3 May 2012

Mr Matthew Crews
Crown Prosha Joint Venture
66 Alfred Street
Milson Point NSW 2061

Dear Matthew

Security Consulting Services – Eastlakes Town Centre Development

We have pleasure in submitting this final report regarding the above. The report is prefaced by an executive summary.

Should you have any questions please do not hesitate to contact me.

Yours sincerely,

Leon L. Harris Dip.Sec.Studs.,CPP
Principal Consultant

Crime Prevention (Security) Report

in relation to

Eastlakes Town Centre Development

for

Crown Prosha Joint Venture

May 2012

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1.   EXECUTIVE SUMMARY (ES)

The following is an Executive Summary of the Crime Prevention (Security) consultancy report submitted to Crown Prosha Joint Venture by Harris Crime Prevention Services. The ES covers the scope, security objectives and recommendations.

The development represents a mixed use proposal incorporating an integrated retail, lifestyle, commercial and residential and recreational complex bounded by Barber Avenue, Gardeners Road, Racecourse Place and intersected by Evans Avenue.

1.1   SCOPE OF THE CONSULTANCY

The fivefold scope of the consultancy involved:

1.1.1   ensuring compliance with the safer-by-design requirements of the City of Botany Bay Council (the Council) and State planning instruments, including the requirements of Section 79C of the Environmental Planning and Assessment Act (EPA Act) and those of the Director General pursuant to Part 3A developments.

1.1.2   assessing the local and neighbouring environments in terms of anti-social behaviour, criminal activity or potential crime risks and their likely impact on the commercial goals of the developer and associated stakeholders;

1.1.3   identifying vulnerable aspects of the development requiring specific security design* input aimed at reducing the likelihood of crime and preventing opportunities to commit crime;

1.1.4   affirming appropriate security design strategies, and/or recommend possible changes to aspects of the development's architecture and/or engineering, likely to enhance the project's security objectives;

1.1.5   recommending appropriate post-construction security management strategies to enhance the development's sustainability and marketability as 'welcoming and safe space'.

*In the context of this consultancy, we define *security design* as '*applying aspects of architecture, engineering and technology to all urban development proposals* as *an intentional environmental crime prevention strategy.*

Points 1.1 to 1.5 are addressed in four security objectives:

Security Objective 1   Planning Instrument Compliance
Security Objective 2   Neighbourhood Risk Mitigation
Security Objective 3   Specific Design Proposals to Support Crime Prevention Outcomes
Security Objective 4   Post-Construction Security Management

1.2   CONSULTANCY OUTCOMES

1.2.1   SECURITY OBJECTIVE 1   Compliance with Relevant Planning Instruments

With respect to crime prevention considerations, the redevelopment's application should comply with Section 79C guidelines of the New South Wales Environmental Planning and Assessment (EPA) Act, the requirements of Botany Council and Director's General's requirements within Part 3A of the EPA Act.

Conclusions and Recommendation   With respect to crime prevention considerations, it is our view that the development's application to date complies with Section 79C guidelines of the NSW EPA Act, the safer-by-design protocols of Council and the Director General's requirements within Part 3A of the EPA Act in that concept and master planning reflect intentional design strategies aimed at mitigating potential anti-social and criminal behaviour throughout the development.

We recommend approval, on the understanding that design-and-construct documentation will reflect specific solutions outlined in Security Objectives 2 and 3 of our report.

1.2.2   SECURITY OBJECTIVE 2   Mitigation of Neighbourhood Crime Risks

The proposed redevelopment's design or operational parameters should not cause, condone or promote anti-social or criminal behaviour and/or constitute any increase in community crime or crime risks.

Conclusions and Recommendation   From our review of the application, there is no indication that current design is likely to cause, condone or promote anti-social or criminal behaviour. We conclude that the development does not constitute an increased crime risk to the immediate site or to the surrounding locality.

Further, we are of the view that the development's overall design and operations, if supported in design development/detail, are likely to positively impact upon current levels of anti-social behaviour and criminal activity currently existing within and surrounding the present operational and public domain sites.

The developer is aware of the need to monitor crime risk factors associated with the development's eventual operation and specifically within the site's physical boundaries. (Strategies to manage on-going crime risks are covered under Security Objective 4.)

1.2.3   SECURITY OBJECTIVE 3   Specific 'Designing-Out-Crime' Initiatives

The development should reflect a 'welcoming and safe space' approach to security by incorporating safer-by-design (CPTED) principles into design development 'sign- off'; applying aspects of architecture, engineering and technology to promote best-practice crime prevention solutions for each of the sub-precincts.

Conclusions and Recommendation   We note that, from a security perspective, the current documentation reflects opportunities for appropriate 'security design' based on CPTED principles, to be incorporated into relevant aspects of the development's spatial definitions.

In particular we are assured that design documentation will detail specifications in relation to promoting effective security that focuses on:

- the application of architecture to a 'whole-of-site' security strategy;
- overall access control and security communications technology;
- lighting, landscaping and signage sub-plans to reflect intentional integration;
- specific security strategies for car parks, shopping concourses, individual retail outlets, residences, building facades, loading areas, entrances, stairwells, lifts, lift foyers and public toilets;
- attention to surrounding street and public parkland connectivity;
- protection and technical surveillance of utilities infrastructure.

We recommend that the conditional approval note the developer's intention to incorporate appropriate security design specifications with regard to the above, into detailed design documentation.

1.2.4 SECURITY OBJECTIVE 4 'Safe Space' Marketability and Reputation

Together with recommended and/or agreed security design solutions in Security Objective 3, a security awareness and/or management plan should be implemented to support compliance and design strategies, thereby enhancing the development's marketability and reputation and possibly contributing to the security of adjacent environments and the broader Eastlakes community.

Conclusions and Recommendation   It is our view that the development's security design strategies will facilitate and encourage a post-construction security awareness and/or management plan that will enhance Eastlakes Town Centre's marketability and reputation. We acknowledge that ultimately, it is the responsibility of the owner/occupier clients to agree on, and implement, such a plan.

We recommend that, prior to post-construction commissioning, the client stakeholders – as a collective – seek advice in preparing and implementing the plan, by consulting with local police, Council, transport authorities and community stakeholders, to ensure that all aspects of the Centre's operations promote a shared 'zero tolerance' policy against anti-social or criminal behaviour within, and adjacent to, the development's envelope.

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2.   THE REPORT

2.1   SECURITY ISSUES FOR THE PROPOSED DEVELOPMENT

Eastlakes Town Centre (the Centre) is a mixed use proposal incorporating an integrated retail, lifestyle, commercial and residential and recreational complex bounded by Barber Avenue, Gardeners Road, Racecourse Place and intersected by Evans Avenues. Two (two-level) basement car parks are proposed with entrances at Evans Avenue and Barber Avenue.

