Design Guide for a
SAFER CITY

December 1995

Prepared by

THE CITY OF Edmonton PLANNING AND DEVELOPMENT

1 INTRODUCTION

What this Design Guide is About

Design Guide For a Safer City is intended to be a practical document containing suggestions to build safer urban environments. The Design Guide is not intended to suggest that modifying physical environments on its own will prevent crime, rather it is one of the many actions towards providing a safer environment. The Guide presents information and illustrations to help the community and design professionals to incorporate safety and security into their design and to make informed decisions.

The intent of the Guide is not to create another level of bureaucracy nor to stop any innovative design, but to aid in creating a safer and yet aesthetically pleasing and functional physical environment.

Purpose

The purpose of this guide is:

- to aid planning and design professionals, developers and community groups in integrating safety and security concerns in their work.
- to outline the process of integrating safety and security concerns throughout the planning, design and development review process for all private and public projects; and
- to promote and develop community awareness of the importance of creating safer physical environments.

Fear of Crime

Are communities safe? This answer may vary from one community to another even within the same city. The 1994 police mapping[2] of reported crime in Edmonton indicates that crime rates generally have been decreasing for the last several years.

National polls suggest that fear of crime is becoming a more significant factor in the quality of life for Canadians. Nationally, the fear of crime is increasing, especially among women and older people. They fear for their personal safety on streets, parks, transit systems, parkades and some isolated areas near downtown. People in Edmonton have often said that their safety is at risk. A study undertaken by Edmonton Police Service for Task Force on Safer Cities revealed that over a quarter of Edmontonians do not feel safe walking alone in their neighbourhoods after dark.[3]

Fear of crime affects people's behaviour. People may avoid going for a stroll in the evening or refuse working late or may take a taxi instead of public transit or may restrict their children to play outdoors.

Fear of crime affects neighbourhoods and the entire city. It may contribute to the economic decay of downtown or shopping areas or rental housing areas. With activities curtailed, the people on the streets may be perceived as potential offenders and not allies.

In the long term, the fear of crime can destroy the life of the City. Safety and the perception of safety are critical to the vitality of a City.

Crime Prevention Through Environmental Design (CPTED)

The design of the physical environment can either support or deter crime. Crime can be prevented through the proper design and effective use of our environment. Crime Prevention Through Environmental Design (CPTED) is not a new concept. Its roots are in environmental psychology. Historically, the design and management of space have been used to manipulate human behaviour.

The United States National Crime Prevention Institute defines CPTED[4] as "the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life." The concept is simple. CPTED's main thrust is that the physical environment can be manipulated to produce behavioural effects that will reduce crime.

It should be stressed here that CPTED is one aspect of crime prevention. Crime can be prevented by incorporating a common sense approach to the design of the physical environment. CPTED does not interfere with the normal use of the space. It is easy to apply and can be inexpensive to implement, especially if it is done at the early planning and design stages of a project prior to implementation.

Background

The formation of "The Mayor's Task Force on Safer Cities" was approved by City Council on October 9, 1990. The Task Force Final Report "Towards a Safer Edmonton for All" contained the work of five Task Force Committees:

FAMILY VIOLENCE: *Breaking the cycle*

SAFE HOUSING: *Upgrading basic living conditions in Edmonton*

YOUNG ADULT EMPLOYMENT: *Investing in our future*

DESIGNING A SAFER EDMONTON

CHILDREN AND YOUTH ARE TODAY

The results of the five committee reports contain a total of 213 recommendations. At the September 15, 1992 meeting of City Council, the recommendations regarding the Mayor's Task Force on Safer Cities: Urban Design and Safety Report (DESIGNING A SAFER EDMONTON) including the following, were concurred in:

> "that the Planning and Development Department, assisted by the Edmonton Police Service, develop a set of CPTED criteria and performance standards for
>
> a) approval by Council
> b) inclusion, through amendment, in the Land Use Bylaw
> c) use in the review and approval of all proposed development"

Implementation Strategy

The Implementation Strategy for the guidelines contained in the "Design Guide for a Safer City" is as follows:

1. *Approval in Principle of the "Design Guide for a Safer City" by City Council.

The information contained in this guide represents the culmination of one component of the recommendations presented by the "Designing a Safer Edmonton" Committee of the Safer Cities Task Force. City Council had requested that Planning and Development, assisted by the Edmonton Police Service, develop a set of CPTED criteria and performance standards that will apply to new development and redevelopment, and that these be approved by Council. "Design Guide for a Safer City" implements this directive.

* Design Guide for a Safer City was approved on August 14, 1995 - (See Appendix - I)

2. **Inclusion of Safer Cities references in the General Municipal Plan, Land Use Bylaw and other applicable municipal planning legislation.

To ensure that CPTED directives can be effectively implemented by the City Administration and Council, it is necessary to include Safer Cities objectives and policies in the General Municipal Plan, and to include Safer Cities regulations and guidelines in the Land Use Bylaw. In the future, other planning controls, such as the subdivision process, or small area planning exercises (area structure or redevelopment plans), should be designed or modified to recognize safety and security concerns.

** Amendments to the General Municipal Plan and Land Use Bylaw reflecting Safer Cities references were passed by City Council and came into effect on October 16, 1995 and October 9, 1995 respectively - (See Appendices - II & III)

3. Modify the design review process to incorporate recognition of CPTED concepts and principles.

There is an opportunity at the Development Permit stage to ensure that new development or redevelopment proposals incorporate appropriate CPTED principles. For complex proposals, the Development Officers may consult with the Edmonton Police Service for input based on crime prevention experience. The design review process must remain fluid and flexible, but ideally, CPTED principles are integrated into development design and layout early in the process. Development officer shall review all development proposals and advise the applicant of safety and security concerns.

4. Establish partnerships and engage in a process of mutual learning with the Community.

Community education and support is critical to the building and maintenance of safer environments. As a result, it will be important to establish links, or utilize existing links, with a variety of community groups and interests to disseminate information about CPTED and other Safer Cities initiatives, and to obtain input and feedback that can be used, over time, to fine tune the regulations and the review and approval process with respect to these elements. Input can also be obtained from the experiences of other municipalities to enrich our understanding of how to create safer urban environments.

2 SAFETY AND SECURITY PRINCIPLES

Section Two discusses principles that make a place safer.

Planning and design factors that enhance safety and security include:

2.1 AWARENESS OF THE SURROUNDING ENVIRONMENT

The ability to see and to understand the surrounding environment through unobstructed sightlines, adequate lighting and pointing out possible situations to avoid confined and hidden areas.

