A PERCEPTUAL ASSESSMENT OF PERSONAL SAFETY IN RELATION TO UNIVERSITY CAMPUS FACILITIES

Joanna Waters[1], Richard Neale[2], Sue Hutson[3] and Kevin Mears[4]

University of Glamorgan, Llantwit Road, Pontypridd, CF37 1DL, UK

This research explores users' perceptions of personal safety in relation to university campus environments. This useful exercise in facilities management provides guidance on how the physical facilities of the campus may be modified, if necessary, to enhance users' sense of personal safety. The research uses a methodology derived from an earlier study of railway stations, which resulted in extensive additions and alterations. Perceptions are a valid source from which to identify issues of concern for campus users and in the development of appropriate solutions to ensure that university facilities promote personal safety. Using the University of Glamorgan as a case study, the authors used QuickTime software to produce virtual representations of the campus environment as an environmental stimulus in a series of focus groups to explore campus users' perceptions. As well as identifying locations on campus that generated fear, those which inspired *positive* senses of personal safety were also considered. Preliminary findings demonstrated that although the University of Glamorgan is a relatively safe campus, users expressed some concern for their personal safety at night. A perceived increase in risk was particularly related to the lack of natural daylight, insubstantial levels of street lighting and a reduction in the social presence.

Keywords: fear, perceptions, personal safety, risk, university campuses.

INTRODUCTION

Research in the field of university campuses safety has a lengthy history in the US and has recently been recognised and addressed as a significant research issue in the UK. In response to raised concerns about student's experiences of victimisation and fear of crime on campuses some important studies have been carried out by the Home Office and by individual universities which have explored the extent and likelihood of student victimisation. These have been pivotal in drawing attention to the issue and bringing it on to the UK research agenda. These studies have revealed that students are a high risk-group, more at risk of experiencing crime than members of the general population. For example, a recent Home Office study by Barberet *et al.* (2004: 15) found that one in three students had been victimised in the previous year. This is compared to a one in four risk of victimisation in the general population (Clegg *et al.* 2005).

The reason why students experience increased risk appears to be two-fold. Firstly, demographic qualities of students can be explained as possible causes for increased

[1] jwaters1@glam.ac.uk
[2] rhneale@glam.ac.uk
[3] shutson@glam.ac.uk
[4] kjmears@glam.ac.uk

Waters, J, Neale, R, Hutson, S and Mears, K (2005) A perceptual assessment of personal safety in relation to university campus facilities. *In:* Khosrowshahi, F (Ed.), *21st Annual ARCOM Conference*, 7-9 September 2005, SOAS, University of London. Association of Researchers in Construction Management, Vol. 1, 365-74.

risk of being a victim of crime. This is supported by several research studies which have explored the prevalence and nature of victimisation risk to students. Volkwein *et al.* (1995) found that student characteristics, such as wealth and material possessions, were conspicuously correlated with incidences of campus crime, while Fisher and Wilkes (2003) discussed how demographic factors such as age can be a key indicator of victimisation risk. Secondly, research has shown that risk of crime and fear of crime on university campuses can be exacerbated by different features of the physical environment, including areas with dense foliage (Nasar *et al.* 1993) and areas that are secluded (Robinson and Mullen 2001).

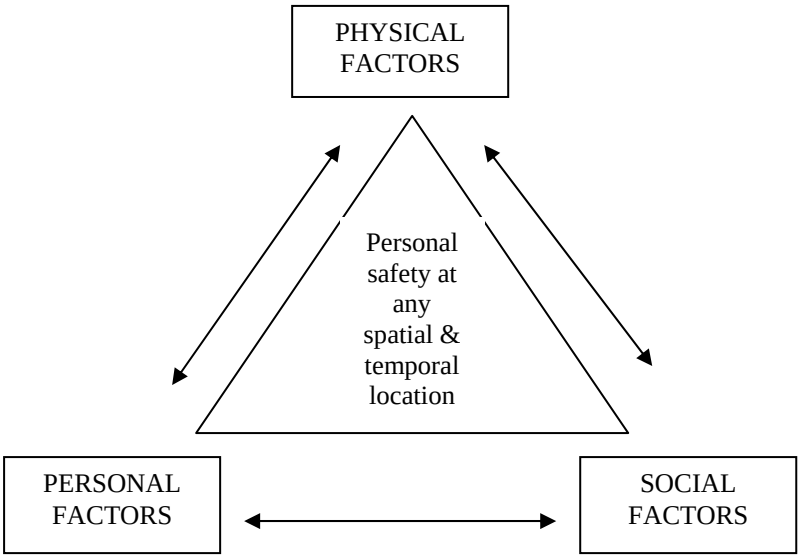
Our research expands on previous work in the field but differs in two crucial ways:

1. It explored the experiences of a variety of campus users, and not just students. This was considered important because, although students comprise the majority proportion of campus users' and are indeed at higher risk of experiencing personal safety concerns, it was considered that a thorough examination of campus safety should take into account the range of different campus users, including staff and visitors. Some studies in the US have examined the issue of crime risk to faculty staff (Wooldredge *et al.* 1995).
2. It eschewed the typically quantitative research approaches of the past and instead favoured a more subjective, experiential and perceptual approach. By exploring perceptions of personal safety in a qualitative way, considerably more meaning and depth could be attributed to users' responses and the reasons behind their views on the relative safety of the campus. This allowed possible improvements to the campus to be grounded in meaningful and profound insights of how users perceive and experience the campus day-to-day. By probing perceptions in such a way, characteristic features of the campus environment that fostered feelings of fear could be clearly identified, proceeded by the development of possible modifications to the campus to improve feelings of personal safety.

Therefore the methodology consisted of probing the subjective viewpoint of respondents' perceptions and feelings of personal safety in response to environmental stimuli that consisted of standardised 'virtual reality' walk-through scenes of a selection of campus locations. This perceptual approach contributed significantly to understanding how campus users interpret their environment and how this affects their perceptions of risk and behaviour. The study lead to a range of feasible, practical and cost-effective solutions to personal safety concerns in relation to identified vulnerable areas that existed on the campus. Problems and solutions were considered in terms of the physical and social environment of the campus, as well as personal attributes of an individual's personal safety. These were primarily in the form of the design and maintenance of the physical environment and the nature of social conditions on campus. Crucially, however, these solutions were based on the needs and concerns of campus users rather than an objective analysis of crime patterns on campus, an approach which arguably fails to take into account the experiences and emotional responses of users as they manoeuvre through and decode an environment. This holistic approach towards personal safety ensured that local contexts were taken into account and that a methodical assessment of the textual data from the focus groups corresponded with user-led solutions to reducing the perceived risk and fear of harm in the campus environment.

PERSONAL SAFETY AS A SUBJECTIVE CONSTRUCT

This paper expands on a paper presented at ARCOM last year (Waters *et al.* 2004) which described the considerable work undertaken in defining the term 'personal safety'; a term that hadn't previously been rigorously and academically deconstructed and defined. Furthermore, Waters *et al.* (2004) developed a rudimentary conceptual framework for understanding its various facets, and it emerged that personal safety was a two-dimensional issue that encompassed two distinct elements: *actual* and *perceived* risk of intentional harm. This crucial point indicated how the direction of the present campus research should proceed. The methodology deliberately focused on exploring the subjective perspective of campus users rather than a purely statistical approach to *actual* personal safety. To record and analyse purely *incidences* of harm or affronts to personal safety on campus would tell us very little about the causes or environmental contexts of such acts. Waters *et al.* (2004) formulated their framework of personal safety as a personal safety triangle; each corner representing a key causal group that impacts on the personal safety of an individual at any given time:



This framework served as a model that campus users' responses could be mapped onto so that their concerns and solutions to campus safety could be characterised according to the corresponding key causal group. This assisted in the focus group data analysis and in structuring recommendations.

CRITIQUE OF PREVIOUS CAMPUSES RESEARCH

A key criticism levied at previous campus crime and victimisation research is that most studies are underpinned by quantitative methodologies which use recorded crime statistics as their main data-source. This is supported by Tulloch *et al.* (1997) in their critique of the typically quantitative nature of research into crime and fear of crime generally. There is considerable debate about the accuracy of such data in reflecting reality and their appropriateness as a basis for underpinning crime prevention methods. This is because officially recorded crime data have been found to underestimate actual levels of crime, which Maguire (2002) summates as the 'dark figure' of crime. In addition, using official statistics as a measure of crime risk fails to take into account demographic, social or situational factors as possible influences of crime. If such objective data were used as the basis for campus crime research it is

arguable whether they would provide a fully representative portrait of campus victimisation and its causes and effects. This approach could also lead to misleading focal points for campus improvements.