The aim is to introduce a 'preferred destination' urban hub by totally rejuvenating the current site. There are issues relating to anti-social and criminal behaviour within the existing shopping complex and there is anecdotal evidence at least, that such behaviour at times 'spills' onto neighbouring streets, into the adjoining Eastlakes Reserve (the Reserve) and nearby Bridge Tight Reserve. The proposed development seeks a reversal of this reputation. A feature of the concept/master plan is a seamless integration with Eastlakes Reserve with a view to enhancing its public passive amenity. Appropriate connective security design to encourage safe pedestrian amenity will support the 'preferred destination' aim.

The development will operate continuously, with residents, visitors and contractors accessing parts of the Centre on a 24/7 basis. The commercial, retail social and recreational precincts will follow designated hours of operation, based on conventional or 'on demand' opening of premises and facilities. Integrated lighting, landscaping, signage and access control design throughout the sub-precincts should be features of a whole-of-site integrated crime prevention strategy.

The Centre will be genuinely regarded as a collective community facility. It will be an attractive place to live, work, shop, socialise and relax. As such, issues of personal safety and property security will be paramount to all who access the site, whether by public transport, private vehicle or on foot.

High 'levels of comfort' will therefore be expected in relation to all forms of security. The client understands the need to present an environment where security unobtrusively embraces the entire site, without any sense of intrusion into the development's creative form and operational objectives. Crime prevention measures must blend and function holistically.

The combined emphasis on security design and security technology will provide a post-construction security regime that will be easily maintained (technically) and managed. The following specific security issues relate to the development:

- Mixed use (commercial) objectives must support the security requirements of public, retail, commercial and residential stakeholders. Risks relate to concourse, and mall movement, pedestrian and vehicle entrances to commercial and residential levels, retail areas, vehicle parking layouts and social amenity spaces. The Centre will not be immune from the usual categories of crime; theft, assault and vandalism. For residents, commercial and retail traders, unauthorised access to premises, vehicles and systems are primary concerns.

- As the site is exposed on all four boundaries to the Reserve, vehicular and pedestrian traffic, perimeter security is a central issue. Sound perimeter security indicates to passing 'traffic' matching high levels of internal security. This presents a picture of overall (total site) security integrity.

- 'Security integrity' positions the development to enjoy a positive security reputation whereby users of the different spatial 'zones' (precincts) can move to and from each, confident of integrated and effective protection.

(Every new urban development is now partly measured in terms of its reputation for personal safety (security). This development is no exception. Owner/occupier stakeholders must know that every effort has been made to incorporate 'security' into the design brief as forethought, not afterthought. It is also essential that stakeholders accept a role in a post-construction security awareness and/or management plan.)

Where once security was a peripheral issue, it is now a critical consideration to this and almost all similar urban developments across Australia.

In meeting the four key security objectives outlined in this Report and in taking account of the above issues, it is our opinion that the development's security integrity begins with good security design, based on safer-by-design or Crime Prevention Through Environmental Design (CPTED) principles (*refer Appendix 2*)

The consultants acknowledge that the client has accepted 'security' as a critical component of the overall design. The Report's analyses, commentary, conclusions and recommendations are presented to maximise four specific security objectives/outcomes, including compliance with planning instruments.

2.2   SCOPE OF THE CONSULTANCY

The crime prevention (security) consultancy was commissioned by Crown Prosha Joint Venture. The fivefold scope of the consultancy involved

2.2.1   ensuring compliance with the safer-by-design requirements of the Council and State planning instruments, including the requirements of Section 79C of the Environmental Planning and Assessment Act (EPA Act) and those of the Director General pursuant to Part 3A developments.

2.2.2   assessing the local and neighbouring environments in terms of anti-social behaviour, criminal activity or potential crime risks and their likely impact on the commercial goals of the developer and associated stakeholders;

2.2.3   identifying vulnerable aspects of the development requiring specific security design* input aimed at reducing the likelihood of crime and preventing opportunities to commit crime;

2.2.4   affirming appropriate security design strategies, and/or recommend possible changes to aspects of the development's architecture and/or engineering, likely to enhance the project's security objectives;

2.2.5   recommending appropriate post-construction security management strategies to enhance the development's sustainability and marketability as 'welcoming and safe space'.

*In the context of this consultancy, we define *security design* as '*applying aspects of architecture, engineering and technology to all urban development proposals* as *an intentional environmental crime prevention strategy.*

Points 1.1 to 1.5 are addressed in four security objectives:
Security Objective 1   Planning Instrument Compliance
Security Objective 2   Neighbourhood Risk Mitigation
Security Objective 3   Specific Design Proposals to Support Crime Prevention Outcomes
Security Objective 4   Post-Construction Security Management

2.3   THE SIGNIFICANCE OF AN HOLISTIC CRIME PREVENTION PROFILE

As mentioned above, the development provides a whole-of-site mixed use alternative to the current retail complex. It seeks to integrate the retail, lifestyle, residential, commercial and recreational precincts into an overall welcoming and safe environment that will attract and retain a market-healthy client base.

2.4   THE STAKEHOLDERS

In today's climate of fear and uncertainty about urban crime, governments and stakeholder-clients alike are keen to address security whenever new people-focussed developments are proposed. The diverse client base comprises:

- Crown Prosha Joint Venture
- City of Botany Bay Council
- retail shoppers drawn from the local, neighbouring and hopefully, distant communities;
- owner/occupiers of the retail, commercial and residential precincts;
- users of passive and active recreational space, including the Reserve;
- staff and contractors servicing the mixed uses of the site.

Each of these client sub-groups will have different security expectations, pertinent to their specific working, visiting or living environments within the Centre. However, their broad expectations will be similar in that personal and property safety will be a 'given' of the development. This then becomes the inclusive security goal.

2.5   A WELCOMING AND SAFE ENVIRONMENT

The 'welcoming and safe environment' is critical to the redevelopment's viability and, more importantly, its reputation. The current site conveys little of a whole-of-site security philosophy and, to that end, the proposed development will stand in stark contrast.

In terms of this project, a welcoming and safe environment may be defined as:

"*an environment where security has been considered as part of the master-planning, design and construction processes and where the security outcome enhances the project's overall reputation.*"

Each of the precincts - residential, commercial, retail and recreational - should reflect seamless security as part of the aesthetics. To this end, the Centre's architecture becomes a foundational security platform.

2.6   CONSULTANCY REVIEW OUTCOMES
Security Objectives, Analyses, Conclusions and Recommendations

The redevelopment's desired security (safety) outcomes are best realised by incorporating security solution options into the master-planning and detailed design stages. Early consideration of options will reduce security costs while maximising the impact throughout each of the sub-environments.

