

ANNEXURE 16

SAFETY GUIDELINES

Table of Contents

1	INTRODUCTION	3
1.1	Scope and purpose of guidelines	3
1.2	Structure of the Guidelines	3
1.2.1	Part 6	3
1.2.2	Residential 8 zone CPTED criteria	3
1.2.3	Centre Plans	4
2	UNDERTAKING A SAFETY ASSESSMENT	5
2.1	Obtaining further advice	6
3	BACKGROUND	6
3.1	Safe design	6
3.2	CPTED concepts	7
3.3	CPTED and the Resource Management Act	8
3.4	CPTED within the District Plan	9
4	GUIDELINES	10
4.1	Informal surveillance	10
4.2	Clear Visibility of Building Entrances and Public Spaces	17
4.3	Lighting	25
4.4	Clear definition of space	29
4.5	Entrapment spots	31
4.6	Control of public access to private areas such as lobbies and carpark	33

1 Introduction

1.1 Scope and Purpose of guidelines

These guidelines are a non-statutory resource management document which have been developed to provide guidance on how to comply with the objectives, policies and assessment criteria for safety contained in the Isthmus section of the District Plan. These guidelines will be of use to both designers preparing concepts and detailed plans for developments, as well as to Council staff involved in assessing and reporting on resource consent applications.

1.2 Structure of the Guidelines

Part 6 of the District Plan requires consideration of safety for particular activities, and these guidelines have been principally designed to help apply these provisions. Safety issues also arise in the Residential 8 Zone as well as Centre Plans prepared in accordance with Part 8 of the Plan. These guidelines can also assist in the application of these provisions.

1.2.1 Part 6

Part 6 of the District Plan contains specific assessment criteria which certain proposals are to be assessed against with the purpose of achieving a safer environment in the city. Those activities requiring an assessment against the safety assessment criteria are identified throughout the Plan.

These guidelines are structured around the criteria from the District Plan. Each of the assessment criteria are listed separately, with guidelines following. The guidelines seek to give specific direction for complying with the criteria, however, if for a particular situation or type of activity there is no guideline given, then the Part 6 criteria still need to be applied.

For some of the Part 6 criteria, the guidelines are organised by particular types of activities and developments (residential developments, plazas, through-site links, for example). For other criteria, general guidelines are set out and their relevance to particular development proposals needs to be considered on a case-by-case basis. In many situations, design responses other than those set out in these guidelines may be appropriate, provided that they meet the provisions of Part 6 of the Plan.

Consideration of the matters set out in Part 6 involves lighting and signage issues. In general, lighting and signage are dealt with by the Auckland City Council bylaws, however, for some situations, it may be necessary to go further than the bylaw requires to ensure compliance with the Part 6 assessment criteria. Guidance on these matters is included in these guidelines.

1.2.2 Residential 8 zone CPTED criteria

Safety (CPTED – crime prevention through environmental design) criteria are incorporated into the Residential 8 zone. To assist with the application of the CPTED criteria of the Residential 8 zone, the criteria are listed below along with the particular section of these guidelines that should be referred to in order to obtain guidance in the application of these criteria.

When assessing an application for a new development in the Residential 8 zone, account is to be taken of:

- (a) *Whether the main entrances and exits of buildings are clearly visible from the street.*

Refer to section 4.2 of these guidelines.

- (b) *Whether potential concealment and entrapment areas (where people can hide) are avoided, or illuminated if they are unable to be removed.*

Refer to section 4.5 of these guidelines.

- (c) *Whether buildings are designed to overlook public spaces and streets to provide passive surveillance of these areas.*

Refer to section 4.1 of the guidelines.

- (d) *Whether the site layout, buildings, fences, landscaping and other features clearly define territory and ownership of all public, semi-private, and private space (e.g. dwellings and private open space) to discourage illegitimate entry and use of these spaces.*

Refer to section 4.4 of the guidelines.

- (e) *Whether appropriate lighting is provided to all pedestrian paths between public and shared areas, parking areas and building entrances.*

Refer to section 4.3 of the guidelines.

- (f) *Whether site access and car parking are clearly defined, appropriately lit, and visible.*

Refer to section 4.2, 4.3 and 4.4 of the guidelines.

- (g) *Whether landscaping, fencing and other structures present a security risk by screening doors, windows and pedestrian routes.*

Refer to section 4.1 and 4.2 of the guidelines.

- (h) *Whether individual buildings are clearly identifiable by visitors and emergency vehicles.*

Refer to section 4.2 and 4.6 of the guidelines.

1.2.3 Centre Plans

Some of the existing Centre Plans also contain safety criteria, for example the Parnell Centre Plan. These guidelines will be useful in applying and determining compliance with the safety criteria in such Centre Plans.

2 Undertaking a safety assessment

These guidelines should be taken into account throughout the development process, starting as early as possible. Some of the principles included here apply to the way in which developments relate to their surrounding land uses. Therefore, it is important that at the very beginning of the planning of a development, matters such as site layout and the relationship of the development to the surrounding area take safety design guidelines into account. Similarly, throughout the detailed design of buildings and areas of open spaces around them, these principles must also be incorporated.

To achieve a safe environment, all of the guidelines must be taken into account but a balance must be applied depending on site specific location. The designer and developer should apply the guidelines based on the physical and social context, and the relative need to apply guidelines to achieve the balance.

The Safe Cities Committee of the City of Toronto¹ suggests a number of useful questions that should be asked before a development application is lodged:

- *What kinds of concerns have come up when similar developments have been proposed in the past?*
- *What kinds of solutions were developed?*
- *Who are the usual users?*
- *What might their concerns be?*
- *How might they be consulted?*
- *How might the building or open space be used during the day?*
- *How might it be used in the evening?*
- *Has the architect explicitly addressed the issue of evening use?*

The assessment should also be undertaken to the level of detail that fits the circumstances of the proposal. Large-scale developments with large areas of public and semi-public space will require a comprehensive assessment to be undertaken. Smaller development proposals may not generate the same level of need for such a detailed assessment as the issues are likely to be less complex. As such the detail of the safety assessment will be dependent largely on the scale and/or location of development activities.

For larger projects a detailed crime risk assessment may be required first to assess the degree of risk and to determine the type and level of CPTED intervention that may be necessary. The process used for this assessment may involve the following steps:

- evaluation of the likelihood of crimes (statistical probability), and the consequence (crime outcome),
- distributions of reported crime (hotspot analysis),
- socio-economic conditions (relative disadvantage),

¹ Safe Cities Committee of the City of Toronto and the City of Toronto Planning and Development Department, *A Working Guide for Planning and Designing Safer Urban Environments*. City of Toronto, 1992.

- mapping situational hazards and crime opportunity.²

2.1 Obtaining further advice

Further advice on complying with the guidelines can be obtained by making an appointment with a planner at Auckland City Environments (ACE), ph. (09) 379-2020.

3 Background

3.1 Safe design

Under the Resource Management Act 1991 (RMA) local authorities and persons acting under the Act have a statutory obligation to achieve the purpose of the Act, which is “...to promote the sustainable management of natural and physical resources”. The Act defines sustainable management to mean “...managing the use of natural and physical resources in a way or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety...”.

One way of providing for the safety of people and communities is to encourage the use of techniques, in the design of the built environment, that reduce the opportunities for crime to occur.

It has been established through research that environmental design can be used to enhance urban safety, including perceptions of personal safety. For example, if an area is perceived to be safe then people will use that area. A safe urban environment has both social and economic benefits.