2.2 VISIBILITY BY OTHERS

The ability to be seen by others, reducing isolation, improving the land use mix, intelligent use of activity generators, and creating a sense of ownership through maintenance and management of the built environment.

2.3 FINDING HELP

The ability to communicate, find help, or escape when in danger through improved signs and design.

2.1.1 SIGHTLINES

ISSUE

The inability to see what is ahead along a route due to sharp corners, walls, earth berms, fences, bushes or pillars is a serious impediment to the feeling of being safe. Large columns, tall privacy fences, overgrown shrubbery and other thick barrirers adjacent to pedestrian paths could shield an attacker. Dense landscape screens, insets adjacent to paths and long fences that cut off a way to escape a place, could act as entrapments.

Alternatively, low hedges or concrete planters, small trees, wrought-iron or chain-link fences, transparent reinforced glass or pony walls, lawn or flower beds, benches and lamp posts that denote boundaries allow users to see and be seen and usually discourage crime and vandalism.

At times it may not be possible to provide clear sightlines for aesthetic, technical or other reasons. Routes may be planned with closed views in order to add interest to a building or public space. Grade separation and landscape screens may also be used for aesthetic or functional reasons to provide private outdoor spaces, or to shield unpleasant buildings, parking lots and car traffic. Conflicts over right-of-way may lead to odd jogs in tunnels and walkways. The above motives for blocking sightlines should be measured against potential personal safety risks. Buildings should be designed to allow natural surveillance of the immediate outside environment.

GUIDELINES

1. Design visibility

The design of the built environment should allow for clear sightlines. Isolated or hidden spaces should be avoided. Columns, walls should be incorporated into built design to avoid any hidden spaces. Fences, shrubbery, berms should be designed and located to maximize visibility. Where blank walls face play areas or parking lots, windows could be added to permit natural surveillance.

2. Modify sightlines

Sharp “blind” corners should be avoided, especially on stairs or corridors. If unavoidable, security mirrors or other devices such as video cameras should be installed to provide a view. Sudden changes of grade on walkways that reduce sightlines should be avoided or modified.

Glass enclosed stairwell design allows for clear sightlines and visibility.

3. Problematic spaces

Visibility should be taken into account when designing or planning spaces where risk to personal safety is perceived to be high, such as stairwells in parkades, underground walkways, lobby entrances to high-rise buildings and laundry rooms.

4. Future sightline impediments

Landscaping in its maturity could serve as screens or barriers or hiding places. Landscaping should be planned and trimmed along walkways to maintain an unobstructed view.

Attractive fence defines the property and allows for clear sightlines.

2.1 Awareness of the Surrounding Environment

2.1.2 LIGHTING

ISSUE

Sufficient lighting is necessary for people to see and be seen. Light affects human behaviour. Too much, too little or coloured light has different effects. It takes a few seconds to adapt to a change in light intensity and light colour. Lighting must be planned and evaluated in terms of the use and behaviour it promotes or deters. Although lighting does make people feel safer, it has been observed that improved street lighting can be ineffective against crime without the conscious and active support of the community (in reporting what they see) and police (in responding and conducting surveillance).[5]

From a security and safety point of view, lighting should be placed to create a desirable human behaviour. Lighting can have a substantial impact on reducing the fear of crime. In an Edmonton neighbourhood where lighting levels for residential streets were upgraded, it was found that the number of property related crime and sex offenses decreased. Back lane lighting is provided under Local Improvement Bylaw upon request by residents as a reactive measure rather than proactive. Poor lighting is not the only reason behind crime. Other reasons include factors such as scarcity of people, use of alcohol and normal hours of socializing.[6]

A common sense way to look at the basic level of lighting (of 4 lux, as set by the Canadian Standards Association) is to be able to identify a face from a distance of 15 m. for a person with normal vision. The ability to have eye contact with a person you are about to pass is a common measure of security. Seniors and those with decreased vision will need an increased standard of lighting.

Not only the level of lighting, but its consistency is important. Overlighting and inappropriate use of lighting can be a problem. For example, a person who lights his property so, that light shines into neighbours' windows is hindering informal surveillance. Bright light provides higher contrast and higher contrast can make informal surveillance difficult. It is generally preferable to provide more lighting fixtures with lower wattage than a few with higher wattage. Lighting of wilderness or isolated paths may give a false impression that a path is well used in evening hours or that it is safe thus providing a false sense of security.

GUIDELINES

1. Minimum standards

If the area is intended for night time use, lighting should provide visibility. Pedestrian walkways, backlanes and access routes open to public spaces should be lit so that a person with normal vision is able to identify a face from a distance of 15 m. Inset spaces, signs, entrances and exits should be lit.

Grant MacEwan Community College in Downtown provides additional pedestrian lighting for better visibility.

2. Necessity of lighting/ improper lighting

Is lighting necessary in an isolated area or for a path leading to the wilderness? Lighting such areas may provide a false sense of confidence for people during night time use. The paths or spaces not intended for night time use should remain unlit to avoid giving a false sense of security or impression of use.

3. Consistency of lighting

Lighting should be uniformly spread to reduce contrast between shadows and illuminated areas. More fixtures with lower wattage than fewer fixtures with higher wattage help reduce deep shadows.

4. Designing for night time use

Project proposals should take into account the night time use of the outdoor spaces specifying the type, placement and intensity of lighting.

5. Protection of lighting

Light fixtures should be protected against casual vandalism by means such as wired glass or other vandal resistant materials and design.

Proper placement of lighting in relationship with landscaping could avoid future conflicts.

Special lighting on Whyte Avenue provides light for road and sidewalk at pedestrian scale.

6. Placement of lighting

Lighting should also be directed on the walkways and possible entrapment spaces rather than on roads only. Lighting should take into account vegetation including mature trees and other obstructions blocking light.

7. Maintenance

Lighting requires maintenance to preserve visibility. Bushes and trees that block the light should be trimmed. Lighting fixtures should be maintained in a clean condition and promptly replaced if burnt or broken.

Development agreements should state who is responsible for maintenance of lighting and landscaping. Posting information indicating who to call in case of burnout or vandalised lights is desirable.

2.1.3 PREDICTABLE ROUTES

ISSUE

Predictable routes offer no alternative for pedestrians. An attacker can predict where pedestrians will end up once they are on the path. The obvious examples are pedestrian tunnels, pedestrian bridges, escalators and staircases. Predictable routes are of particular concern when they are isolated or when they terminate in entrapment areas.

GUIDELINES

1. Visibility of predictable routes

If there is a need for the predictable route, it should be designed to incorporate visibility. If there is an existing predictable route and safety concerns are raised, it should be modified or eliminated.