Specifically, the security design solutions should be based on parameters that:

- meet State and local government crime prevention regulations and/or guidelines;
- are incorporated into relevant aspects of the architecture and engineering briefs;
- do not detract from the development's creative form and function goals;
- are unobtrusive and minimalist in overall impact;
- consider the specific (security) needs of all user and owner clients;
- are cost-effective;
- meet the flexible requirements of a diverse accessing population;
- can be integrated with post-commissioning security procedures and management;
- set a (security) standard in line with community and client expectations.

2.6.1   SECURITY OBJECTIVE 1   Compliance with Relevant Planning Instruments

With respect to crime prevention considerations, the redevelopment's application should comply with Section 79C guidelines of the New South Wales Environmental Planning and Assessment (EPA) Act, the requirements of Botany Council and Director's General's requirements within Part 3A of the EPA Act.

Analysis and Commentary

2.6.1.1 State Instruments – The EPA Act and Director General's Requirements

The NSW Environmental Planning and Assessment (EPA) Act, 1979 allows for provision to be made for instruments to regulate or codify issues pertaining to environmental impacts of (normally) large scale and modest developments. Security (crime prevention) is one of the "impacts" allowed for.

Section 79C (1) states: "*In determining a development application, a consent authority is to take into consideration such of the following matters as are of relevance to the development, the subject of the development application*".

Section 79 (1) (b) adds: "…*the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality*".

Section 79 (1) (e) adds: "…*the public interest*".

The 2001 amendments to the interpretive guidelines for this Section state: "…*Crime prevention falls under these subsections of 79C. Councils have an obligation to ensure that a development provides safety and security to users and the community. If a development presents a crime risk, these guidelines can be used to justify:*

- *modification of the development to minimise the risk of crime, or*
- *refusal of the development on the grounds that crime risk cannot be appropriately minimised*".

The development application has remained within the (now repealed) Part 3A of the EPA Act. Under this provision, the Director General of Planning has the power to require conditions of all major developments. In this case, attention to urban design is required with regard to security and/or the prevention of crime. Development design documentation should reflect these requirements.

There are two elements to meeting this security objective. In our view, both are indicatively present.

1. The concept and master planning documentation indicates that crime risks have been considered as part of the concept and master-planning stages, and

2. The considerations can be seen to reflect "..the public interest" in terms of the State legislation and guidelines.

In this case "the public interest" clearly is to reduce and/or prevent any Centre-based or Centre-caused anti-social or criminal behaviour that might 'offend' persons accessing any part of the site or property as part of, or associated with, the site.

The public interest could arguably extend to such behaviour occurring at or beyond the Centre's perimeter, although strictly speaking, the developer has no responsibility for such behaviour.

However, the whole-of-site security proposed for the development will attempt to dissuade or displace behaviour that might impact upon the neighbouring environment. We are advised that, the design development/detail documentation will focus on perimeter and other specifics reflected under Security Objective 3.

2.6.1.2 Local Government Instruments

The City of Botany Bay Council (the Council) has no specific reference to crime prevention or community safety as a specific 'plan' for its LGA. Relevant Development Control Plans require documentation to be submitted to local police (Mascot in this case), for assessment by the Command's Crime Prevention Officer(s). Police reports inform Council of crime risks and safer-by-design solutions as part of the approval process. Council may elect to seek such an assessment independently of this Report. Safer-By-Design principles and assessment criteria are derived from EPA guidelines and are based on the CPTED model. (*Appendix 2*)

Documentation provided for this Report have been carefully reviewed in relation to compliance with Council's intent with regard to crime risk mitigation through safer-by-design measures. We are satisfied that the client has taken a whole-of-site approach to security; the intention of which is to show-case the prevention of crime and the curbing of anti-social behaviour as critical to the development's success while making a significant contribution to Council's safer community aims.

Security Objective 1 Conclusions and Recommendation   With respect to crime prevention considerations, it is our view that the development's application to date complies with Section 79C guidelines of the NSW EPA Act, the safer-by-design protocols of Council and the Director General's within Part 3A of the EPA Act in that concept and master planning reflect intentional

design strategies aimed at mitigating potential anti-social and criminal behaviour throughout the development.

We recommend approval, on the understanding that design-and-construct documentation will reflect specific solutions outlined in Security Objectives 2 and 3 of our report.

2.6.2 SECURITY OBJECTIVE 2   Mitigation of Crime Risks

The proposed redevelopment's design or operational parameters should not cause, condone or promote anti-social or criminal behaviour and/or constitute any increase in community crime or crime risks.

Analysis and Commentary

2.6.2.1 The Neighbouring Environments

There is a mix of high rise and low rise public and private residential development (mainly of the 1960s and 1970s era) within a 0.5 kilometre radius of the development perimeters. There are two reserves, a number of small-scale business outlets and busy Gardeners Road to the development's north. The area generates considerable urban traffic leading to and from the existing shopping complex. This will continue and probably increase over time. Anecdotal information indicates some anti-social behaviour within the existing (shopping) car park and the Eastlakes Reserve.

While the developer has no responsibility for security issues in neighbouring and surrounding environments, the planned design connectivity to the Reserve can arguably be interpreted as an extension of the master plan's intent to foster a 'welcoming and safe' public domain and informal social amenity across the respective retail concourses. Any proposed security solutions should take account of impacting factors which could 'contaminate' the Centre's intended security outcomes.

All major urban shopping centres attract their share of criminal and anti-social behaviour and there are many and varied explanations for levels, types, sources and frequency of such offences and behaviour. The developer understands the importance of minimising this probable impact through good security design.

One of the key security outcomes for the proposed development is to reverse this pattern. Drawings reviewed indicate the developer's intention to generate connectivity and liveliness through safe pedestrian interfaces with community streets and the adjacent Reserve.

2.6.2.2 Anti-social and Criminal Behaviour on Adjacent Roads and Streetscapes

From a crime minimisation and crime prevention perspective, this development must be viewed in relationship to neighbouring or adjoining environments.

The current complex (redevelopment site) is bounded by five intersecting roadways – Barber, Evans, Longworth, Racecourse and Gardeners. According to shop-owners, there are examples of car-hooning and intimidating behaviour on these roadways. Alcohol and/or drug-fuelled anti-social behaviour involving vehicle use and (intoxicated) pedestrians have been of concern to neighbouring residents and to local police.

2.6.2.3 Damage to the Reserve, Adjoining and Surrounding Buildings

Some adjoining and surrounding buildings reveal minor levels of graffiti and other external damage, typical of an environment where criminal activity is almost expected. The current shopping complex promotes exposed wall and façade design giving rise to unchecked defacing or damage. Surprisingly, site visits revealed only minor graffiti 'outbreaks' targeting residences or the complex. Neither was damage evident in the children's play area in the south western corner of the Reserve.

Street and external building lighting fails to illuminate to any consistent standard. The six tower lights in the Reserve are either mis-matched with street lighting and/or have un-serviced luminaires, creating dark recesses under tree-canopies or along adjacent roadways. The children's play area in the south-western corner shows no signs of vandalism and appears to be well used.