While some campus research goes beyond using crime statistics and focuses instead on perceptions of crime and safety on campus (Rengert *et al.* 2002), the problem here is that the methods used are aimed at condensing perceptions into quantifiable data forms. For example, responses to questions probing perceptions of crime and safety are forced into restrictive categories designed by the researcher. Although this technique allows for the measurement of how crime levels are perceived, they do not allow for a comprehensive understanding of the reasons behind such perceptions. Peoples' concerns about crime are constructed from a variety of different beliefs, emotions and feelings and when responses are reduced to numerical data these complex processes are dramatically over-simplified. According to Bryman (2001) the inflexibility of the quantitative method and its reliance on strict research instruments can mean that the meaning and significance of events to individuals is ignored. Therefore a more qualitative approach to researching personal safety promised to elicit more profound and clearer insights into the complex relationship between people, personal safety and the campus environment.

Empirical studies that explore the in-depth subjective perspective of people and their personal safety concerns through qualitative methods have remained largely untapped. Adopting such an approach in the campus study promised to contribute much to broadening the understanding of how people interpret their social and physical environments and crucially how this affected their behaviour and use of the campus environment.

ENVIRONMENTAL PERCEPTION

The environment can have a profound effect on feelings and behaviours and environmental psychology is the study of how people interact with their environments. Gifford (1997: 17) defines environmental perceptions as including "the ways and means by which we collect information through all our senses….to include aspects of how we appraise and assess environments." In a personal safety context, people decode their environment based predominantly on information derived from their senses, but indirect information such as previous experiences also contribute to the perceptual process. Crucially, people can respond in different ways to the same environment. These issues were particularly significant for the development of the campus methodology. The importance of perceptions has been highlighted in relation to studies of crime and safety by Skogan and Maxfield (1980), who found that peoples' perceptions of crime and safety offer a more accurate gauge of safety concerns and possible crime reduction remedies than using objective crime data. Pain (1997), meanwhile, suggests that "qualitative and humanistic methods offer the most enlightening prospects of investigating the interactions between identity, social relations and place".

THE ADVANTAGES OF USING A QUALITATIVE PERCEPTUAL APPROACH

An alternative to using official crime statistics and quantitative methods of analysing perceptions is to adopt a more qualitative approach that fosters a wider and more detailed exploration of campus safety. Exploring user's experiences and perceptions

of crime and personal safety in an arena that allows for self-expression of beliefs and opinions produces a narrative of the nature and context of crime and personal safety concerns, from which a more detailed and contextual illustration of campus safety emerges. It was therefore necessary to design a research methodology that would allow for a thorough exploration of perceptions and other important contextual information. Such an approach would give campus users the opportunity to clarify their key issues of concern, leading to an informed and user-led framework of recommendations for personal safety improvements.

Focus groups were considered the most appropriate forum to stimulate a through discussion of campus users' perceptions of personal safety on the university campus because they provided an informal environment that encouraged a relatively unrestricted expression of feelings and views. Langford and McDonagh (1998: 2) define a focus group as a "carefully planned discussion, designed to obtain the perceptions of the group members on a defined area of interest". Such an approach allowed for insightful responses to be elicited as participants interacted with each other to discuss the key issues that mattered to them. According to Gibbs (1997) focus groups allow participants to talk freely and to choose descriptive categories that are significant to them. The collection and analysis of subjective textual data from focus groups thus offered a more detailed awareness and insight into campus safety.

Static photographs have often been utilised as a source of environmental stimuli, particularly in the field of environmental psychology and the study of building preferences (Schroeder and Anderson 1984). One of the weaknesses of such an approach is that the majority of these studies require respondents to rate their perceptions of a photograph of a particular environment against a narrow set of ratings scales, rather than a richer, more detailed qualitative response analysis (Hubbard 1996: 76). The utilisation of Virtual Reality (VR) as an environmental stimulus to probe user perceptions is an innovative advancement for exploring users' perceptions. By presenting a standardised 'virtual-reality' walk-through scene of a selection of campus locations or 'stimuli', the subjective viewpoint of campus users can be sought, from which a template of cost effective and practical campus design and management solutions can be attained. By probing these perceptions, characteristic features of the campus environment that invoke perceptions of risk and feelings of fear can be identified. The interpretation of the environmental space on campus was a significant focus of the research and the findings will inform any future building or maintenance work on campus, the renovation of existing ones and other additional solutions that promote personal safety.