Predictable routes can be made safe by bringing in more activity, ensuring clear sightlines, improving lighting, installing emergency telephones, panic hardware and electronic surveillance.

2. Location of predictable routes near entrapment spots

If there is an entrapment spot or isolated area within 50 to 100 m. of the end of the predictable route, it should be modified or eliminated.

An entrapment area located near a predictable route such as a tunnel or an isolated path provides the attacker with an opportunity to take a victim to a nearby entrapment area where a more serious crime could be committed.

3. Natural surveillance

Natural surveillance of the predictable route should be encouraged.

A stair or a ramp may be located such that it has external glazed/open areas and has a view from the surrounding properties.

Pedestrian ramp is visible and overlooked by adjacent building.

4. Sightlines

If a pedestrian cannot see what is on or at the end of a predictable route, the visibility should be increased by lighting and/or the use of a reflective surface such as mirror.

5. Lighting

Predictable routes should be adequately and uniformly lit, avoiding pools of shadows. Lighting should be vandal proof and properly located. Light coloured walls and ceiling materials help to reflect light and can enhance the brightness of an area. Natural lighting is preferred and should be encouraged.

6. Surveillance through hardware

If the predictable route is enclosed and prone to crime i.e. pedway or stairwell, surveillance through security hardware should be considered and responsibility assigned.

7. Access to help

Emergency telephones, intercoms, security alarms should be added to predictable routes and the means to summon help well signed.

8. Alternative route sign

An alternative well-lit and/or frequently travelled route should be signed at the entrance.

While pedways in the downtown district may be preferable during the day time hours, an alternate route should be indicated for evenings and weekends at the entrance.

Predictable routes in an LRT station equipped with a "HELP PHONE"

2.1.4 ENTRAPMENT SPOTS

ISSUE

Entrapment spots are small, confined areas near or adjacent to well-travelled routes that are shielded on three sides by some barriers, such as walls or bushes. Examples are elevators, tunnels or bridges, enclosed and isolated stair wells, dark recessed entrances that may be locked at night, gaps in tall shrubbery, a vacant site - closed from three side by barriers, i.e. walls, narrow deep recessed area for fire escape or loading, grade-separated driveways or loading docks off a pedestrian route. Parking lots, gas stations, used car lots and school buildings isolated by school yards can also become entrapment spots especially when there is less activity .

GUIDELINES

1. Elimination of entrapment spot

If there is an entrapment spot adjacent to a main pedestrian route, i.e., hidden area below or above grade, private dead alley, walled area or storage area, it should be eliminated.

2. Closing of entrapment spot in off hours

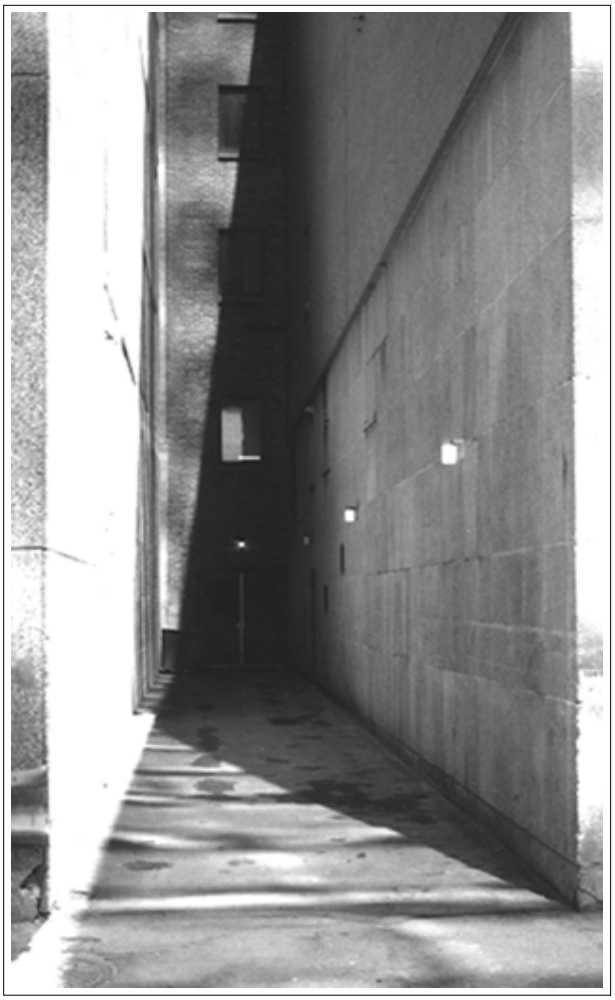
If elimination of an entrapment spot is not possible, it should be locked or closed during off hours. For instance, a pedway connection to a locked building should be locked as well.

3. Visibility

It is preferable to have natural surveillance. However, if an entrapment area is unavoidable, the area should be well lit and preferably employ formal surveillance.

4. Escape route and help

Design should provide for an opportunity to escape and find help. For example, fenced parking areas can have more than one pedestrian exit points.



Deep recessed fire escape could act as an entrapment spot despite being lit.

2.2 VISIBILITY BY OTHERS

2.2.1 ISOLATION

ISSUE

Most people feel unsafe in isolated areas especially if people judge that signs of distress or yelling will not be seen or heard. People may shy away from isolated areas and in turn such places could be perceived even more unsafe.

Natural surveillance from adjoining commercial and residential buildings helps mitigate the sense of isolation, as does planning or programming activities for a greater intensity and variety of use.

Surveillance by the police and other security personnel to see all places at all times is not practical, nor economical. Some dangerous or isolated spots may need formal surveillance in the form of security hardware, i.e. audio and video monitors. Aside from its cost, the hardware must be watched efficiently and attentively by staff trained for emergencies.

GUIDELINES

1. Natural surveillance of isolated routes and public spaces

Natural surveillance of public spaces such as plazas, open green spaces, isolated pedestrian routes, surface parking lots or parkades should be encouraged through planning and design.

Blank facades or buildings set far back at street level should be avoided as they can create a sense of isolation.

Canada Place in Downtown – Below grade public space is visible from street level. Incorporated retail uses provide natural surveillance.

2. Problematic routes

Isolated routes to and from parking lots or parkades should preferably be overlooked by surrounding buildings. In a low rise development, it is desirable to provide parking so that there is natural surveillance from the occupants of the buildings or surrounding areas.

3. Formal surveillance

Telephone, emergency telephone or panic alarm should be adequately signed. Video cameras and patrols could help monitor isolated areas.