Street-scapes along residential corridors around the Reserve are tree lined with a majority of verges and front yards having a cared-for appearance. The proposed development's perimeter design should respect and complement existing street flora profiles.

2.6.2.4 Access - Motor Vehicles and Public Transport

A whole-of-site security regime begins with access. Access forms part of perimeter security and it is essential that all who move towards and away from main entrances, doorways, docks and vehicle ramps experience a sense of security in that short transition time.

The development plan takes account of this aspect of security by restricting vehicle access to underground car parks and by re-designing the Centre's at-ground parking configuration. Vehicles entering or exiting the site will be directionally 'guided' in a security sense; that is, clearly signed and well lit ramped areas are proposed, particularly to guide vehicles towards designated and secure parking bays, including loading and waste removal bays.

There is adequate public (bus) transport in and around the proposed development. We understand that bus interchanges and taxi waiting areas are to be up-graded. The design and operation of public transport and taxi ranks will be critical to presenting a positive whole-of-site security reputation. We reiterate the need for a cooperative and strategic approach between the development and surrounding stakeholders if neighbourhood crime risks are to diminish in favour of a low or no tolerance mindset.

2.6.2.5 The Importance of Inter-Community Cooperation in Crime Risk Mitigation

Our reports continually emphasise that issues of anti-social behaviour, crime and crime risk management in dense urban environments are far from academic in today's security conscious world.

Identifying crime trends can be fairly subjective. Statistics only relate to reported crime. The subjectivity arises when a crime risk analysis tries to second-guess total crime and crime trends by linking reported crime to anecdotal 'evidence' of unreported crime; sometimes said to be equal to, or more than, the reported crime in the more common property categories.

Therefore the security design and security management of this Centre must assume that random (opportunistic) anti-social behaviour and/or crime will occur, unless effective counter measures are put in place.

The new Centre's crime prevention goal is to foster a different non-tolerance of crime reputation through a determination to 're-build' the site's reputation as 'secure'; in cooperation with Council and the wider community.

As a major mixed-use development, the design must aim to provide a vibrant and inter-connecting safe environment. There is a need to pay close attention to how major pedestrian entry points, foyers and meeting spaces in particular, 'work'.

Throughout the site, pedestrians must feel encouraged to access and 'congregate' in retail and recreational forecourts and, by extension, into the Reserve. They should also feel comfortable to connect with the streetscapes knowing that security is not a concern.

Security Objective 2   Conclusions and Recommendation   From our review of the application, there is no indication that current design is likely to cause, condone or promote anti-social or criminal behaviour. We conclude that the development does not constitute an increased crime risk to the immediate site or to the surrounding locality.

Further, we are of the view that the development's overall design and operations, if supported in design development/detail, are likely to positively impact upon current levels of anti-social behaviour and criminal activity currently existing within and surrounding the present operational and public domain sites.

The developer is aware of the need to monitor crime risk factors associated with the development's eventual operation and specifically within the site's physical boundaries. (Strategies to manage on-going crime risks are covered under Security Objective 4.)

2.6.3 SECURITY OBJECTIVE 3   Specific 'Designing Out Crime' Initiatives

The development should reflect a 'welcoming and safe space' approach to security by incorporating safer-by-design (CPTED) principles into design development 'sign- off'; applying aspects of architecture, engineering and technology to promote best-practice crime prevention solutions for each of the sub-precincts.

Analysis and Commentary

The consultancy has considered the following specific aspects of the application:

2.6.3.1 Perimeters and Building Facades

The drawings indicate a perimeter definition bounded to the west by the Reserve, the North by Gardeners Road, the east and south by Barber Avenue. Design clearly defines the delineation of welcoming public space at the retail level and provides sightlines along the each of the boundaries. Landscaping and lighting are critical to night sight line certainty. Proposed pavement trees should permit uninterrupted eye level surveillance along the streetscapes. Other landscaping treatment of pavement verges should feature low level grasses or ground cover to maintain perimeter surveillance clarity. The proposed overhanging plantings from the podium level to create a south-eastern 'green wall' will prevent the opportunity for graffiti. Any other 'greening' of ground to podium level facades is encouraged.

The issues around building facades relate to (a) graffiti damage and (b) likely concealment at different set-back or recess points, including loading dock and car park entrances, building

(tower) lobbies and emergency exit doors. Design development should specify façade materials which are vandal resistant and/or which, by their form, are not conducive to tagging. Treated masonry, laminates and glazed ceramics are favoured for ground to podium level finishes. Solid porous materials should be avoided. The use of anti-graffiti paint is essential.

Perimeter lobby entrances vary in recess design. Of concern are the two lobby entrances along the proposed Reserve boundary and, to a lesser extent, the lobby fronting Evans Avenue. Their depth could encourage concealment on approach, or sight line restriction on exit. Re-consideration should be given to standardising lobby recesses, all with splayed openings with glazed outlooks to avoid blind corners and ensure sightline certainty. The broad and angled design of the serviced apartments lobby entrance is appropriate.

The north-south wall along the Racecourse Place residential-Centre divide will require sensitive low lighting treatment to dissuade unauthorised access to adjoining residences.

The Centre's perimeter design facilitates opportunities for creative under-eave down lighting, which should blend with other external (mall, square and street) lighting to model high levels of illuminance consistency, colour uniformity and rendition, to facilitate visual discrimination along each of the Centre's boundaries. HCPS recommends against the use of any form of bollard lighting within or around the Centre, due to upward glare and the propensity for damage.

2.6.3.2 Mall Entries and Retail Amenity

The major east-west, north-south retail mall(s) will generate high levels of liveliness along the mall entry concourses, creating a safe social and retail amenity day and night; an important design measure especially assuming some retail outlets will offer flexible and extended trading hours. Approaches to these mall spaces are broad and inviting. The Town Square will feature iconic building design incorporating under-croft and open space for al-fresco outlets and passive social amenity.

The importance of community connectivity cannot be overstated. The east-west mall concourse will create pedestrian retail activity to and through the main mall with a link to the square and Reserve. Both social spaces are significant to passive surveillance requirements. The 'minor' mall is less inviting and its east-west axis leading to public toilets will require camera surveillance and appropriate lighting treatment. We note the location of management offices in the northern corner of this precinct, which may provide additional security comfort levels.

The intention to retain active pedestrian spaces along Evans Avenue and create new activity along Barber Avenue, will assist the safe gathering and movement of people throughout the mall areas.

Appropriate lighting and furniture will add safe ambience to both mall spaces. Lighting design should consider transition glare at each of the entrances.