THE RESEARCH STUDY

The University of Glamorgan was used as a case study for this research and a pilot study served as a preliminary examination of the phenomenon before a larger-scale study was undertaken. The questionnaires were piloted with four staff respondents and the focus group was piloted with 12 second year Social Sciences undergraduates. A questionnaire asked for respondents' overall perceptions of security on campus, whether, where and when they fear for their safety on campus and whether they have experienced intentional harm on campus. They were also asked to identify their common pedestrian routes across campus by drawing them on a campus map.

THE VIRTUAL REALITY APPROACH

Two key representative routes were identified from the questionnaires and were filmed using the Virtual Reality Panorama Tool; using Quick Time software a number of key 360º digital panorama scenes of the chosen environment were knitted together to produce a 2-dimensional virtual representation of a route through that environment. A daytime route across campus and a night time route, that began on campus and then left the campus towards the local train station, were filmed. The technology allows for respondents to move backwards and forwards through a route as requested, proving a more accurate representation of reality than static photographs and these standardised 'virtual reality' walk-through scenes were then used as an environmental stimuli in the focus group.

THE FOCUS GROUPS

The focus group was presented with each route in turn and asked to respond to the simulated routes. The moderator first asked the group general questions about personal safety then asked the group about their perceptions of personal safety at different positions along the routes and for them to sum up their overall view of their personal safety on the routes. As possible problem areas arose, the moderator guided the participants to discuss possible safety improvement techniques. The data from the focus groups was then transcribed verbatim and analysed for key themes and categories of responses.

RESEARCH FINDINGS

The discussion from the focus group revealed some decisive common themes in terms of aspects of the campus environment that were perceived to be risky and possible solutions to reduce these risks and promote personal safety (see Table 1). A number of recommendations were proposed and these have been arranged into categories following the three causal groups that were found to impact on perceptions of personal safety (Waters *et al.* 2004). They are: those aimed at the design, redesign or maintenance of the physical environment of the campus; those that focus on the social environment; and the personal development of individual campus users. By altering, targeting or promoting these determinants then a safer university campus, and campus user, can potentially be achieved:

Table 1. How personal safety can be improved on campus by targeting key aspects of the personal safety triangle:

Aspect of personal safety triangle	Risk factor identified in focus group	Recommendation to improve personal safety based on campus users' responses	Quote from focus group to underpin findings
	Opportunities for offenders to conceal themselves	Less vegetation	"Car park is dark, bushes all around." "No-one can see anything that goes on so if you are accosted or something bad happens at that point no one can see you because of the trees."
	Lack of visibility at night	More lighting	"Feel less safe at night – darker. "Lighting is a big issue with making you feel safe."

PHYSICAL	Day and night	More CCTV (with film in and being continually watched)	"If you had CCTV there knowing that someone's sitting in an office watching the screens."
	Campus boundary/ entry into local community	Leaving perceived security of university property and entering riskier local community	"If you leave the campus it's a different thing all together – you are outside there and parts of that were very dimly lit and hardly any people. I wouldn't be happy or have a safe feeling at all."
SOCIAL	Lack of people responsible for personal safety	Security guards with more visibility and more defined role.	"Too busy giving parking tickets to look after people's safety."
	Lack of people generally	More security guards	"The quieter areas seem to be more of a threat."
	Off campus	Security patrolling Brook Street – train station	"Maybe if you just had security at the entrance at night cos then you really wouldn't have to worry about those things."
PERSONAL	Day and night	Personal responsibility	"Don't flash your mobile phone, don't carry your purse in your hand." "Generally you always tell your friends on campus 'I'm going to be back at whatever time'; give them a rough time. And if you're not back, then within an hour they'll probably call you."
	Risk taking	Personal safety awareness training	"I think we should have had something definitely."
	Unfamiliarity with an environment	Plan ahead to ensure awareness	"If it's something you are familiar with you feel safer."

DISCUSSION

This section will be structured according to table 1 above, i.e. in terms of the causal groups of the personal safety triangle. The personal safety risks and exploratory solutions to reduce negative perceptions of personal safety on campus explored in the focus group were organised so as to correspond with the three critical determinants of personal safety.