4. Increasing activities

Compatible land use and activity generators create activities, thereby allowing visibility by others.

2.2.2 LAND USE MIX

ISSUE

Balanced land use mix is important for environmental, economic, aesthetic and safety reasons. Mixed uses must be compatible with one another and with what the community needs. For example, in traditional planning, an office complex could be in a residential area; a retirement home could be near a retail area.

In the last few years, we have been witnessing a slow return to the principle of land use mix for environmental and social reasons. There is a revived interest in the principles of traditional neighbourhood design, which include a number of uses. Typically these include a main street, a town square or park, prominent civic buildings and above all the ability of residents to walk to the place of work, to daycare centres and to stores. The social value of frequenting local businesses provides a sense of security and safety as the local business people "watch" the street. Generally, the traditional neighbourhood design concept encourages a land use mix that provides more choices for the residents to walk rather than commute, more interaction within the community and as a result, a safer place.

GUIDELINES

1. Compatible mixed uses

Mixed uses should be compatible in order to encourage activity, natural surveillance and contact among people during the day and evening. The first purpose in mixing uses should be to provide adequate and appropriate services to the primary users of an area.

Examples include convenience retail stores, personal service shops and offices in primarily residential areas, especially if they provide local employment opportunities. Childcare centres, health and fitness clubs and grocery stores in office areas including the possibility of adding residential uses at a later date.

A mix of retail, office, residential and parking provides compatible uses and strengthens street level vitality.

2. Balancing "negative" land uses

Land uses such as liquor stores, adult stores, video arcades and night clubs are inevitable elements of urban life. However, they can be perceived as negative or undesirable uses depending on their locations in the neighbourhood. In order to minimize their impacts on the community, such uses should be balanced with positive measures by carefully selecting their locations in relationship to surrounding uses.

Rice Howard Way parkade incorporating retail uses at grade level.

2.2.3 ACTIVITY GENERATORS

ISSUE

Activity generators are uses or facilities that attract people, create activity and add life to the street or open space and thus help reduce the opportunities for crime. Activity generators include everything from increasing recreational facilities in a park, to placing housing in downtown and inner-city neighbourhoods or adding a restaurant to an office building. They can be provided on a small scale or be added as supporting or mixing land use or intensifying a particular use.

GUIDELINES

1. Complementary uses

Complementary uses should be introduced, especially in potentially isolated areas, i.e. administration office, lounge and TV room could be next to the building entrance.

2. Complementary users

When planning activity generators, the potential use and users of the space should be addressed.

Avoid forcing users to pass through an area controlled by people considered to be threatening.

Churchill Square in Downtown is programmed for various activities and special events.

A food outlet provides more activity in the below grade pedway system in Downtown.

3. Reinforcing activity generators

Activity generators should be located along an "active edge" or along one or two pedestrian paths in large parks or on the boundary of large developments.

An "active edge" creates a boundary of space that is inviting rather than threatening to passers-by. Encouraging street vendors or food vendors in parks and the sensitive placement of seating areas informally generates activity along the edge of a path.

4. Design for programming activity mix

Park planning and design should provide opportunities for enhanced programming, such as cultural, recreational and community activities.

5. Grade-level activity

Pedestrian oriented activities should be encouraged at grade level in high and medium density areas.

Increased density generally attracts more people and may create more anonymity and a sense of fear. This sense of fear can be mitigated by creating more grade level activities that add "eyes" on the street.

Retail use at grade level creates activities that add 'eyes' on the street.

2.2.4 OWNERSHIP, MAINTENANCE AND MANAGEMENT

ISSUE

Sense of ownership, or territoriality, is often considered a vital factor in making a place less or more safe. Taking responsibility and caring for an environment helps make it safer. If residents in a multi-unit housing project, for instance, feel that the area outside their door does not belong to them, they will feel less safe, and be less likely to intervene in a dangerous situation. Not knowing who has formal ownership contributes to insecurity since it is not clear who to report the problems to.

Public spaces such as parks, roads, sidewalks, and semi-public spaces such as plazas and pedways on private properties are generally owned by the public sector or other private owners. Individuals are less concerned with public related property crime than they would be for their common area or private property. If the information about reporting maintenance, vandalism and crime is not displayed, only a few may make an extra effort to find the owner and report the crime.

Measures taken to increase the sense of territoriality may sometimes increase opportunities for crime. The visual or real barriers separating many new suburban housing developments from surrounding neighbourhoods may isolate residents from the wider community. Territoriality inducing measures, such as creating private gardens from open spaces and decreasing the number of people using an entrance to a building, are considered only one part of a larger set of issues including responsible management.

GUIDELINES

1. Marking territory

The properties that no one protects and that can easily be overtaken by intruders should be claimed by the presence of design features and maintenance.

For example poorly defined front and rear yards could be defined by a small fence or by regular cutting and maintaince.

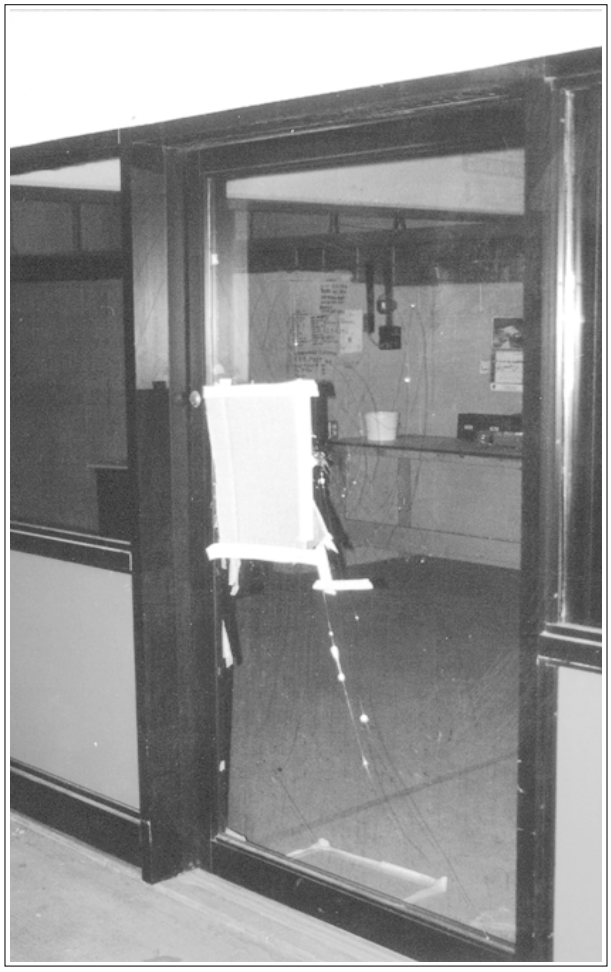
2. Maintenance

Properties should be well maintained to create a perception of ownership and safety. Building maintenance bylaw enforcement is a critical part of enforcing a sense of ownership.