2.6.3.3 General Pedestrian Movement Corridors and Stairwells

Mall corridors are activity and connectivity generators. Their design is appropriate for purpose, providing 'eyes and ears' (security) surveillance. The service corridors are always vulnerable points in such complexes. The four corridors in the main mall should have camera surveillance and should be at least 1.5 metres wide to permit easy passing. (Long corridors with widths between 0.8 and 1.0 m can be intimidating, especially with strollers and/or shopping bags in tow). Staff-only service corridors should be electronically access controlled and sufficiently wide for staff to negotiate the spaces when delivering or moving goods. BCA compliant eye level glass panels should be fitted into the double or single doors controlling these restricted spaces. Signage should clearly indicate such restrictions.

Adequate and graduated lighting should feature at stairwell entrances and exits. Again, clear and, where desirable, back lit signs directing pedestrian movement to particular locations – other than the mandatory exit signs – offer movement certainty. Ideally, fire exit doors should be electronically locked with emergency egress capability only and be appropriately signed.

2.6.3.4 Precinct Separation: Residential, Retail, Recreational and Commercial

There is clear design separation between the stakeholder user categories. The units and services apartments have separate lobby entries and controlled access to podium and living levels. It is proposed to install security communications technology to verify visitor/guests and contractors. Retail and commercial employees will access ground levels premises via the car parks.

While access to the podium level is restricted, the landscaping plan should follow safer-by-design principles to promote good communal space sight lines to and from entrances, around perimeters areas and the pools.

2.6.3.5 Vehicle Access and Parking

From a security perspective the separation of vehicle entry points is appropriate. There are two loading docks and three retail/residential parking entries from Racecourse Place, Barber Avenue and Evans Avenue. Approach and exit sight lines surrounding all five entry points optimise surveillance from these streets and nearby dwellings.

Graduated 'down' lighting should feature at all car park entry points to maximise visual adjustment from external to internal environments and vice-versa. Similarly, ramps should be consistently lit to at least minimum recommended transition lighting standards. Bollard lighting should be avoided along or near any vehicle access points or ramps, as should wall (eye level) panel lighting.

The proposed configuration of vehicle parking is consistent with good passive or technical surveillance at both levels. Within structural limitations, the layout architecture provides good sight lines between and along vehicle lengths, enabling persons approaching, entering or exiting vehicles to be observed and to observe.

We recommend that car park ceilings be painted white and that above minimum lux levels be agreed to in lighting all parking bays. We also recommend that ramp walls be coated with anti-graffiti paint and that surveillance cameras be installed to track vehicles at critical arrival and departure points. Surveillance tracking is especially critical for vehicles accessing remote or locked-off areas after hours.

Where rectangular structural columns are specified, consideration should be given to creating 'false' round or elliptical facades to eye-level to minimise the opportunity for concealment. The measure can also minimise column collision damage.

It is important that the 'welcome mat' be extended within the car parks. Car park pedestrian corridors must be clearly identifiable in reaching lift lobbies, ground level retail and emergency exits. Directional signage and corridors are critical over such large areas in 'guiding' casual users, staff, residents, visitors and contractors to specific locations. Uncertainty often causes hesitancy, frustration, anger, even panic, when way-finding is vague or is poorly lit. It is critical that there be no areas of concealment and entrapment at any access or egress points and again that graduated 'down lighting feature'.

All vehicle parking leads to one or more lobbies, which in turn convey pedestrians to other levels via stairs, escalators, ramps or lifts. These lobbies have acceptable visibility on approach and afford as much of a 'panoramic' view as structural engineering will allow.

It is evident that carparks will be locked off at certain times and that barriers will operate to control access. Electronic access control (e.g. prox reader technology or similar) for after-hours access and/or specific level access should be installed. There must be clear parking delineation with loading docks and car parks for emergency vehicle access. Special Note: A secure parking area should be set aside for armoured (cash transport) vehicles.

2.6.3.6 Eastlakes Reserve

Although not part of the planning approval process, the Reserve is an important community public space, as is the Bridge Tight Reserve to its north. From crime prevention perspective, both spaces have high value interface with the development. Both reserves will attract additional liveliness as a result of the development (less so Bridge Tight) and both form part of the development's connectivity footprint with the community. HCPS is commenting on the Reserve because (a) de-facto, it is an extension of the development's public space (b) it has the potential to the generate liveliness through neighbourhood legibility and (c) it could be the subject of a voluntary planning agreement between the client and Council, which, from a crime prevention perspective would be a positive, even necessary, step to encourage greater informal or formal use.

We understand that the Reserve is currently used casually by children, teenagers and families as a safe social space. It is bounded by the development's western aspect with its other three boundaries fronting Barber Avenue, Longworth Avenue and Evans Avenue. The Reserve's footprint is largely open space, with low post-and-rail fencing, some boundary tree lining and the children's playground. There is a cluster of low canopy trees in the north east corner. There is scattered casual seating. Towards its centre, there is a raised berm-style grassed area creating an uneven topography character. There is a nearby structure for shelter or meeting purposes. The Reserve is lit by up to six towers. Three luminaires appeared damaged and/or needed servicing.

Opinions vary as to the usefulness of the space and its 'use' for late night anti-social behaviour. However, there is potential to re-examine measures to facilitate a safer space image. Most of the development's out-door retail and social activity will occur adjacent to the Reserve. Design detail proposes a 1.5 metre board walk with steps to facilitate connectivity with the grade differential, so that the development blends successfully with this important green space. There are a number of planning options for the Reserve which could be jointly promoted by the developer, Council and the community over time, which would promote the Reserve as a cared-for, purposeful and safe cross-demographic community space. We would encourage this strategy.

The development's western facing residents, retailers and shoppers are afforded good surveillance across the whole Reserve footprint and with careful attention to Reserve and transitional landscaping and lighting across both footprints, 'safe space' outcomes would be achieved.

2.6.3.7 Public Toilets

The public toilet facilities are located (a) within a service corridor in the main retail mall and (b) at the eastern end of the 'minor' mall. The main mall facilities feature appropriate door-less entries to the washing areas, thereby minimising concealment and permitting clearer directional vision. The minor mall has single door entries, as design does not permit otherwise.

All toilet doors should swing outwards, or should feature removable hinges. Approach lighting and signage should ideally match (in the case of the minor mall), or possibly exceed (in the case of the major mall), illuminance levels.

2.6.3.8 Car Park Lifts, Lift Foyers (Lobbies)

Ground level lifts are appropriately located within lobby areas, with some 'waiting' certainty for users once they access the controlled lobbies. Ground level service lift access is appropriate for purpose. Car park lifts to retail, residential and podium levels in both precincts are located to permit visual identification of location from different parts of the car park layouts. The car park lobbies afford reasonable sight lines, depending on their proximity to columns and occupied car spaces.

Each ground and basement level lift lobby (or waiting area) should be lit at levels above the surrounding illuminance to highlight easy identification and minimise directional confusion. Back lit directional signage is essential for car park lifts. Subject to BCA approval goods and passenger lifts should feature safety glass panels, specified to maximise sight lines for those entering and exiting lifts. Camera surveillance and emergency help points should operate in or around all lift foyers, including goods lifts.