Physical factors

Perhaps the most decisive factor that influenced perceptions of personal safety was the lack of visibility on campus at night. Personal safety concerns were low in the day, due mainly to high visibility levels and high quantities of people to provide social reassurance. However, such perceptions changed dramatically at night as and respondents experienced heightened sensitivity to the potential risks of the environment. One possible solution to such concerns is increased street lighting, which works by enhancing surveillance and allowing people to see their environment more clearly. Nair *et al.* (1997) found that increasing street lighting could considerably lessen fears. The other most pertinent factor resulting in feelings of vulnerability were enclosed spaces on campus, such as lanes or alleys which could

lead to feelings of being trapped or isolated. This finding is echoed by Fisher and Nasar (1992), who discussed how certain physical characteristics of the university campus environment, such as places of concealment, can increase feelings of fear. Less vegetation was considered to improve visibility and remove possible places for potential offenders to hide. The lack of 'hard' security devices was a consistent problem cited in focus groups and inadequate CCTV, or lack of faith in the effectiveness of CCTV, contributed to feelings of vulnerability. These findings are echoed by Campbell and Bryceland (1998). Finally, pedestrian routes within the campus boundary were perceived as safer than those off campus in the local community, due to a belief that university territory is inherently better protected.

Social factors

The most significant social factor that influenced personal safety was the presence of other people in the immediate vicinity. Large groups dramatically increased positive senses of personal safety within the campus environment, while fewer people increased feelings of vulnerability. This is supported by Pain and Townshend (2001), who found that other people and their behaviour can be correlated with feelings of fear. In a university campus environment, campus users were reassured by a high presence of other people. When the number of people in the environment diminished, fears increased, particularly at night. Another observation was that the university's security personnel were perceived to have a weak presence on campus and therefore did not provide adequate reassurance to campus users. Their function was viewed primarily as to manage the car-parking facilities on campus and this caused campus users to have reduced faith in security personnel in the event of being harmed. There was also a perceived concern about the pedestrian route between the campus and the local train station at night – something that participants felt could be remedied by having designated security guards patrolling this route.

Personal factors

The analysis showed that personal responsibility was considered an important factor in how perceptions of personal safety were constructed, for example campus users believed that there were sensible behavioural measures they could take themselves to reduce the risks to their safety. Personal safety awareness sessions arranged by the university, possibly as an induction to all new staff and students, was also considered a powerful tool in promoting awareness of personal safety and risk reduction. Familiarity with the environment was also a significant factor in promoting positive feelings of safety. Unfamiliar environments appeared to invoke higher perceptions of fear, while familiarity with parts of the campus provided substantial feelings of security, although it was remarked that this could elicit complacency. Familiarity therefore appeared to propagate self-confidence, boost senses of personal safety and reduce a 'fear of the unknown'. This is supported by Donnelly (1989), who asserted that a sense of a loss of control over an environment resulted in an increased fear of crime. It is therefore possible that familiarity with the university campus and its physical and social environment had a positive influence on feelings of control, thereby improving senses of personal safety.

CONCLUSION

The focus group approach allowed for a more holistic endeavour to capture the various facets of personal safety as experienced by campus users. Such a qualitative approach takes campus safety research in a direction distinct from the traditionally

quantitative research methodologies of the past. The focus groups served as a successful arena within which to generate discussion with a group of campus users and the environmental stimuli encouraged enthusiastic and relatively free-flowing discussion about salient points as they arose. The strength of such a methodology allows personal safety to be explored more thoroughly, leading to an informed and user-led framework of recommendations for personal safety improvements on campus. Although conclusions cannot be generalised to the entire population of campus users because of the small sample size, the data provided descriptively rich and valuable information.

The study has supplied some meaningful preliminary findings that tell us what physical, social and personal attributes of the campus and its' users need to be addressed to improve personal safety. The findings encouragingly suggest that the campus is a safe place during the day and there is probably little that can be done to improve it in daylight hours. However, perceptions of safety noticeably decreased at night, and this is exacerbated by certain features of the physical and social environment. Although situational measures are one way of promoting personal safety on campus, social and personal factors should also be considered to form a comprehensive and rounded package of ways to promote personal safety.

These findings and recommendations should be useful not only to campus management and facilities personnel, but also for the construction industry. How people interact with, use, decode and perceive their environment in terms of personal safety has important implications for the usage and image of an organisation's facilities, and has moral implications in terms of corporate responsibility. Using such an approach to explore the impact of facilities and their design, management and maintenance on users is an exciting and data rich area that can be utilised, not only to explore personal safety issues, but also aesthetic preferences and space manoeuvrability. Many organisations want to ensure that their facilities are user-friendly and safe and the methodology used demonstrates how a relatively straightforward assessment of a space can lead to solutions and recommendations to improve environments based directly on the needs and perceptions of space users.

REFERENCES

Barberet, R, Fisher, B S, and Taylor, H (2004) University Student Safety in the East Midlands. *Home Office Online Report 61/04*. London: Home Office.

