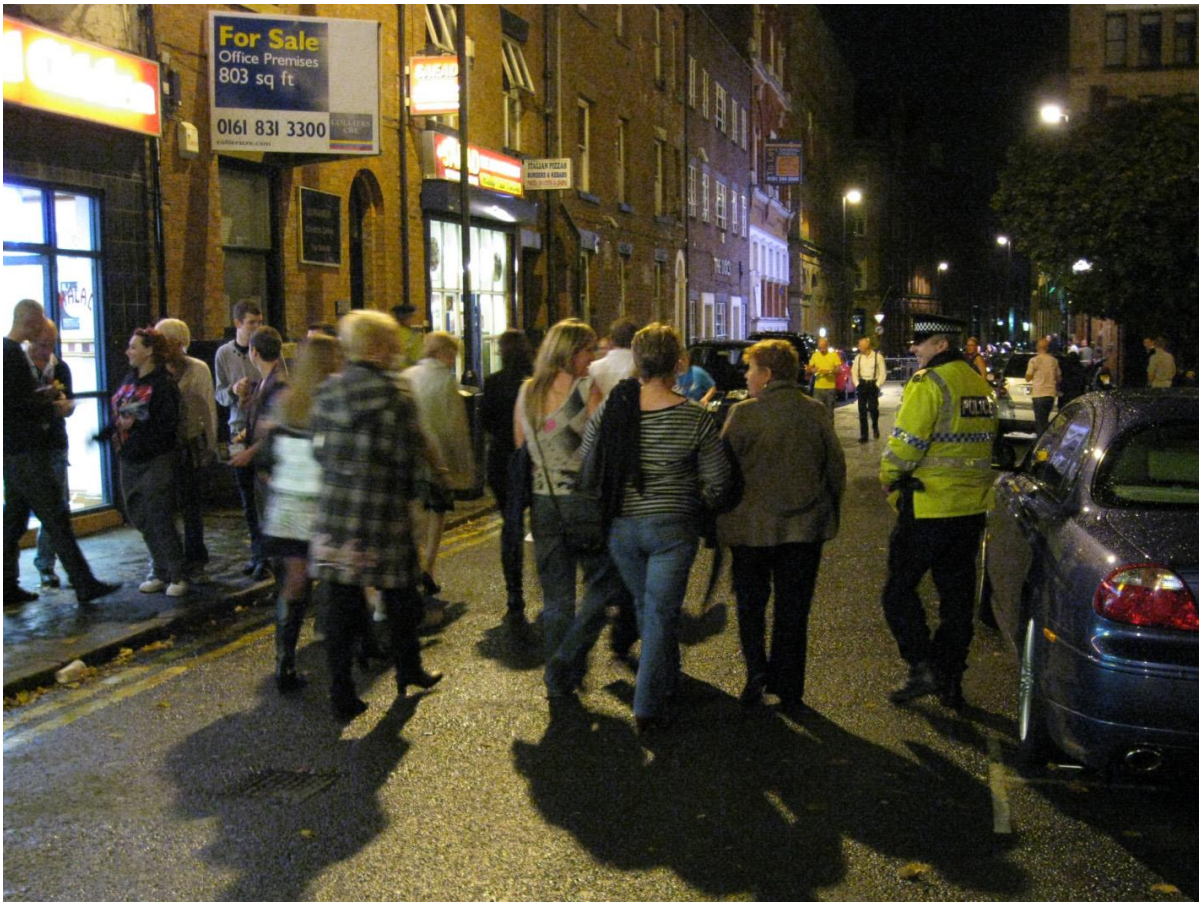

Figure 6. *Pedestrians using the newly created public space, Bloom Street*

Figure 7. *Vehicle barriers preventing access to pedestrianised pilot area, Bloom Street*