2.6.3.9 Unit and Serviced Apartment Layouts

The unit and serviced apartment layouts present opportunities for passive surveillance from street or podium-facing balconies. Lift lobbies at the various levels are appropriately located and lifts to and from residential spaces will be accessed controlled.

2.6.3.10 Utilities Infrastructure

As with all similar developments, all utilities and communications infrastructure should be considered vulnerable at connection and feeder points. We note the location of utilities and plant rooms and recommend that they (a) be protected from general view, not just caged, (b) that they be monitored via camera surveillance and (c) be access restricted. Part of the security management plan (Security Objective 4) will be to observe the movement of contractors accessing these spaces. Surrounding areas should be clear of clutter and should provide contractors and security personnel with clear site lines to doorways.

2.6.3.11 Loading Docks

The loading docks as envisaged provide appropriate surveillance for trucking movements, loading, unloading and post-dock delivery. Delivery service corridors should not impede movement, nor should there be any sense of feeling trapped or isolated at goods lift lobbies. It is desirable that loading docks, service entries, service corridors and service lift lobbies, be under camera surveillance.

2.6.3.12 Waste Storage

Waste storage can be intentionally or accidentally set alight therefore, combustible waste materials should be stored where its location and collection may be observed by human resources and technology, e.g. camera surveillance. Fire detection and fire suppression systems should be installed in all waste storage areas.

2.6.3.13 Security Communications, Security Control and Monitoring

The management of post-construction security is discussed as part of Security Objective 4. However, in the Centre's design, it is essential that 'security' have a visible and public face.

Drawings don't indicate any location for a security presence or manned control facility; best positioned at ground level within the main public precinct. A 24/7 presence sends a strong signal to all who access the Centre's pedestrian thoroughfares that security is taken seriously.

'Security control' could be located as a front office of the Centre management space. The control room/office area should be spacious and ergonomically designed. All communications and camera monitoring equipment would be located within this space.

2.6.3.14 After-Hours Access and Egress

Planning should be undertaken for total access control between the different precincts during and after business hours. The development of protocols will be required for contractors entering residential and commercial premises.

Security Objective 3 Conclusions and Recommendation   We note that, from a security perspective, the current documentation reflects opportunities for appropriate 'security design' based on CPTED principles, to be incorporated into relevant aspects of the development's spatial definitions.

In particular we are assured that design documentation will detail specifications in relation to promoting effective security that focuses on:

- the application of architecture to a 'whole-of-site' security strategy;
- overall access control and security communications technology;
- lighting, landscaping and signage sub-plans to reflect intentional integration;
- specific security strategies for car parks, shopping concourses, individual retail outlets, residences, building facades, loading areas, entrances, stairwells, lifts, lift foyers and public toilets;
- attention to surrounding street and public parkland connectivity;
- protection and technical surveillance of utilities infrastructure.

We recommend that the conditional approval note the developer's intention to incorporate appropriate security design specifications with regard to the above, into detailed design documentation.

2.6.4 SECURITY OBJECTIVE 4   'Safe Space' Marketability and Reputation

Together with recommended and/or agreed security design solutions in Security Objective 3, a security awareness and/or management plan should be implemented to support compliance and design strategies, thereby enhancing the development's marketability and reputation and possibly contributing to the security of adjacent environments and the broader Eastlakes community.

Analysis and Commentary

2.6.4.1 Post-Construction Operational Security

The effectiveness of a holistic security regime will ultimately depend on the capacity of owner-occupier stakeholders to develop and deliver formal security procedures and practices as a strategy to manage on-going crime (security) risks. Implementation of an integrated security procedures, practices and management plan will reduce overall legal liability, providing tangible evidence as part of the centre's 'duty of care' and occupational health and safety requirements.

Ultimately, the Town Centre will succeed as a preferred destination if the negative crime profile associated with the existing complex is reversed. Security related 'place management' will therefore become a critical element of the development's on-going overall site management strategy.

Client goals which implicitly and explicitly reflect an understanding of the criticality of a 'welcoming and safe environment' as a market and reputation maximiser, will lose traction if operational security fails to support those goals.

Therefore the marketability and initial reputation of the Centre will in part stem from its attention to post-design security management; on how security and safety are positively or negatively impacting upon all stakeholders. From the outset, good security management will impact on marketability as the Centre is 'sold' to its prospective client stakeholders, including the Eastlakes community.

There are four post-construction elements to strengthen and support CPTED design initiatives:
- security technology maintenance,
- a responsive and skilled security team,
- development of security procedures and practice,
- managing reputation and on-going risk.

These elements may be grouped under the CPTEM banner – Crime Prevention Through Environmental Management.

2.6.4.2 Security Technology Maintenance

There are two issues here – failure and redundancy.

It is our experience that security technology, once installed, fails for lack of comprehensive maintenance scheduling. Failures occur in systems relating to security communications, surveillance technology, access control and alarms.

It is also our experience that redundancy is often not part of security budget planning. There are two types of redundancy, a use-by date and the roll out of new technologies. In both cases, technologies need to be constantly reviewed and realigned to meet contemporary (risk) challenges and conditions and in order to ensure that the hardware and software interfaces continue to complement (support) the human resource and security procedures/practice strategies. Capabilities must match specifications at all times.

2.6.4.3 A Responsive and Skilled Security Team

It is our understanding that the developers propose a '24/7' security presence, to manage both ground level and basement precincts. The 'presence' should be a highly visible one. Where two or more security staff are on simultaneous duty, they should be responsible for patrolling car park, retail, public space and residential access. As indicated under Security Objective 3, a security office/control room should be located within the main mall precinct with good sight lines, camera surveillance and indicative signage. The location should have a concierge appeal, as should any on-site security team.

The team should be skilled in environmental observation, in interpersonal communication, in providing information (guiding and way-finding), while also directing, restricting and challenging where necessary. Ideally, in the eyes of those accessing the site, the team will have more of a

concierge or meet-and-greet role, one which is always underscored by an alertness and readiness to report on, or intervene in, threats or incidents.

Arguably this retail and residential address is a prestigious development. Security management should itself be prestigious. In order to maintain high levels of 'safe and welcoming space', the traditional security guard is not an option. This is an opportunity to showcase the Centre's security reputation, managed at front-of-house by competent, communicative, courteous, well trained and well paid staff.

While we make no comment as to the nature and terms of employment, there are advantages in this setting of hiring an 'in-house' team over contractors. These relate to intelligence gathering and local knowledge-building from familiarity and contacts with residents, office workers, retailers, the public and police. This promotes security 'ownership'. In-house security staff are more likely to 'own' a security plan than out-sourced staff.