3. Reporting maintenance

A well displayed phone number to call for repairs and report vandalism to a property, especially in public areas is desirable. For example, a broken lock, door or window or light could be reported.

Poor maintenance and neglect of a property provides a feeling of an unsafe place.



If prompt attention is not given to maintaining a property, it can contribute to a sense of fear.

4. Maintenance priorities

Offensive graffiti should be promptly removed either by the property managers or the public authority.

Response to litter pickup and repairs should be prompt.

A well maintained space gives an impression of 'ownership' and 'caring'.

5. Snow clearance

When removing snow from parking areas, walkways and around buildings, ensure piling of snow allows for visual surveillance and does not create entrapment areas or block sightlines.

6. Management

Efficient programming and management of spaces, formal surveillance and caring by personnel can also enhance personal safety.

2.3 FINDING HELP

2.3.1 SIGNS AND INFORMATION

ISSUE

Well designed, strategically located signs and maps contribute to a feeling of security. Public signs should be standardized to give clear and consistent messages. Private signs should be clear, concise and readable from the street. For example, in Edmonton, a house address must be at least four inches high in character size and contrast with the colour of the surface on which it is mounted so that the address is readable from the street during the day and at night. Having addresses lit up at night will make them even more visible. The Police Service recommends that the complete address be displayed at the rear as well as the front of the property. This is to ensure faster location finding by emergency services. In curvilinear subdivisions, it is difficult to find one's way around; signs with maps may help.

Signs must be visible, easily understood and maintained. Graffiti and other vandalism can make signs unreadable. If signs are in disrepair or vandalized it gives an impression of lack of ownership and thus adds to the sense of fear.

GUIDELINES

1. Sign design

Signs should be large enough and legible to be identifiable as directional signs from at least 20m.

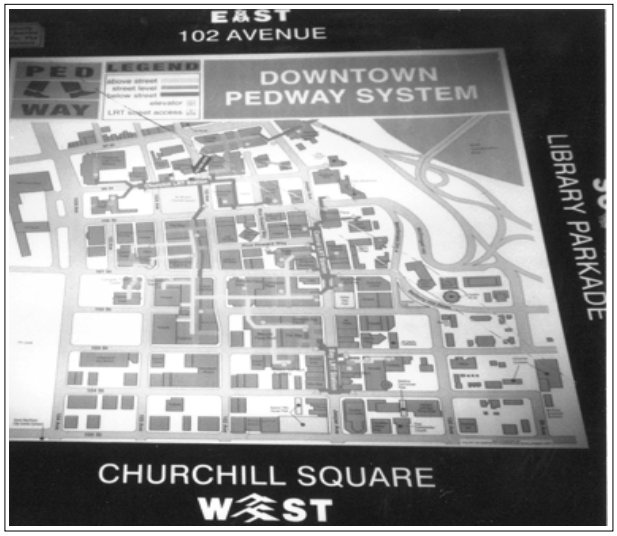
The use of strong colours, standard symbols, simple shapes and graphics is recommended for signs of washrooms, telephones, information and help.

2 Message

Signs should convey the message with adequate information. For example, it should indicate where to go for assistance or help, or where the telephones and washrooms are, or the hours of operation of a pedway.

3. Sign location

Signs should be strategically located at entrances and near activity nodes (e.g., intersections of corridors or paths) and placed for visibility at an appropriate height.



Downtown pedway signs are well designed, with clear message and well located.

4. Maintenance

Signs should be maintained on regular basis to ensure that they are visible. This may involve trimming any landscaping growth or cleaning the sign.

Clear signs in a parkade help users to identify their location.

5. Maps

In large parks and buildings, maps or leaflets containing information appropriate to the different needs of various groups of users should be available.

6. Hours of operation

When and where exits are closed should be indicated at the entrance of the route.

2.3.2 OVERALL DESIGN

ISSUE

The design and management of the environment influences human behaviour. The proper design and effective use of the built environment can lead to a reduction in fear and incidence of crime. A barren, sterile place surrounded with security hardware will reinforce a climate of fear, while a vibrant and beautiful place enforces confidence and caring.

Sometimes the functional objectives of the built environment are compromised for aesthetic reasons and vice-versa. Both the functional and aesthetic values of public and semi-public spaces contribute to the fear or sense of safety. The degree to which users can find their way around influences the feeling of security. Good design reinforces natural use of space and lessens the need to depend on signs in order to find one's way around.

GUIDELINES

1. Importance of quality and beauty

The design of the space, besides fulfilling the functional objectives should create an aesthetically pleasing environment that a person can enjoy.

Security aspects should be considered while designing the space and fulfilling aesthetic values.

2. Design clarity

The design of the space should be easy to understand. The entrances and exits, the places to find people and the places to find services such as washrooms or phones should be easy to find for a person visiting the place for the first time.

The more complex a space, the more signs and other measures to increase legibility need to be considered and this may lead to more confusion.

An inviting environment creates an image that attracts people.

Victoria Promenade in Oliver – a simple and clear design creates an attractive image.

3. Avoid unusable spaces

The purpose for designing a space should be clear. Unused and unusable "dead spaces" should be avoided.

4. Night time use

The design of the space should address the night time use.

5. Construction materials

For better public safety and security, the design of the space should take into consideration appropriate materials, its placement, colour and texture to make the space inviting or uninviting.

For Example: Dark spaces with dull finishes create a sense of fear.
Spaces where people are not invited can be paved with material difficult to walk on such as cobblestones.

Centennial Library in Downtown – the use of cobblestones discourages people from walking close to windows.

3 AREAS OF CONCERN

Section Three discusses ways to improve places that are commonly considered unsafe. It applies the Safety and Security Principles presented in Section Two to specific areas of concern.

Areas of concern that need priority attention in improving safety and security of the urban environment include:

3.1 TRANSPORTATION

Transportation-linked urban spaces such as parkades, parking lots and the walkways from the transit stops and LRT stations are the public places where people may be concerned about safety.

3.2 NEIGHBOURHOOD

A basic requisite of a safe city is the ability to feel safe around one's home and in the surrounding neighbourhood.

3.3 DOWNTOWN

The success of downtown revitalization depends on the quality of the downtown environment. If the downtown becomes less active in the evening due to a fear of crime, the economic and social impacts can be significant.