Bryman, A (2001) *Social Research Methods.* Oxford: Oxford University Press.

Campbell, K C and Bryceland, C (1998) *Policing the Campus: Providing a safe and secure environment.* London: Home Office Police Policy Directorate.

Clegg, M, Finney, A and Thorpe, K (2005) *Crime in England and Wales: Quarterly Update to December 2004*. Home Office Statistical Bulletin 07/05. London: Home Office.

Donnelly, P G (1989) Individual and neighbourhood influences on fear of crime. *Sociological Focus*, **22**, 69-85.

Fernandez, A and Lizotte, A J (1995) An analysis of the relationship between campus crime and community crime: Reciprocal effects. *In:* J. Sloan and B. Fisher, (eds.) *Campus Crime: legal, social and policy contexts.* Springfield, IL: Charles Thomas Publisher.

Fisher, B and Nasar, J L (1992) Fear of crime in relation to three exterior site features: prospect, refuge and escape. *Journal of Environment and Behaviour*, **24**, 35-65.

Fisher, B and Wilkes, A R P (2003) A Tale of Two Ivory Towers, A comparative analysis of Victimization Rates and Risks between University Students in the United States and England. *British Journal of Criminology*, **43**, 526-545.

Gibbs, A (1997) Focus Groups. *Social Research Update*. Issue 19. University of Surrey. http://www.soc.surrey.ac.uk/sru/SRU19.html

Gifford, R (1997) *Environmental Psychology: Principles and Practices*. 2ed. Massachusetts: Allyn and Bacon.

Hubbard, P (1996) Conflicting Interpretations of Architecture: An Empirical Investigation. *Journal of Environmental Psychology*, **16**, 75-92.

Langford, J and McDonagh, D (2003) Introduction. *In:* J Langford and D McDonagh (eds.) *Focus Groups: Supporting Effective Product Development*. Cornwall: Taylor and Francis.

Maguire, M (2002) Crime Statistics: The Data Explosion and its Implications, *In*: M Maguire, R Morgan and R Reiner (eds.) *The Oxford Handbook of Criminology*. 3ed. Oxford: Oxford University Press.

Nair, G, McNair, D and Ditton, J (1997) Street Lighting: Unexpected benefits to young pedestrians from improvement. *Lighting Research and Technology*, **29**(3), 143-8.

Nasar, J L, Fisher, B S and Grannis, M (1993) Proximate physical cues to fear of crime. *Landscape and Urban Planning*, **26**, 161-178.

Pain, R H (1997) Old Age and Ageism in Urban Research: The Case of Fear of Crime. *International Journal of Urban and Regional Research*, **21**(1), 117-128.

Pain, R H and Townshend, T (2001) A safer city centre for all? Senses of 'community safety' in Newcastle upon Tyne. *Geoforum*, **33**(1) 105-119.

Rengert, G F, Mattson, M T and Henderson, K D (2001) *Campus Security: Situational Crime Prevention in High Density Environments*. Monsey, NY: Criminal Justice Press.

Robinson, M B and Mullen, K L (2001) Crime on Campus: A survey of space users. *Crime Prevention and Community Safety: An International Journal*, 33-46.

Schroeder, H W and Anderson, L M (1984) *Perception of Personal Safety in Urban Recreation Sites. Journal of Leisure Research*, **16**, 178-194.

Skogan, W G and Maxfield, M G (1981) *Coping with Crim*e. California: Sage.

Tulloch, J, Lupton, D, Blood, W, Tulloch, M, Jennett, C and Enders, M (1997) *Fear of Crime, Audit of the literature and community programs*. Canberra: Centre for Cultural Risk Research.

Volkwein, J F, Szelest, B, and Lizotte, A (1995) The relationship of campus crime to campus and student characteristics. *Research in Higher Education*, **36**(6), 647-670.

Waters, J, Neale, R H, Hutson, S and Mears, K (2004) Personal safety on university campuses – defining personal safety using the Delphi method. *In:* Khosrowshahi, F (Ed.), *20th Annual ARCOM Conference*, 1-3 September 2004, Heriot-Watt University. Association of Researchers in Construction Management, Vol. 1, 411-418.

Wooldredge, J, Cullen, F and Latessa, E (1995) Predicting the Likelihood of Faculty Victimization: Individual Demographics and Routine Activities. *In:* J. Sloan and B. Fisher, (eds.) *Campus Crime: legal, social and policy contexts*. Springfield, IL: Charles Thomas Publisher.