“A high level of lawful street activity helps inhibit anti-social behaviour and increases the multiplier effect and economic vibrancy of the business community.”³

Design of buildings and public/semi-public spaces to reduce the opportunity for crime is therefore critical to the social and economic vibrancy of a city.

The relationship between the design of urban areas, the perception of an area as safe and the incidence of crime has been the subject of many studies looking at the decline of urban areas both overseas and in New Zealand. Although the likelihood of a person being attacked or otherwise being the victim of crime may be relatively small, if an area is perceived to be unsafe then the reality is that people will be less inclined to visit or use that area.

If someone has the intention to commit a crime, then environmental design can reduce the actual or perceived “rewards” of committing the crime, for example, by increasing the likelihood of detection and interruption. The result of this is that if people do not use an area, it will become less safe. One reason for this is that less informal surveillance occurs and a sense of security does not develop.

While specific detailed features of the built environment do not cause crime, they do provide the setting for its occurrence. The detail of that setting can promote or inhibit criminal activity. The detailed physical features of a specific locality may affect the likelihood of certain types of crime occurring in that setting.

² From Safer by Design manual, New South Wales Police Service, 2001.

³ The Citizens Crime Commission of New York City and The Regional Plan Association *Downtown Safety, Security and Economic Development*, Downtown Research and Development Centre 1985, page 14.

Some crimes may occur simply because a willing offender is presented with the opportunity to carry out a crime. However, generally crime is carried out by people who already have a criminal intent. If someone intends to commit a crime, they usually choose conditions that offer the greatest chance of getting away with it undetected.

There is evidence that a number of specific physical design or environmental characteristics are relevant to:

- increasing the offender's perceived and real risk of being caught
- increasing the technical difficulty of committing a crime
- reducing both attempted and successful crimes
- increasing people's perception of their personal safety and security and reducing their fear of crime.

For further information on CPTED, refer to the Auckland City Council booklet 'Introduction to CPTED Crime Prevention Through Environmental Design', (October 2001). This booklet is also available on Council's website.

3.2 CPTED concepts

The objectives, policies and assessment criteria set out in the District Plan relating to safety are based on four overlapping CPTED concepts:

Informal surveillance (sometimes referred to as natural or passive surveillance)

Informal surveillance relies on the design of spaces and buildings that encourage the residents and users of an area to police that area, by providing for them to clearly see and survey the surrounds while they go about their business. This is dependent upon high quality design and the activities that attract people to an area so that the area is well used. The more users there are the more informal surveillance there will be. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance, as the chances of interruption or detection are high. People feel safer in public areas when they can easily see and interact with others.

Natural access control

Natural access control refers to physical design which restricts, encourages and channels the movement of people into, out of and within particular areas. It can be used to decrease opportunities for crime by denying access to areas where crime may be easier to undertake and by creating a perception of risk for would-be offenders. This is achieved by designing streets, footpaths, building entrances and entrances to developments to clearly indicate public routes and discouraging access to private areas.

Natural access control also includes designing for locational awareness and legibility. This involves giving people choice and control as they move through the urban environment, by providing adequate lighting, signage, clear sightlines, avoiding predictable or unchangeable pedestrian routes/paths (movement predictors) and avoiding entrapment spots (where people can hide). This leads to enhancement of the perception of safety in the urban environment.

Territorial reinforcement

Physical design can personalise, claim and mark space. Users develop a sense of guardianship of the space, which in turn discourages potential offenders. Territorial reinforcement is promoted by features that define property lines and distinguish private spaces from public spaces with the use of features such as landscape plantings, pavement designs, entranceway treatments and low fences. Territorial reinforcement is contributed to

by informal surveillance, natural access control, and the strategic use, placement and timing of activities.

Space management

Space management ensures that space is appropriately utilised and well cared for. Vandalism can be reduced by the use of sturdy materials, and speedy and careful maintenance and repair.

The first three principles have the most relevance to development proposals under the District Plan. The fourth principle listed above (space management) generally refers to how public open spaces are managed, and therefore is an issue best dealt with through instruments such as Reserve Management Plans, Council-managed contracts for the maintenance of public places, body corporate management arrangements, commercial building managers as well as through mechanisms such as Council's Events policies and support for Mainstreet type programmes for business associations.

3.3 CPTED and the Resource Management Act

CPTED principles need to be considered for inclusion into District Plans as District Plans are an important influence on the design of the built environment – both private and public elements. CPTED is particularly concerned with the relationship or interface between private development and the public environment, as well as the layout and design of private developments.

While CPTED could just be applied to public spaces like squares and streets, rather than private development, such an approach is unlikely to deliver many of the benefits of CPTED in terms of reduced crime and enhanced feelings of safety. Research has shown that the prevention of crime within private spaces and developments benefits greatly from the application of CPTED principles. For example, lower rates of crime (such as burglary) result from visibility between residential activities, i.e. dwellings facing other dwellings.

There is however a higher risk of crime when dwellings are adjacent to areas such as open space or walkways and these areas are either unoccupied or have low volumes of users. For mixed use developments, higher crime rates are associated with back accessways to residential above retail activities. In addition, a greater risk of crime results from easy access into residential developments/complexes.

Private development also has a vital role in supporting feelings of safety in public spaces.

- ® Important to the safety of public places is how private development 'faces' these places. Commercial pressures can mean that private development sets itself back from street edges – behind rows of car parks, or increasingly behind high walls. Architectural fashions can see development conceived as a stand alone building designed without relationship to its context i.e. a tower in space.
- ® Many trends are also seeing a blurring of the traditional role that private development has played in making public spaces safe and attractive. Trends such as the development of semi-public spaces like plazas, large foyers in office buildings and through-site links and large car parking areas (especially in front of developments) have created spaces that are part-public, part-private. CPTED principles need to apply to these semi-public areas as the application of CPTED to only public places could quickly displace crime to these semi-public areas.

These types of relationships see many of the traditional methods of 'policing' of public space break down:

- there are no eyes on the street from the surrounding development, ready to report crime if they see it

- public spaces do not have an identifiable edge, with the opportunity for criminals to exploit this blurring
- entrapment points are created
- vegetation and discontinuous building facades allow offenders to avoid detection
- without a hard edge to public spaces there are likely to be multiple routes for criminals to evade capture through private property.

At the level of the RMA 1991 there can be no doubt that safety is a relevant issue to be considered by District Plans. Section 7(c) of the RMA, "Other Matters", requires that particular regard be had to *the maintenance and enhancement of amenity values*". Amenity values are defined in the RMA as:

"those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes".

While safety is not directly mentioned in this definition (unlike in section 5 of the Act), it is clearly a matter that is integral to whether people feel that a place is pleasant.

3.4 CPTED within the District Plan

Within the District Plan, the focus of CPTED is on the interface between public and private spaces and the layout and design of private developments.

These guidelines in part deal with the small-scale elements at the front of buildings and in the intervening spaces between buildings, i.e. the semi-public/semi-private area surrounding buildings. Such spaces have been termed the public/private interface. These guidelines also seek to demonstrate how CPTED can be used to reduce crime in semi-private and private areas.

To promote the perception of safety and reduce opportunities for crime to occur, the public/private interface and private developments need to be designed to discourage crime and enhance the perception of an area as safe.