3.4 OTHER PLACES

Places that are often perceived as unsafe are washrooms, back lanes, elevators, and stairwells. Other places of concern are major shopping centres, industrial areas, university/college campuses and the river valley especially after dark.

3.1 Transportation

3.1.1 Parkades

ISSUE

Parking below ground or above in a multi-storied parkade is one of the major safety and security concerns of urban areas. Poor design, isolation, lack of lighting and maintenance lead to parkades being perceived as an area with potential safety problems. Security has become a major concern for parking facility owners and operators. Security design in parking facilities deals primarily with minimizing the risk of incidents that threaten the safety of parking patrons and attendants. Additional concerns are the protection of cars, personal property, cash receipts and the facility itself.

GUIDELINES

1. Sightlines and potential entrapment spots

Stairwells and elevators should be located where they can be viewed by the maximum number of people, for instance, near the outer edge of a building where there is a glass wall, or at the entrance to a shipping area. Major route(s) in the parkade and to the exit(s)should be free of sharp turns. If there are sharp turns or pillars obstructing sightlines, this can be modified by using mirrors or other methods. Potential entrapment areas such as storage rooms along the route should be kept

Parkade staircase allows natural light and natural surveillance.

Well lit parking areas reduce the sense of fear.

2. Lighting

Parkades should be lit to the minimum standard of being able to identify a face from a distance of 15 m. for a person with normal vision. Lighting should be consistent and located where it can provide maximum visibility. Light fixtures should be protected against breakage by some means, i.e. wired glass or other vandal proof materials. The colour of the walls should allow the lighting to be used efficiently, i.e. painted white or some other light colour.

A common sense way to measure the level and consistency of lighting is, "Can you see in the back seat of your car before entering?" Whitewashing walls increases the efficiency of the lighting and provides a cleaner and more pleasant look than bare concrete.

locked.

3. Natural surveillance

Street level pedestrian activities should be incorporated with the ground level of multi-storied parkades. This adds life to the street and increases the opportunities for natural surveillance. Surveillance opportunities should also be encouraged from adjacent streets and nearby buildings. Parkade design should be open (railings instead of walls) to allow for natural surveillance.

4. Attendants

Attendant booths should be located near entrances and predictable routes where there are clear sightlines. If attendants are not responsible for maintenance and repair, signs should identify where to report maintenance problems. For late-hour multi-storey parkades there should be an attendant at all times who is trained to respond to emergencies.

5. Designated spaces or escorts

In office parkades, it is recommended to reserve certain parking stalls near the attendant for people who regularly work late, especially female office workers. The provision for an escort service should be encouraged in large workplaces by the building owner. Designated spots for people with disabilities should be provided near an attendant if there is one, or otherwise near a safe accessible exit.

6. Formal surveillance

In larger parkades there should be emergency telephones on each level with illuminated international telephone signs. Additional surveillance measures such as well signed audio links or video cameras could also be provided in stairwells, elevators and other isolated areas. Patrols by maintenance staff should be encouraged. The repair of broken bulbs and other common maintenance problems should be undertaken by the maintenance staff, who could also be trained to respond to or report emergencies.

Open parkade design with railings allows for natural lighting and surveillance.

7. Signs and information

Exits and main routes should be clearly signed using distinctive colours and symbols so that casual users can easily find their cars. If there are safety problems in a parkade, information with telephone number should be posted on the premises, so that the patrons are aware of the problems and can report any further problems. Floor numbers should be clearly displayed on each floor.

See also:

Lighting,	8
Isolation,	13
Ownership, Maintenance & Management	18
Signs and Information,	20
High Rise Residential Areas	46
Major Shopping Centres	59

3.1.2 Surface Parking

ISSUE

Many surface parking lots, being temporary facilities, are neither properly finished nor lit. After hours, most parking lots are perceived as being isolated areas due to fewer pedestrians, especially in the downtown.

Surface parking ranges from small parking areas adjacent to buildings in downtown to larger parking areas around shopping malls. The majority of downtown surface parking is rental parking with minimal improvements to the property. Security and safety precautions are necessary depending on the location and the size of the parking area.

GUIDELINES

1. Natural surveillance

Natural surveillance of surface lots or parking for residences should be encouraged through placement of windows in new buildings so that they overlook the lot. Parking lots should be encouraged to locate where it can be viewed by stores and residents.

Landscaping foliage should be maintained. Use of see through fences is preferred to solid walls to allow natural surveillance.

Low fences and landscaping allow natural surveillance.

2. Sightlines

Sightlines within and to the surface lots should be maximized through the elimination of dense bush, or a solid fence, or advertisements that block the view and unnecessary buildings or sheds. Sightlines should be maximized especially from the entrance to a lot and from the parking attendant's booth, if there is one.

In entry-ways off commercial streets to areas with parking in front of stores, low (not more than one meter in height) wrought iron fencing or low-growth, low maintenance bushes are preferable to other barriers. Some bushes require a high level of maintenance and grow too high for adequate sightlines or develop gaps that could be used as a hiding spot.

Attendant has view of the parking and entry/exit areas.

3. Signs

Location identification signs should be provided in larger lots so that patrons can easily find their cars. Emergency telephones, if provided should be signed with the raised illuminated international telephone sign.

4. Lighting

If lighting is provided, it should be adequate to allow a person to see the inside of a car's back seat before entering the car. Lighting should be uniform avoiding deep shadows.

Providing more fixtures with lower wattage rather than fewer with higher wattage helps reduce deep shadows. A minimum level of lighting where a person with normal vision can identify a face from a safe distance of 15 m. is recommended.

5. Designated spaces or escorts

In office parking lots or parkades, the provision for an escort service or reserved spots close to the building entrance for people who regularly work late should be encouraged. Priority parking for people with disabilities should be located near the parking attendant when there is one, or near an exit to the street

6. Parking on shopping streets

On shopping streets with pedestrian oriented retail, parking lots in front of stores should be discouraged. While marginally safer and more convenient for the car users, these parking lots tend to weaken the relationship between the building frontage and the sidewalk, this could discourage pedestrian activities.

7. Controlled entry/exit

If there is an attendant, there should be a single entry/exit to allow supervision of vehicles.

8. Attendants

Attendants should be trained to know how to respond in an emergency.