The security team would also need to be appropriately trained in relation to the use and value of the access control and camera surveillance systems. All too often we are made aware of the tenuous connection between security staff and (their) technology. Legislation defines the appropriate use of this technology. What it does not do, in our view, is mandate the understanding and application of technology in ways that can detect ultimately reduce and hopefully prevent crime. It is anticipated that the security team will therefore be well trained and held accountable in this regard.

2.6.4.4 Development of Security Procedures and Practices

A security awareness (procedures and practices) profile is necessary to complete the overall goal of a welcoming and safe environment. All who enter the Town Centre, for whatever legitimate reason, should sub-consciously be aware that security is an integral part of the development.

Security awareness is often delegated to the security professionals. In one sense this is appropriate. In another it is not. While professional management of security is part of a holistic regime, in today's security conscious world, all participant stakeholders in the Centre's operations have an obligation to complement delivery of those services.

Security awareness is the point of connection with the centre's security design characteristics. Although the security emphasis is 'low key' and largely unobtrusive through architecture, technology and a professional security team, there is every reason to encourage a security awareness mind-set, among all who frequent the site. In time this should become an automatic awareness.

The next step is to develop more formal security procedures and practices – again 'targeting' owner-occupier clients. In much the same way as there are automatic safety evacuation procedures, so might there be merit in developing security reporting of a-typical occurrences and security emergency procedures.

2.6.4.5 Managing Reputation and On-going Risk

Shared security goals should lead to shared security expertise and a shared approach to security and emergency risk management, the final element in achieving the fourth objective.

Lasting security outcomes are usually jeopardised if there is no clear plan to manage security; that is, to manage the technology, manage the security team and manage new crime risks.

We would encourage the new Centre management to allocate resources to developing a formal crime risk management strategy as part of the overall plan to promote Eastlakes as a preferred living, working and visiting destination.

Security Objective 4   Conclusions and Recommendation   It is our view that the development's security design strategies will facilitate and encourage a post-construction security awareness and/or management plan that will enhance Eastlakes Town Centre's marketability and reputation. We acknowledge that ultimately, it is the responsibility of the owner/occupier clients to agree on, and implement, such a plan.

We recommend that, prior to post-construction commissioning, the client stakeholders – as a collective – seek advice in preparing and implementing the plan, by consulting with local police, the Council, transport authorities and community stakeholders, to ensure that all aspects of the Centre's operations promote a shared 'zero tolerance' policy against anti-social or criminal behaviour within, and adjacent to, the development's envelope.

2.7   REVIEW METHODOLOGY

The methodology indicates the perspective taken by the consultants in undertaking our analysis and making recommendations. The consultants have:

(a) reviewed the drawings in order to understand the commercial and architectural goals of the development;
(b) received input from the development's design representatives;
(c) explored the crime risk backdrop;
(d) visited the site during the day and night;
(e) obtained information in relation to local crime risks and statistics;
(f) obtained information in relation to (security focussed) planning authority instruments.

2.8   REFERENCES

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Appendix 1: Botany Bay LGA Crime Statistics

The following crime statistics are relevant to the Eastlakes environment. Source: NSW Bureau of Crime Statistics and Research. Number of recorded incidents and rate per 100,000 population.

Recorded victims within the Botany Bay Local Government Area.	Jan-Dec 2007	Jan–Dec 2008	Jan–Dec 2009	Jan–Dec 2010	Jan–Dec 2011
Murder	1	0	1	0	0
Assault (domestic violence related)	167	129	133	134	131
Assault (non domestic violence related)	247	200	235	203	194
Sexual assault	11	13	8	18	16
Indecent assault/act of indecency/other sexual offences	31	23	23	34	29
Robbery without a weapon	38	35	23	24	38
Robbery with a firearm	10	4	4	2	4
Robbery with a weapon not a firearm	19	14	5	9	13
Break & enter – dwelling	213	161	134	161	182
Break & enter non dwelling	107	73	90	65	52
Motor vehicle theft	269	195	135	188	166
Steal from motor vehicle	486	435	373	284	312
Steal from retail store	242	276	363	429	245
Steal from dwelling	118	95	94	86	91
Steal from person	169	130	132	144	148
Malicious damage to property	627	686	571	516	562
Arson	19	16	8	12	13

Trends in Recorded Crime Statistics, 2007 to 2011 - Offence categories	24 month trend^^	60 month trend^^
Murder*	nc**	nc**
Assault - domestic violence related	Stable	Stable
Assault - non-domestic violence related	Stable	Stable
Sexual assault	nc**	nc**
Indecent assault, act of indecency and other sexual offences	Stable	Stable
Robbery without a weapon	Stable	Stable
Robbery with a firearm	nc**	nc**
Robbery with a weapon not a firearm	nc**	nc**
Break and enter dwelling	Stable	Stable
Break and enter non-dwelling	Stable	-16.5%
Motor vehicle theft	Stable	-11.4%
Steal from motor vehicle	Stable	-10.4%

Steal from retail store	-42.9%	Stable
Steal from dwelling	Stable	-5.9%
Steal from person	Stable	Stable
Malicious damage to property	Stable	-2.7%
Arson	nc**	nc**

This table shows the results of statistical tests for a significant upward or downward monthly trend in the number of criminal incidents recorded over 2 years and 5 years respectively, for selected offence categories. Where the trend is significant, the annual percentage change in the number of incidents is shown.

^ For murder and manslaughter, the data are counts of recorded victims, not criminal incidents.

^^ The trend test used was a two-tailed Kendall's rank-order correlation test with a 0.05 level of significance .

For the 24-month trend the annual percentage change is provided if the trend was significant.

For the 60-month trend the average annual percentage change is provided if the trend was significant.

Rates are only calculated for the major offences. Ranks are not calculated for murder due to the low number of recorded victims per LGA.

** Trend information is not calculated (nc) if at least one 12-month period in the selected timeframe had less than 20 incidents.

Note: The statistics need to be treated with caution as they represent only reported crime, therefore, a number of categories may also show lower than actual incidents, e.g., Steal from retail store.

Further, it is important to note that changes in reported crime are also significantly affected by factors other than changes in victimisation, including (i) changes in the willingness of the public to report crimes to police, and (ii) changes in policing policy and practice. The second factor particularly affects trends in recorded drug and weapons offences, and trends in offensive behaviour, so changes in the number of incidents for these offences may reflect shifts in policing, rather than in actual crime rates.

Where the number of recorded incidents is low, a very small change in the actual number of incidents may result in a disproportionately large change in derived ratios such as the rate per resident population or the percentage change over time.

Appendix 2: Crime Prevention as a Design Strategy

A 2.1   Rationale

Crime prevention has been linked to urban design since the late 1970s. The concept originated in the United States and Canada when sociologists, criminologists and architects began to link criminal behaviour in public spaces with poor design and layout of those spaces.