The prevalent issues for the public/private interface areas are those of surveillance and ownership of the space. These are also important for private developments. Spaces in or around buildings need to be designed to allow for incidental surveillance and to promote a feeling of guardianship of the space by the users and residents of the area. If the people using and living in an area feel that they are guardians of the interface areas, then they are more likely to take responsibility for, and use those areas. If the design of areas provides for incidental surveillance then people using the area perceive the area to be safe. This in turn discourages criminal behaviour as it increases the likelihood of being observed and creates an impression that the area is being watched.

Building features in interface areas and those within private developments such as forecourts and foyers, provide visual cues, creating the impression in normal users and observers that the area is safe. Activities in interface areas such as cafes and retailing enhance ownership and need to be encouraged. Interface areas should be well lit, attractive spaces that can be observed, or give the impression of being observed, by surrounding buildings and activities.

Conversely, spaces such as recessed doorways, blank facades and poorly lit service lanes discourage anyone taking responsibility for these areas because the ownership of them is poorly defined. This discourages public use of these areas.

In addition, for private developments, controlling access to areas within the development is a further way in which CPTED is used to reduce opportunities for crime to occur. Clearly defining those areas which are private through signage, landscaping, paving and so on will indicate that an area is private and that the risks of committing crime are high.

4 Guidelines

4.1 Informal surveillance

Informal surveillance is the casual observation of activities and people in public and semi-public spaces by other people engaged in legitimate activity. Such observation may occur from inside buildings. The placement of windows and doors, particularly at ground level, is important to enable informal surveillance to occur, as is the location outdoors of people and activities relative to those wall openings. Alternatively, the casual observation may be from outside, with people on the street informally keeping an eye on the street and the people using it.

District Plan Criteria:

"Provide for informal surveillance of public and semi-public areas within and adjacent to the development including streets, parks, plazas and through-site links where practical, by:

- locating doors, windows and other openings associated with living and working areas, so that they overlook and interact with the public and semi public areas, and*
- ensuring that walls and fences at the street edge have sufficient transparency or are of a low enough height to allow informal surveillance to occur, and*
- avoiding blank, windowless street level facades of buildings through the placement of doors and windows and by encouraging a mix of activities, and*
- that fences or walls which could attract graffiti be avoided, or planted with creepers.*

Note: In situations where any conflict exists between the rules in Parts 7, 8, 9, 10 or 12 of the Plan, and the above assessment criteria, the merits of both the rule and the above assessment criteria should be weighed up to ensure that a good design solution, meeting both CPTED and amenity (including noise and visual) outcomes is achieved."

"Informal surveillance and clear visibility/clear lines of sight can be achieved through the location and design of the building, landscaping, fencing and other structures. A landscaping plan (showing plant species, locations, sizes at the time of planting, maximum sizes of plants/trees at maturity as well as the height of any tree canopy at maturity when measured from the ground level immediately below) may need to be provided as part of any resource consent application. The provision of this is dependent on the scale and/or location of the development proposed."

Guidelines:

Informal surveillance can be achieved as follows:

4.1.1 Residential

- Where possible, locate the windows of rooms which are used throughout the day and evening (such as kitchens and living rooms) so that they overlook the street, or public or semi-public spaces within the development. This ensures that a degree of informal surveillance of these areas is provided.
- To retain a visual connection between the development and the street, front fences should be kept low, below 1.2m in height. For residential developments that have their private open space on the street side of the development, semi-transparent fences which help to retain a visual connection between the street should be used. This will ensure a degree of privacy is achieved for occupants while still providing visibility out into the public space.
- In situations where residential buildings are located close to the road, a small change in height between the footpath and the ground floor level of the residential building (so that the

footpath is at a lower level) provides privacy for people within the building, while still allowing an outlook over the street from within the building.

- Use of second floor and upper storey balconies and decks that overlook the street (without encroaching over the street) can help to compensate for a lack of surveillance from the ground floor if site conditions mean it is difficult to design ground floor areas to provide surveillance of the street. Privacy between neighbouring balconies can be provided by using solid partitions.
- Where possible use bay windows and other forms of building projections to provide added surveillance of streets (note: to be located wholly within site).
- For 'long thin/narrow' sites where development has to be side-on to the street, the front unit should be positioned so that it fronts/faces the street (front door directly off the street, window(s) overlooking the street). This will ensure good surveillance of the street is provided and/or maintained.
- Landscaping in front yards needs to be carefully designed to maintain the visual connections between the street and the building (i.e so that sightlines from the ground floor level of the building to the street are provided and/or maintained). Such design may involve the use of low growing shrubs and plantings, and/or larger trees that have a high canopy. It may be necessary to provide Council with a landscaping plan showing plant species, locations, sizes at the time of planting, maximum sizes of plants/trees at maturity as well as the height of any tree canopy at maturity when measured from the ground level immediately below.
- Rear lanes for access to on-site parking areas and communal open space areas that are to the rear of buildings and which are not visible from public streets need to be avoided. The exception to this is where access to these areas can be controlled (eg security controlled gates) and windows/balconies of surrounding development face these areas to encourage informal surveillance of them.

4.1.2 Business and Mixed Use Activities

- To encourage activity at street level, retail and business activities that are open all day and into the evening should be located on the ground floor. Even if a continuous frontage of activities opening out onto a street is not possible, then clustering one or two ground floor units by the main entrances or prominent corners will help provide some activity at street level.
- Where commercial development has to be set back from the street edge to accommodate on-site parking in the front yard area, the car parking area should be kept to one row in depth. Where more car parking rows have to be provided, then part of the building should come close to the street edge. This set-up will still allow informal surveillance of the street to be maintained.
- Developments involving on-site public spaces should include:
 - a variety of uses;
 - provision for a number of smaller activities at street level as opposed to fewer larger activities.

To encourage activity, spaces for public use should provide public facilities such as seating and information signage (hours of operation, location etc).

- On busy main roads where ground floor living may not be practical, and retail activities are not possible, small work spaces for home occupations can help to provide surveillance (provided that other planning controls can be met).
- Service areas and rear parking areas behind buildings that are not easily visible from public roads should be fenced off or otherwise controlled to restrict public entry to them.

Examples of good informal surveillance:

Balconies overlooking the street and solid but low walls separating front gardens from the street.



Windows looking onto street, including at ground level.



Semi-transparent fences along frontages and balconies overlooking the street

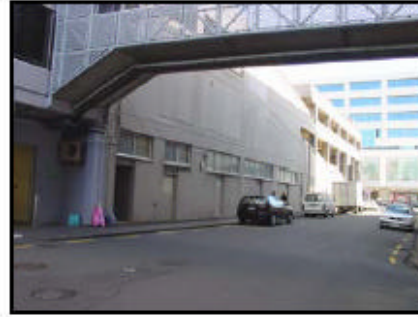


Examples of poor informal surveillance: (situations/developments to avoid):

High solid wall along street frontage.



Blank façade at street level and above.



Car parking along street frontage with townhouses



Backs of buildings and service lane hidden behind high solid fence, blocking views from surrounding activities.



4.1.3 Parks

- Surrounding (or adjoining) reserves with streets ensures that houses will front the park, providing surveillance of the park. The presence of people and motorists in the street provides an additional sense of security. The streets need to be designed to slow traffic speeds. Where street frontage cannot be provided, accessways to properties need to be designed so that dwellings can front the public open space.
- Obstructions such as high solid fences and walls need to be avoided around the perimeter of the park, wherever possible so that surveillance into the park is enhanced. High solid walls and fences can also be a target for graffiti and can give a less attractive appearance to the park.
- The design of the park, landscaping and structures within it need to provide for surveillance across and within the park as much as possible (i.e. clear sightlines).