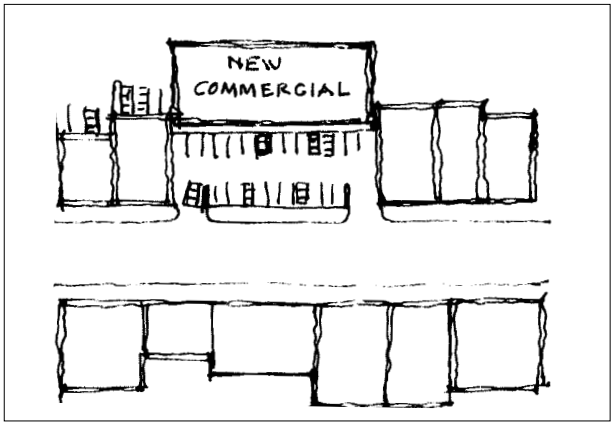
9. If no attendants - Avoid entrapment

If there is no attendant, there should be several well-lit, clearly marked entrances/exits, in order to avoid the lot acting as an entrapment spot.

Parking lot lit to standards and overlooked by surrounding buildings.

10. Formal surveillance

In larger lots, emergency telephones should be provided. Regular patrols are encouraged.



The street edge breaks down when a new commercial development is inserted into an existing commercial area with parking on the front. The new building is set back from the street, diminishing the view of pedestrians into and out of the stores.

See also:

Sightlines	6
Lighting	8
Isolation	13
Entrapment Spots	10
Ownership, Maintenance & Management	18
Signs and Information	20

3.1.3 Bicycle Routes

ISSUE

The majority of bicycle trips are made on the general street system. Some bicycle trips are made on designated routes, including signed on-street bike routes, distinct on-street bicycle lanes, and separate bikeways, either adjacent to a roadway, or in a park area. Adequate design of roadways should address the safety and crime concerns for the majority of bicycle trips.

The City of Edmonton Bicycle Transportation Plan was approved by City Council in April 1992. The report contains numerous recommendations and design details for the provision of safe and effective bicycle facilities.

GUIDELINES

1. Isolated routes

Isolated routes should be designed to have frequent, clearly-marked exits to areas of high pedestrian and car traffic, if possible.

2. Design and sightlines

Where separate bicycle routes are provided, the routes should be designed with adequate width, technical details such as sightlines and grades, and intersection controls. Provide visibility along and adjacent to the route and avoid entrapment spots.

3. Lighting

Lighting of bikeways is impractical through the river valley, along utility right-of-ways and most parks. Where a bicycle route coincides with a walkway, lighting should be provided unless the route leads into an unlit park or recreational area.

4. Bicycle parking

Bicycle parking facilities are required in all new developments under the amendment made in 1993 to the Edmonton Land Use Bylaw. Secure bicycle racks should be provided close to buildings and where they can be informally surveyed from streets, buildings, parking attendants or security personnel. In isolated areas such as parks bicycle parking may be located adjacent to activity areas.

Bicycle route/walkway located next to a major road, provides additional surveillance.

Bicycle parking location allows for natural surveillance from the street and nearby buildings.

5. Signs

Bicycle routes should be well signed. Signs at entrances to routes through isolated areas such as parks, ravine and River Valley areas should indicate that the area is unlit at night.

6. Formal surveillance of routes

Bicycle patrols for routes passing through isolated areas and the river valley should be provided. Well signed emergency telephones should be provided in isolated sections of the bicycle routes or trails.

The sign provides information that the bikeway has formal surveillance.

See also:

Sightlines	6
Entrapment Spots	12
Ownership, Maintenance & Management	18
Signs and Information	20

3.1.4 Sidewalks / Walkways

ISSUE

The quality of the pedestrian environment is a significant factor that can effect both perceived and actual personal safety. The characteristics of the built environment can sometimes be modified to facilitate pedestrian activity, e.g. by encouraging higher density, appropriate land uses and closer employment locations, sidewalk continuity, easier street crossing, adequate pedestrian lighting and sidewalk widths.

Lighting is provided for neighbourhood walkways and back lanes when requested by the majority of the adjacent residents through the Local Improvement process. Generally, street lighting is installed to light roads for motorists' safety with minor attention given to the quality of the pedestrian environment. The lack of street level pedestrian oriented activities in downtown and major shopping areas, due to building frontage set far back from sidewalks or blank walls and discontinuous weather protection in the form of canopies or awnings, can create an uncomfortable environment discouraging pedestrian activities on the street.

Sidewalks or walkways should be continuous to provide uninterrupted pedestrian circulation and access. Some sidewalks are constructed by the developer in accordance with City guidelines. Others are constructed by the City, according to city-wide priority, ranking often in conjunction with roadway rehabilitation and construction projects.

GUIDELINES

1. Sightlines and potential entrapment spots

Walkways adjacent to elements such as sharp corners, inset areas along buildings or walls, tall fences, earth berms or overgrown shrubbery may restrict visibility and may offer potential for entrapment. Wherever possible these elements should be modified to provide good pedestrian sightlines. In isolated open areas such elements should be avoided immediately adjacent to the pedestrian walks.

The walkway allows for visibility and clear sightlines.

Merchandise display adds to the street vitality without impeding pedestrian movement.

2. Width of sidewalk

The minimum standard width of the sidewalk is 1.5 m. for most sidewalks in Edmonton. Downtown sidewalks and those in other commercial areas and shared-use pedestrian/bicycle paths are generally a minimum width of 2.5 meters. In some locations, sidewalks are less than standard width due to physical constraints of the site or inadequate right-of-way. Increasing sidewalk widths is dependent on various factors.

3. Maintenance and cleanliness

Walkways should be regularly maintained and cleaned.

4. Lighting

Where the regular street lighting is not iluminating the walkways, lighting at pedestrian scale should be provided for the well travelled walkways. Lighting should be at consistent levels, vandal resistant and at appropriate height. Lighting intensity should allow a pedestrian to be able to identify a person 15 m. away.

Lighting walkways, which lead to or are located within recreational areas should be discouraged in some instances. Such lighting may give a false sense of security to pedestrians and a false impression that the path is well used at night time.

Lighting of well used walkways – clear sight lines and surveillance from adjacent properties help in creating a safer walking environment.

5. Formal surveillance through patrols

Natural surveillance should be encouraged by creating opportunities for pedestrian activities. Walkways in large isolated park areas such as the river valley, may have formal surveillance by police or park patrol or citizen groups.

See also:

Sightlines	6
Lighting	8
Entrapment Spots	12
Signs and Information	20

3.1.5 Pedways

ISSUE

Downtown Edmonton has a good combination of above and below grade pedways and at grade pedestrian connections, which encourage a variety of pedestrian activities. The above and below grade pedways are well used during winter. With enjoyable weather, the pedestrian activity at street level increases. Most of the pedways close with shopping hours or are tied with the activities or land uses in the adjacent areas such as threatres and LRT (Light Rail Transit) hours of operation. The pedway network is well signed throughout and has directional maps at prominent and strategic locations.