Today, there are four broadly defined models of crime prevention. They may be implemented individually, although ideally initiatives derived from each will overlap. The four models are:

Crime Prevention By Social Intervention – a model that sustains the integrity and safety of (often disadvantaged) communities through government and corporate and local support for programs, development initiatives and improvements to infrastructure.

Crime Prevention By Community Development – a model that encourages settled communities to develop partnerships in accepting responsibility for protecting personal and neighbourhood assets through a commitment to networking and sharing responsibility for community development goals.

Situational Crime Prevention – a model that focuses of place-specific crimes, targeting offences and offenders by pro-active and responsive security or law enforcement strategies.

Crime Prevention By Environmental Design – a model that incorporates aspects of architecture, engineering and technology to enhance the form, function and reputation of the built environment as "safe space".

Crime Prevention Through Environmental Design (**CPTED**) is a coined version of the Crime Prevention By Design model; one that is takes a specific approach to reducing and preventing crime by applying architectural design principles to urban developments which focus on territoriality, surveillance and access control. CPTED and the other models have largely been adopted throughout the developed world as legitimate crime prevention strategies.

Throughout the 1980s and 1990s, State and local authorities within Australia, responsible for urban development approvals, have been gradually adopting the CPTED or similar crime prevention (design) concepts when approving both large and small scale development applications.

Within Australia, there is recognition by all stakeholders involved in urban development, (however the term is defined) that designing out crime should form part of *mandated* development application criteria.

In 2001-2, the New South Wales Parliament assented to changes in guidelines under Section 79C of the EPA Act to include crime prevention as one of the "matters of public interest" which must be considered in approving development applications.

Increasingly, local authorities are introducing instruments and/or guidelines requiring 'security' to form part of DA documentation.

Notwithstanding local and State based regulatory requirements, it would seem prudent that developers seek to incorporate crime prevention-by-design guidelines to all projects, especially given the marketing and legal emphases on personal and community safety (security) Australia.

It is conceivable that, if built environments can be "secured" by adopting agreed crime prevention design guidelines, (protocols, etc.), then such guidelines will in time become mandatory in much the same way as Building Codes and Occupational Health and Safety standards have been adopted.

Incorporation of crime prevention architecture and engineering into relevant planning documentation throughout the design-and-construct stages is the ideal way to ensure compliance with local and State requirements.

A 2.2   Aims: Crime Prevention By Design

The broad aim of crime prevention design principles is to create and sustain safer communities by incorporating crime prevention design initiatives into all urban development.

From the literature, it is possible to identify two specific aims:

- To promote the legitimate and safe use of all natural and built environments by incorporating crime prevention or security design codes or guidelines into all development planning and approval processes.

- To enhance the reputation of developed environments by ensuring that crime prevention or security design criteria are integral to all architectural and engineering documentation submitted for review and approval by relevant authorities.

A 2.3   The Concept of "Defensible Space"

Oscar Newman (1972) coined the term. He developed the concept in relation to significant crime problems in high-rise ghetto type housing developments of New York City in the 1960s. Newman suggested that the urban design of inner city precincts was directly attributable to anti social behaviour and high crime rates.

Newman recognised that there were three spatial issues that should be addressed in all future urban planning – territoriality, surveillance and access control. Each can be linked with architectural and/or engineering documentation in a coordinated approach towards making public and private spaces relatively crime free.

A 2.4   The Concept of Territoriality

Crowe (2003) suggests that the right physical design contributes to a positive sense of territorial use and ownership – a sense of territorial influence. In urban developments, territory may be defined or classified as public space, semi-private or communal space, restricted space and private or secure space.

Mixed use sub-divisions are particular cases in point. Each such development concept should flag spatial use and spatial hierarchy. This hierarchy should be evident as concepts, principles and foreshadowed specifics at the DA stage, to be followed by detail submitted throughout relevant aspects of design documentation.

The DA stage and design documentation architecture (and engineering) of vehicle or pedestrian corridors, commercial, retail, recreational, institutional, and residential precincts is as important

as the architecture of the buildings that will eventually occupy those precincts. One without the other contributes to a sense of territorial confusion where territorial clarity is required.

Geason and Wilson (1989:5) claim that well designed housing projects make it clear which spaces belong to whom – some being completely private, some being shared and some public. Architects and developers of course claim that these aspects are always part of concept design, master-planning and detailed documentation. The difference is that they are seldom designed to standards or principles aimed at repelling crime.

A 2.5   The Concept of Surveillance

Spatial design should maximise opportunities for surveillance – formal and informal. The design principle here is to increase the number and length of sight lines; the capacity of people and technology to observe movement and activity at distance.

The location, mass, height, proximity and form of buildings therefore become critical design features. The relationship of buildings to all open spaces and to roads, pathways, cycle-ways, parks and other streetscape forms is equally critical.

There are three agreed forms of surveillance that should be encouraged: *natural, social and technological.*

Natural surveillance encourages casual observation and monitoring of all users and owners of known and defined urban space.

Social surveillance encourages casual observers, through natural surveillance, to routinely monitor, challenge or report suspicious pedestrian and vehicle movements through precincts or into buildings.

Technological surveillance employs CCTV and other monitoring devices to alarm premises or spaces to deter/detect and respond to unlawful access or unlawful behaviour. In the past, analogue CCTV surveillance technology consumed personnel resources including managing the recording, e.g. replace tapes of these early systems. Network cameras and network video recording (NVR's) offers a more cost-effective alternative. Modern fast moving 'dome' cameras, which respond to alarm pre-set positions can be utilised. The 'alarm' may be a help call button being activated, a secured door being opened (using a door contact) or movement (using a passive infrared detector) and transmitted real time to wireless hand held technology.

A 2.6   The Concept of Access Control

Debate continues about ways to control, restrict or prevent access to buildings and to open precincts. The deployment of technology has been the recent favoured design strategy. This (in our view) over-reliance on technology has tended to limit creative physical design alternatives.
In the mid-1980s a significant study was carried out in the UK into some of England's (often referred to as) notorious or infamous housing estates – high and medium rise ghettos where crimes against property and people has been running rife. Later studies have support these claims.

The point of all physical (built environment) design from a crime perspective is to define and indicate purpose. For example a gate to a property must be positioned to indicate whether or not it is a main entry and, if so by signage, mechanical, electronic or other means, entry is generally allowed or is by permission only. A gate's design and integration with a fence or adjoining building gives some indication of who and how entry is to be gained.

While gates (and similar barriers) present as recognised objects for territorial definition and separation, crime prevention-by-design principles encourage broader and less intrusive definitional architecture; architecture which not only restricts or halts access, but which encourages entry, access and movement. Lighting, pathways, landscaping, low-line fencing, steps and doorways are obvious examples.

By applying crime prevention design principles to housing estates, to commercial, institutional and industrial complexes, to retail and recreational outlets and to transport infrastructure, there is more than one opportunity to clearly define appropriate entry and movement corridors.

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