Note: The above guidelines relating to parks are to be considered and applied on a case by case basis in recognition of the wide range of parks and their different functions within the Isthmus.

Examples of good informal surveillance:

Park adjoins street and clear views into park are available.



Clear sightline from beginning of path to end.

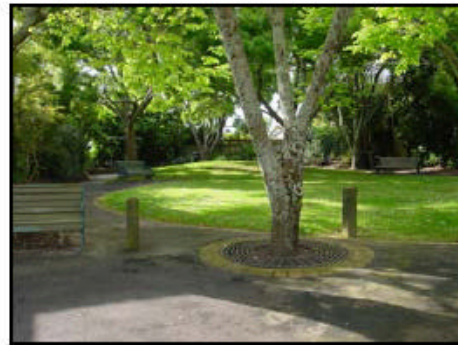


Examples of poor informal surveillance:

House is blocked from view of park by high wall.



Reserve is surrounded by high fencing along three sides and has little natural



The walkway through this park goes through an isolated area and is not overlooked by other activities.



Houses front onto park with low or s fencing, however higher risk of break-backyards adjoining the park.



4.1.4 Plazas

- Plazas are safest when they are fronted by activities such as shops, cafes, balconies or residential accommodation.
- Plazas should be located along key pedestrian routes to help generate movement through them, and as a result, informal surveillance occurs.
- Activity generators which will attract other uses and people should be provided, for example food kiosks and seating. However, visual clutter such as signage etc needs to be avoided where this could obscure sightlines.
- In situations where fronting activities cannot be provided and site conditions limit visibility into the plaza from adjacent streets (such as on sloping sites), then plazas need to be avoided.

Examples of good informal surveillance:

Both of these plazas are overlooked by many other activities and are on important pedestrian thoroughfares.



A café with outdoor tables along one side of this plaza, and seating along the other, provide high levels of informal surveillance.



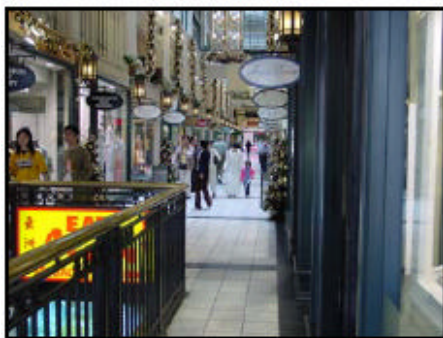
4.1.5 Through-site links

- Through site links work best when activities are located adjoining and/or alongside the through-site links. They should be avoided where it is not possible to provide activities adjoining or alongside the through-site link route.

- Closure of through-site links to night-time use is recommended if adjoining activities are closed at this time.
- Through-site links need to be sufficiently wide and straight so as to provide clear visibility for pedestrians and they need to be well lit, with clear end points.
- Any change in grade of the through-site link needs to be avoided as this could obscure lines of sight.

Examples of good informal surveillance:

These through-site links have activities right along the length of them and are able to be closed off at night.

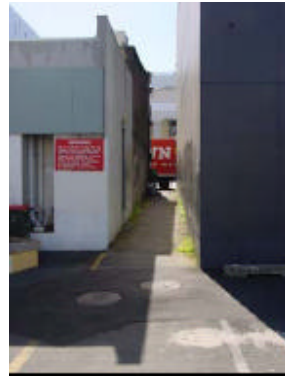


Shops with glass frontages along the sides of this through-site link provide high levels of informal surveillance.

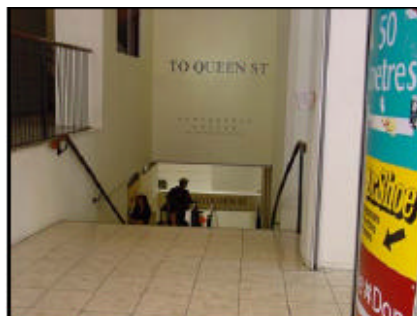


Examples of poor informal surveillance:

These through-site links have blank walls along their length and are not able to be closed off at night.



A change of grade obscures lines of sight in this through-site link.



4.1.6 Underpasses and Overpasses

- Use of these should be avoided. Where they are absolutely necessary, activities need to be located along the route to increase their safety.
- Activities should be located at the entrance and exit of underpasses and overpasses.
- Underpasses and overpasses need to be secured/closed off after the hours of darkness.
- Underpasses and overpasses need to be designed and constructed to achieve wide approaches, good through visibility/clear sightlines, good lighting and be within view of passing pedestrians and vehicles.

4.2 Clear Visibility of Building Entrances and Public Spaces

Clear visibility of entrances into buildings, and public and semi-public spaces within developments reduces the opportunity for crime. Visibility relates to the ability to see and to be seen.

The presence of people encourages acceptable standards of behaviour in public places and therefore makes people feel safe. Clear visibility of an area also increases the perception of an area as being safe and may encourage use.

Carparking buildings and carparking areas can have low volumes of usage during some parts of the day. This can cause feelings of isolation and vulnerability. Carparking buildings are often not subject to informal surveillance due to their underground location or multi-level design. As there is the potential for people to become disoriented when exiting or re-entering, there is a need to provide signage and lighting (refer lighting guidelines) to assist people to quickly and easily exit from the carpark and to relocate their car again upon returning.

District Plan Criteria:

“Provide for clear visibility/clear lines of sight:

- *of building entrances and exits from the street, and*
- *from public areas into and through public and semi-public areas in the proposed development, such as plazas, landscaped areas, through-site links, lobbies and carparking areas which are available for use or accessible by the general public.*

Informal surveillance and clear visibility/clear lines of sight can be achieved through the location and design of the building, landscaping, fencing and other structures. A landscaping plan (showing plant species, locations, sizes at the time of planting, maximum sizes of plants/trees at maturity as well as the height of any tree canopy at maturity when measured from the ground level immediately below) may need to be provided as part of any resource consent application. The provision of this is dependent on the scale and/or location of the development proposed.”

Guidelines:

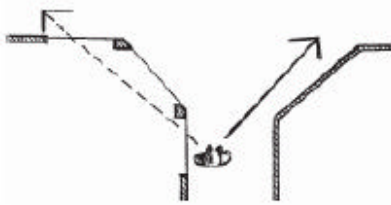
Clear visibility of building entrances and exits can be achieved as follows -

4.2.1 Entrances to residential and non-residential developments

- Main building entrances and exits should face, and be clearly visible from the street or be otherwise overlooked from occupied public space or adjacent buildings. Recessed entranceways that are down lanes or accessways, or side on to the street with no other or very limited surveillance need to be avoided.
- The design of entrances and exits need to enable visibility between the street and the entrance or exit, through the use of corner splays, widening or views through glazing.
- Landscape planting should not obscure sightlines to and from building entrances and exits. This may involve the use of low growing shrubs and plantings, and/or larger trees that have a high canopy. It may be necessary to provide Council with a landscaping plan showing plant species, locations, sizes at the time of planting, maximum sizes of plants/trees at maturity as well as the height of any tree canopy at maturity when measured from the ground level immediately below.
- Secondary entrances to common car parking areas where access is not controlled should be located where there is surveillance from adjacent activities.
- Building entrances and exits need to be well lit, and where necessary to ensure easy identification, need to be clearly sign posted.

Examples of good visibility:

Corner splays and glazing to improve sightlines.



The entrances to these toilets are clearly visible from the street.



Examples of poor visibility: (situations/developments to be avoided)

The entrance to this building is at the side of the building away from street.



Toilet block with entrance at rear of building beside a driveway.



There is poor visibility from the street to the main entrance to this residential unit.



4.2.2 Clear visibility of public and semi-public areas within developments can be achieved as follows –

- If the area within the development is not to be closed off at night then the development needs to be designed so that the public or semi-public area is easily visible from outside the development.

- Visual clutter and obstructions to views (such as signs and vegetation) which can obscure or confuse sight-lines need to be avoided.
- More than one entrance/exit to public and semi-public areas within developments needs to be provided where possible, and these are to be clearly identified where possible with signage. This reduces the level of predictability of people's movements.
- Signs need to be arranged where practicable to avoid obstructions and visual clutter eg. by grouping together, or fixed to existing structures rather than freestanding poles.
- The design of through-site links needs to make the destination clearly visible or clearly obvious (using signs / paving).
- Landscape planting in public spaces and along road frontages needs to be designed and maintained to be low level and/or at a higher canopy level so as not to restrict a clear view of the surrounds.
- Barriers along pedestrian routes need to be low and/or semi-transparent to maintain clear visibility.
- Where proposed as part of any development, public waiting or seating areas need be clearly visible from public spaces, specifically those which are well used/occupied areas. Likewise, the surrounding area should be clearly visible from any public waiting or seating areas.
- Where there are very physically confined routes such as overpasses or underpasses, the entrances and exits to such routes need to be located where they are overlooked by other activity areas (e.g. balconies, bars, cafes, shops).
- Development (retail activity, cafes, balconies, public facilities) needs to overlook public areas where at all practicable.
- Where obstructions or barriers are in use or are proposed within streets or other areas, pedestrian movement areas need to be set out/designed to allow for sufficient pedestrian movement (ie that the path is wide enough). Barriers such as bollards and railings should only be used where there is sufficient space left for pedestrians.
- Public facilities such as ATM's and phones need to be located in well lit areas, away from recessed entrances/exits. They should be located near busy streets and pedestrian routes or public areas.

4.2.3 Escalators and travelators

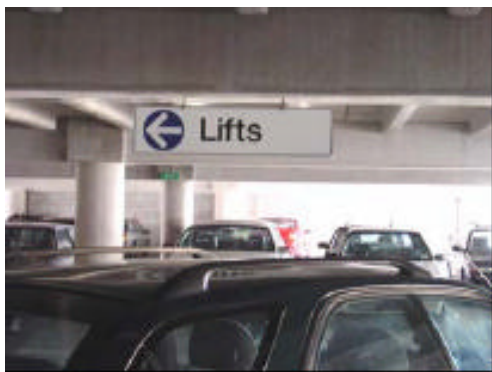
- Escalators and travelators should only be used in spaces providing maximum visibility between areas, levels and surrounds, using such measures as clear balconies, sight-lines from approach paths, wide approaches, and a spacious perception of the area they are provided within.
- Escalator levels need to be overlooked by other spaces/activities and likewise activities need to be located so that they overlook the route of escalators and travelators if there is one in the nearby vicinity.
- Provision of stairs and/or ramps in association with, and adjacent to, escalators / travelators is desirable as this provides alternative routes and more space.

4.2.4 Carparking areas and buildings

- There needs to be a clear visible area (such as a driveway) between a pedestrian route and any car parking areas to minimise areas which afford hiding places or entrapment opportunities. Such an area needs to be unobstructed by parked cars.
- In the case of any multi-level, above or underground carparking, consideration needs to be given to the installation of monitoring (i.e. areas constantly viewed while the facility is open) and camera surveillance of lifts and stairwells in addition to the carparking areas. Signage needs to note/acknowledge that the area is under video surveillance.
- Within carparking areas, the use of landscaping should be restricted to low growing shrubs and/or trees with a high level canopy so as not to restrict views across the carpark and so as not to provide concealment opportunities.
- Informational signage needs to be provided which clearly identifies the hours of operation of the carparking area or building, and clearly indicates where all entry/exit points are located.
- Car park areas should be located so that they are easily visible from nearby buildings as well as main traffic and/or pedestrian routes.
- Facilities that generate pedestrian activity need to be located adjacent to carpark areas where possible.
- Keep open broad lines of sight into and across the carpark, by the appropriate design of walls, fencing, landscaping etc.
- Locate the pedestrian entrances into the carpark at street level in high activity areas.
- Design clear sight-lines into/within car parks by eliminating visual barriers and remove billboard signs and/or other obstructions that may block sight-lines/views.
- Pedestrian entries/exits to the street need to be clearly identified (including illuminated if appropriate) so that they are visible from all areas within the carpark (or a car park level if a multi-storey car park building).
- Different levels and areas should be clearly marked so that the area where a car has been left can be easily located when the owner returns.

Examples of good visibility:

Large signs visible from some distance away



Café terrace overlooks carparking area.



Example of poor visibility:

Exit from carpark with only a small sign, visible from only a short distance away.



4.2.5 Parks

- High use activities such as toilets, playgrounds and main pedestrian paths are best located where they can be seen from adjoining streets and houses, and in prominent places within the park.
- Avoid 'blind' corners within the park (ie those corners where a person is unable to see what is immediately around the corner/bend).
- Vegetation/landscaping needs to be located and maintained in such a manner so as to ensure clear sightlines around any public facility within the park (including toilets, playgrounds and paths etc).

Example of good placement of activities within park:

Playgrounds located close to busy streets with high levels of visibility into the parks.



4.2.6 Plazas

- Where it is impossible to ensure that plazas are fronted by activities, then they need to be designed so that the whole plaza is clearly visible from a busy street or another well-used public place(s).

Examples of good visibility:

This courtyard has a wide entrance and the majority of the courtyard can be seen from the adjoining streets.



The lobby of this building has a wide entrance to the street, separated by a glass sliding door. Can be closed off at night.



Courtyard with semi-transparent fence providing two-way visibility between it and the adjacent carpark.



Examples of poor visibility: (situations/designs to be avoided)

Dark narrow entrances into internal courtyard areas which cannot be closed off to the public at night.



Lines of sight into carpark are obscured.



Poor placement of ATM next to recessed doorway (potential entrapment spot).



4.2.7 Through-site links

- Clear sight-lines from beginning to end should be provided or through-site links are to be clearly sign posted/lit at mid points, avoiding recesses / potential entrapment spots.
- Through-site links need to be clearly identified at either end by signage showing the destination(s) that will be reached.
- The design of a through-site link should make the destination easily visible or otherwise clearly obvious to create the idea of the preferred route, e.g. through the use of signs or paving.

- Stairs, escalators and changes of grade which will inhibit clear sight lines are to be avoided.
- If it is not possible to avoid changes of grade, then any change of grade needs to be arranged to allow for the greatest visibility of the route from both directions of travel.
- The light level along the route should be adequate and even and should avoid instances of back-lighting, glare and shadows which would make visibility or recognition of others difficult. Refer also to the lighting guidelines (see section 4.3).
- Informational signage should provide a clear identification of the hours of operation, and indicate where the entry/exit points are located.

This link does not provide clear views along its length and there is no informal surveillance from other activities.



4.2.8 Transport facilities

- Where possible, signage needs to be provided to convey information about facilities which assist with public safety, e.g. public transport information, hours of operation.

4.3 Lighting

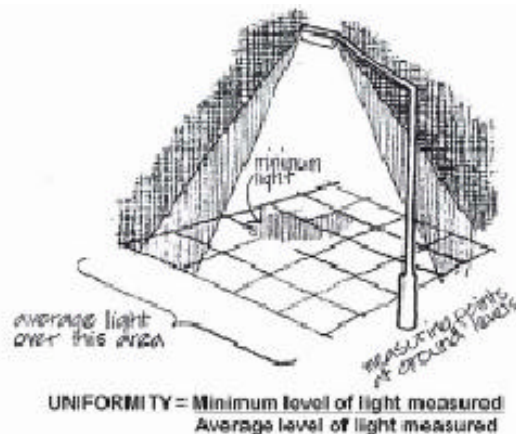
In general, Council's control on lighting in the District Plan and Bylaws, is limited to preventing excessive lighting and glare from illuminated advertising signs and from lighting on private land; and preventing spill of that lighting onto roads and properties with a residential use. Council provides lighting to roads, parks, squares and other public places. However, in some circumstances, additional lighting may be required to address safety concerns. Good lighting after dark is essential to allow people to see and to be seen. Illumination and visibility will allow kerbs, footpaths, street furniture and surface imperfections to be seen and will reduce people's fear of crime. When combined with other anti-crime measures, well-designed lighting may also prevent crime. By increasing visibility, lighting:

- Makes possible the formal and informal surveillance of urban public space and relevant publicly accessible parts of buildings;
- Reduces the opportunity for criminals to conceal themselves;
- Encourages people to use places rather than keep out of them;

- Lessons the dangers of accidents in well-lit areas.

Carefully designed lighting can not only reduce the opportunity for unobserved crime, it can help our urban public spaces become more useable at night.

The New Zealand /Australian Standard lighting standard AS/NZS1158.3.1: 1999 (Performance and installation design requirements) is the reference document used to ensure the appropriate design, placement and quantity of lighting in areas accessible to the public. It may be necessary to seek advice from a suitably qualified lighting engineer to meet the requirements of this standard and in some instances Council will require a detailed lighting plan to be submitted as part of any required resource consent application.



District Plan Criteria:

"Provide appropriate lighting of public and semi-public areas, including paths, parking areas, plazas, building entrances and exits. Details of, or a lighting plan showing, lighting type, location and lux may need to be provided as part of any resource consent application. The provision of this is dependent on the scale and/or location of the development proposed".

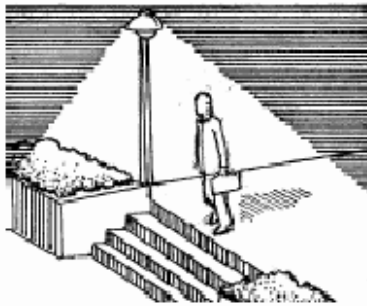
Guidelines:

4.3.1 General – lighting should be provided as follows:

- The lighting design should achieve a uniformity of light that is relatively high so that ground surfaces are evenly lit and the perception of the space is one of overall light. This is achieved by having lights spaced evenly / at regular intervals to ensure consistent lighting levels.
- Where there are areas that have an abrupt change from high light to low light, complementary lighting should be added to provide a progressive transition of the light.
- Lighting in a public space should be adequate enough to identify another person while they are a 15 metre distance away.
- All recesses, entrances and egress points of areas should be well lit, as should the areas around these (where necessary).
- Lighting should not be provided where it may contribute to a false sense of confidence that an area is frequented by the general public or policed at night, for example external car parks which are not used at night.
- Preference should be given to fluorescent or metal halide (white) lamp sources in locations where night-time visibility is important.

- Lighting control gear needs to be situated in unobtrusive secure cabinets, or concealed within the light fitting, rather than attached to the surface or mounted in the base, in the case of a lighting pole.
- Excessive contrasts of light need to be avoided except where a visual statement is required (for example, highlighting a specific feature/item).
- Positioning of lights needs to allow access for maintenance and changing of lamps. A maintenance program should be developed to ensure continuity of light.
- Obstacles such as bins, planters, street furniture and changes in grade of the path which have to be negotiated by pedestrians are to be clearly lit.
- Lighting equipment needs to be vandal resistant in terms of material, design and location.
- Lights need to be designed to avoid over-lighting, glare and upwards spill lighting.
- Illuminate potential night-time concealment spaces if such spaces cannot be closed off and secured during the hours of darkness.

Corners and changes in level to be well lit.



Doorways to be illuminated.



4.3.2 Plazas and other open spaces

- All plazas and other open spaces that are not specifically listed below shall be lit to comply with the standards of lighting category P7 in table 2.2 of AS/NZS1158.3.1: 1999.
- Lighting design needs to be provided in such a manner so that over-lighting and high glare is avoided.

4.3.3 Street lighting

- Street lighting for pedestrians should be supplementary to the lighting for traffic.
- Increased illumination should be provided in shopping areas to make the use of these areas more appealing and to increase the perception of safety.
- Any footpath, walkways, lanes, park paths and cycleways adjacent to roads to be lit shall comply with the standards of lighting category P2 in table 2.1 of AS/NZS1158.3.1: 1999.
- Lighting under street verandahs shall comply with the standards of lighting category P7 in table 2.2 of AS/NZS1158.3.1: 1999.
- Where security cameras are in use, lamp sources should be metal halide (white) type rather than sodium (yellow) type, if colour differentiation is important.

4.3.4 Parks / open spaces

- The lighting should take account of present and possible future vegetation growth and avoid creating shadows that may be used for concealment.
- Light fittings should be located where they will not be obscured by growing trees or other impediments, or alternatively if a path is to be lit, vegetation may need to be pruned to accommodate light fittings.
- Potential concealment and entrapment areas need to be identified and designed out or where this is not possible they need to be illuminated.
- Lighting needs to clearly delineate the route through any vegetation/trees.
- Paths or spaces not intended for night-time use should not be illuminated, to discourage their use as it may contribute to a false sense of confidence that the park is frequented by the general public or policed at night. Lighting paths that have high adjacent vegetation may give a false impression that the area is well used in evening hours and portray a false sense of security.
- All footpaths, walkways, lanes, park paths and cycleways within parks shall be lit to comply with the standards of lighting category P1 in table 2.1 of AS/NZS1158.3.1: 1999.
- Consideration needs to be given to whether or not to illuminate corners, changes in direction and grade and intersections. A lighting engineer will need to determine what lighting is appropriate for a park/public open space area.
- Service buildings within park areas (such as toilets and public phones) for the use of the public after the hours of darkness, need to be illuminated during hours of darkness where appropriate.

4.3.5 Internal accessways

- All internal accessways (including accessways to carparks) and through-site links without stairs, shall be lit to comply with the standards of lighting category P6 in table 2.2 of AS/NZS1158.3.1: 1991.
- All internal accessways and through-site links with stairs, escalators and travelators shall be lit to comply with the standards of lighting category P10 in table 2.3 of AS/NZS1158.3.1: 1991.
- Recessed areas such as doorways and alcoves need to be illuminated where they are unable to be designed out or avoided.

4.3.6 Internal carparks

- All internal carparks shall be lit to comply with the standards of lighting category P11 in table 2.4 of AS/NZS1158.3.1: 1999. Designated parking spaces for people with disabilities or for prams shall be lit to comply with lighting category P12 of table 2.4.
- The control booths, ticket machines, and entry/egress points should have a higher level of illumination.
- All routes providing access to the carpark need to be well lit, paying particular attention to the pedestrian entrances/exits.
- Consideration should be given to painting appropriate walls and surfaces white (as this will work well with good lighting).

- Lighting should be used that enables the colour of cars and the interior to be easily distinguished / viewed.

4.3.7 External car parks

- All car parks shall be lit to comply with the standards of lighting category P11 in table 2.4 of AS/NZS1158.3.1: 1999. Designated parking spaces for people with disabilities or for prams shall be lit to comply with lighting category P12 of table 2.4.
- Lighting should be mounted on high masts or walls and directed to deter or detect criminal activity by producing a high vertical lighting component such that intruders are clearly visible.
- The control booths, ticket machines, and entry/egress points need to have a higher level of illumination.
- All routes providing access to the carpark need to be lit, paying particular attention to the pedestrian entrances/exits.
- Glare needs to be avoided by directing the lighting away from adjacent buildings and pedestrian facilities.
- Where the car parks are situated adjacent to footpaths or access routes, the adjacent area should be lit to allow clear visibility of any approaching threat.
- Lighting should be used that enables the colour of cars and the interior to be easily distinguished / viewed.

4.3.8 Vacant site

- The footpath perimeter of a vacant site needs to be lit for a depth of 15 metres into the site to allow recognition of an approaching threat in situations where the site is not secured off to the public.

4.3.9 Public waiting areas

- For public waiting areas (e.g. bus stops, taxi stands, rail stations, public telephones), the appropriate lighting level should be 30 lux with a minimum uniformity ratio of 0.5 within the immediate waiting area.
- Public waiting areas (e.g. bus stops, taxi stands, rail stations, public telephones) and approaches within 15 metres of those areas, shall be lit to comply with the standards of lighting category P7 in table 2.2 of AS/NZS1158.3.1: 1999.

4.3.10 Illuminated signage

- Safety and direction signage (both internal and external) need to be lit during the hours of darkness (see Auckland City Consolidated bylaw, *Signs*).

4.4 Clear definition of space

By creating semi-public areas from public spaces, or clearly indicating that areas are private, the perception of there being guardians (people taking responsibility) of these spaces is enhanced. This is known as “territorial reinforcement”. When territorial reinforcement is high, crime is reduced as there is a perception of risk for those who may have intentions of carrying out crime and a feeling that crime is more likely to be detected and responded to. For all other users, there is an enhanced perception of safety. In order to increase territorial reinforcement, visual cues (such as landscaping, signage, paving and lighting) should be used. In seeking to achieve clear definition of space, these guidelines are not intended to suggest that gated communities are appropriate.

District Plan Criteria:

“Provide clear definition between the boundaries of public, semi-public and private places through their design, layout and use of features such as lighting, landscaping, paving and signage.”

Guidelines:**4.4.1 A clear definition of space, conveying a sense of territorial reinforcement, can be achieved as follows:**

- Buildings should be used to frame public spaces, providing a clear 'edge' to the public area. The buildings should not create spaces that are unclear in terms of whether the space is private or public.
- Where buildings cannot form the edge between public and private development, fencing may be appropriate, provided it does not block sightlines. Fencing should be semi-transparent or low (if using a solid fence). Other features could also achieve this such as paving treatment, bollards, pergolas and planting (provided that sightlines are maintained).
- Design features such as signage, lighting, distinctive paving, help points, site maps, lawn strips, gardens, landscaping and tactile surfaces can be used and maintained within public spaces to help define where public areas stop, and private areas start.
- Where possible, design features such as gateway structures which are expressive of the entrances to public areas should be used.
- Entry points to communal areas in private developments such as high density housing should provide signage to indicate the private nature of the area (i.e. that it is for residents only) or other defining visual features or cues such as paving and/or landscaping. Communal areas in private developments need to be able to be closed off to non-residents.
- Signs should be provided which identify the agency responsible for monitoring an area, and how to report damage or any faults in maintenance.
- Provide signage to give direction to people to find safe routes and facilities and to indicate where the entry/exit points are located.

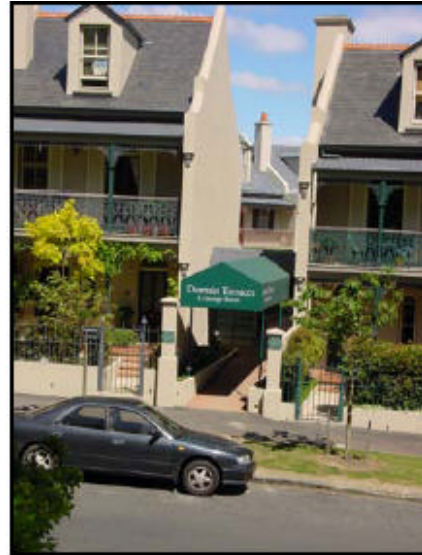
Note: signage provided must still comply with the provisions of the Auckland City Council Consolidated Bylaw.

Good definition of space:

Transition from public to private space
Entrance structure and signage.



Transition to private space defined
by change in surfacing and by
signage.



Poor definition of space:

*Washing lines located in areas which
otherwise appear to be public space.*



*No indication is given that semi-private
space is being entered. Street signs and
road surface are no different to the public
road system.*



4.5 Entrapment spots

Small confined areas, shielded on three sides by some sort of barrier, may be used by offenders to trap potential victims. These areas, known as entrapment spots, are often selected as the site for violent crimes against a person such as robbery, assault or rape. The physical enclosure of an entrapment spot is used by offenders to control their victims by inhibiting their opportunity for escape. Such areas often offer the opportunity for concealment during the commission of crime as they are also usually characterised by poor visibility from public space.

Potential entrapment spots are more likely to be used for criminal purposes and present a greater risk when they are near a public space or route, through or along which people are likely to be moving. A predictable or unchangeable pedestrian route/path is known as a movement predictor. The creation of movement predictors should be avoided where possible by providing for multiple exit and entry points to routes/paths. The safety of movement predictors can be enhanced by providing for informal surveillance from surrounding areas and clear visibility of and along the route/path.

District Plan Criteria:

“Avoid the creation of potential entrapment spots (which are small, defined areas generally shielded on three sides by a barrier of some sort such as a recessed entrance or a gap in tall vegetation) and areas which may isolate users of public areas from public view. Avoid recesses in external walls next to pedestrian routes / walkways / footpaths.

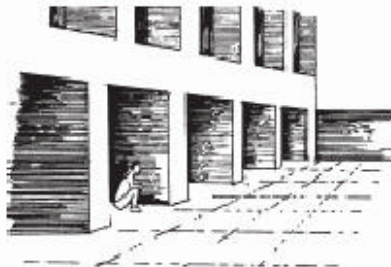
Note: The design and operational requirements of network utility structures are to be taken into consideration when assessing and identifying potential entrapment spots. This is in recognition that some of these structures are unable to be completely closed off to the general public.

Guidelines:

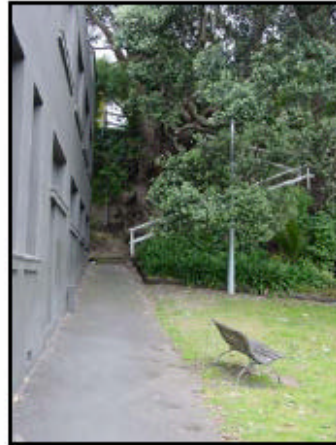
4.5.1 To avoid potential entrapment spots the following should occur:

- Recesses in external walls next to pedestrian routes/walkways/footpaths need to be avoided. Any areas that are recessed should have a clear two-way view of the adjacent route or surrounding area.
- Recessed areas such as loading docks or private access ways need to be secured to prevent unauthorised access during the hours of darkness.
- Potential entrapment areas (where people can hide) should be illuminated if they are unable to be removed or secured during the hours of darkness.
- Routes/paths all need to have multiple exit/entry points so as to avoid them become movement predictors.
- Where there are options for pedestrian routes or exits, signage (in conjunction with lighting) should be provided to identify the available options (exits / end points etc), and give people direction to find safe routes and facilities.
- Routes / paths need to be designed so that there is clear visibility along and into them from surrounding areas.
- Where possible, routes/paths need to be located where they are overlooked by, or visible from, other activities, rather than being located in isolated areas where they cannot be overlooked by buildings, streets and other activities.
- Alternative routes need to be indicated in advance of entrances to underpasses and overpasses, escalators and travelators, outlining different options for users.
- Landscaping in any external carpark is to be designed and located so as not to obscure sightlines or provide hiding places or entrapment opportunities.
- Any restrictions to the hours of access to any route need to be clearly advised at the entry/exit points.

Examples of entrapment spots:



Walkway without clear sightlines from beginning to end and opportunities for concealment away from main street.



Semi-concealed spot behind building, next to walkway.



4.6 Control of public access to private areas such as lobbies and car parks

In order to reduce opportunities for crime to occur, public access to private areas such as lobbies, car parks, and communal areas within residential developments should be controlled. Boundaries between public and private areas should be clearly established and identified so as to eliminate any possible confusion. This can be done by the use of topographical features, lighting, landscaping and signage.

Access control can also be by way of organised surveillance such as on-site attendants and security cameras. Controlling access to private areas reduces the available access to potential crime targets. It also increases the perceived risk of detection and interruption if crime was to be attempted.

The intention of this section of the guidelines is not to suggest that gated communities are an appropriate response to controlling access, as high solid walls and gates around developments detract from other important CPTED concepts of informal surveillance and visibility. Such a response would also inhibit the ability of people to walk through some of these developments to reach shopping areas, public transport and other facilities.

District Plan Criteria:

“Control public access to private areas such as lobbies and car parks through design and management so as to reduce opportunities for crime against people and property within the development.”

4.6.1 Guidelines:

- Signage and other gateway features should be provided to clearly indicate those areas which are private.
- Features such as semi-transparent fencing, changes in paving and landscaping need to be used to indicate the transition from public space to private space.
- Locating an attendant/concierge at the entrance to the carpark or lobby will increase the level of control of access to these areas.
- Any restrictions on the hours of access to any route or facility need to be clearly advised at the entry point.

4.6.2 Carparking areas and buildings

- Carparking areas and buildings need to have separate spaces at entrance/exit points for pedestrians and vehicles. It is possible to use physical devices such as bollards to achieve this if necessary.

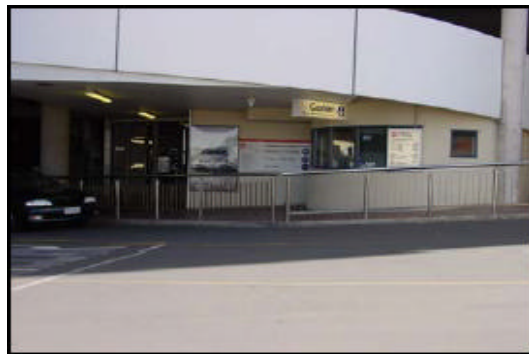
Examples of good access control:



Gateway feature at entrance to lobby clearly indicates a move from public to private space.



Attendant at entrance/exit to carparking building.



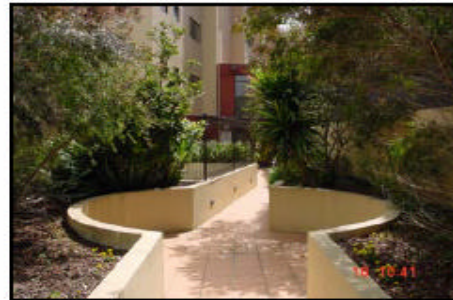
Examples of poor access control:



Park edge adjoins carparking building at ground level with direct uncontrolled access between the two.



Accessway to residential units is hidden from view and does not clearly indicate a separation between public and private space.



Poor control of access to residential units above retail through use of stairwell / doorway at rear.



5.0 Maintenance

The District Plan criteria do not specifically address the issue of maintenance. However, maintenance is an important component of a safer environment. A high level of maintenance leads to a perception of safer places and encourages use of an area. The design of surfaces and appropriate use of materials and fittings will assist in creating an easily maintained facility. Maintenance by nature is an ongoing activity. While design techniques may aid in the ease of maintenance of an area the servicing regime is critical to the perception of an area as “safe”.

Objective:

“To provide a quality environment which is attractive to people and encourages responsible use.”

Guidelines:

5.1 General

- Areas should be designed so that they are easy to maintain.
- Vegetation (trees, planting, grass) needs to be located in areas where they will perform well with species suitable to their location. Providing appropriate planting in suitable locations will ensure healthy robust performance. Vegetation / landscaping needs to be well maintained and trimmed / pruned regularly to maintain clear sightlines.
- Fixtures need to be robust, of high quality, and of standard components and fixing, so that they are easily replaced.
- Tight corners and objects low to the ground and other areas and structures with limited ground clearance which cannot be easily swept or hosed down should be avoided.
- Paving surfaces should be robust with a hard wearing and dirt resistant finish.
- Rubbish facilities need to be located and designed so that they can be easily cleared and rubbish containers should be covered.
- Building development needs to avoid corners where wind blown rubbish and debris may accumulate.
- Vegetation should be kept trimmed and should be regularly maintained to ensure sightlines are clear and entrapment or concealment spots are avoided.
- Ensure prompt repair of damage and removal of graffiti.

5.2 Responsibility

- Signs should be provided nominating the agency responsible for monitoring the area, and how to report damage or any faults in maintenance.
- Signage providing maintenance information should be provided:
 - at one end of a through site link, underpass, overpass or escalator;
 - in association with information boards in public and private spaces.

5.3 Fixtures

- Fixtures should be (as far as possible, and as is appropriate to the individual circumstance) vandal-resistant in terms of materials, design and location.

5.4 Surfaces

- Consideration should be given to the use of appropriate artwork, wall design or textured finishes to provide interest and vitality and discourage graffiti.

- Wall surfaces should have finishes that can be easily cleaned or treated to deter graffiti.

5.5 Rubbish

- Rubbish receptacles should be adjacent to, but set back from, pedestrian routes and pedestrian areas.
- Commercial rubbish storage should not impede pedestrian activity and should be secured so as to avoid potential concealment areas.

Bibliography of useful books/documents:

- *Introduction to CPTED Crime Prevention Through Environmental Design* - Community Planning, Auckland City Council, October 2001
- *A Working Guide for Planning and Designing Safer Urban Environments City of Toronto* – Safe Cities Committee of the City of Toronto and the City of Toronto Planning and Development Department, 1992.
- *Safer by Design manual* – New South Wales Police Service, 2001.
- *AS/NZS 1158.3.1:1999 Road lighting Part 3.1: Pedestrian area (Category P) lighting – Performance and installation design requirements* – Australian / New Zealand Standards, 1999.