These below grade connections and pedways can be perceived as isolated due to the lack of below grade retail activity or amenity space such as exhibit areas and display windows.

In downtown, maintenance and security measures are implemented through development agreements between the City and the private sector. The City is responsible for the patrol and surveillance of most public pedestrian circulation areas while the private sector is responsible for its own security.

GUIDELINES

1. Necessity for grade separation

If the above or below ground pedway has to be located in an isolated area with low pedestrian volume, signs should be provided at strategic locations to indicate where it leads to and any alternate route.

In Downtown Edmonton, at grade pedestrian connections are encouraged by both the public and private sector.

2. Avoidance of hidden spaces

The pedway system should allow for continuous visibility of an area of 20 m. ahead from the centre line of the pedway. Any recessed surfaces or possible areas for hiding should be avoided.

If it is necessary that the pedway take a sharp turn of more than 60 degrees, an angled full-length mirror could be placed so that pedestrians can see around the corner.

Downtown below grade pedway is well lit with display areas, good signage and allows for visibility.

3. Sign and Information

Signs should display information such as the pedway network, its hours of operation, alternate routes, location of telephone and panic hardware.

4. Activity generators

If the below grade pedway is long and well used, supporting activity generators should be encouraged such as a small confectionery or coffee shop/kiosk.

In Edmonton, most of the below grade pedway connections facilitate connection to the LRT. Activity generators should be encouraged at route intersections to create higher visibility.

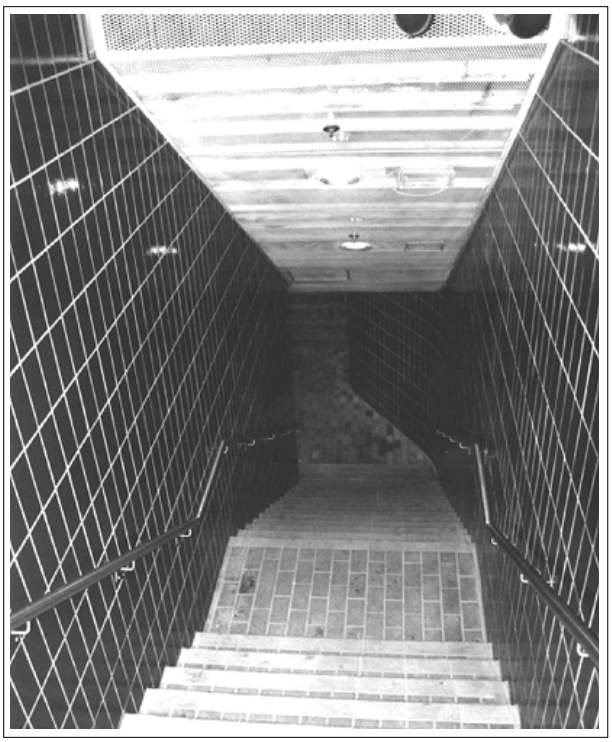
Below grade food kiosk at the concourse level of Sir Winston Churchill LRT station generates activities in the pedway system.

5. Maintenance and cleanliness

Pedways surfaces should be regularly cleaned, maintained and be of materials that reflect light to enhance brightness but not glare.

6. Visibility of below grade pedway traffic

Access to the pedway system should be highly visible from the streets, adjacent uses, frequent pedestrian traffic areas and activity generators.



The use of dark materials in below grade pedway contributes to darkness of space.

7. Lighting

The pedway system should be lit by natural or artificial sources to be able to identify a face from a distance of 15 m. Lighting sources should be protected from vandalism or manipulation. Lighting should be regularly maintained.

8. Formal surveillance

If the below grade pedway is more than 35 m. long, mechanical surveillance of the pedway or alternatively an alarm device or emergency telephone should be available.

Such formal surveillance could be paid for and maintained by the party(ies) as per the development agreement.

See also:
Predictable Routes 10
Entrapment Spots 12
Activity Generators 16

3.1.6 Surface and Below Grade Transit Stops

ISSUE

The planning and design of transit stop shelters, major transit centres, Light Rail Transit (LRT) stations and their locations are important factors that could enhance the safety and security of the transit users. Location of LRT parking and security is also important to the ridership of the LRT. LRT stations are safe when in use. All LRT stations and most major bus terminals have close circuit TV, security patrol surveillance and help phones.

A study for Edmonton Transit indicated that safety is a major concern for women and elderly [6]. Some bus stops may be located in isolated areas or near possible entrapment areas. Safety audits of transit stops, shelters and LRT stations should be encouraged. The application of crime prevention through environmental design principles in the planning and design of transit shelters and LRT stations should help reduce vandalism.

The design and integration of safety and security concerns into a project at the planning stage is usually more efficient and economical. It is estimated that 70% of the cost of installing a security system may be saved by installing it at the construction stage[7]. Moreover, it is better concealed, aesthetic and one may choose the best location and field of vision.

Edmonton Transit has been continually improving the safety for the transit users. Request for panic hardware and emergency telephones and closed circuit TV in areas not covered is a high priority. The maintenance of LRT stations and major bus terminals is undertaken on a daily basis, bus shelter maintenance is on weekly basis. Most of the maintenance issues are reported to the bus operators by the public. Formal surveillance is also reported by bus operators, who report potentially dangerous or emergency situations to the central dispatch. New buses have panic buttons to flash an electronic "HELP" sign. 'Bus Link' is an automated telephone information system that enables transit riders to get information on bus arrival at a particular stop.

GUIDELINES

1. Sightlines

Transit riders at transit stops/shelters and entrances to LRT stations should be clearly visible from streets and buildings. Any walls, berms, bushes, hills, power boxes or solid fences that block the view should be eliminated, modified or the transit stop/ shelter relocated. Advertisement on bus shelters should be located to ensure visibility of transit users.

2. Avoidance of entrapment spots

Nearby entrapment spots created by landscaping or built form should be eliminated, modified or the transit stop/shelter should be relocated.

LRT stations provide HELP Telephones, good signs and visibility.

3. Signs and information

Passenger information signs should indicate route schedules.

Long waits can be avoided and vulnerability decreased at a stop by knowing when a vehicle is scheduled to arrive.

Edmonton Transit has installed 'BUS LINK' telephone numbers at each bus & LRT stop. 'BUS LINK' is an automated telephone information system that enables transit riders to get bus arrival information at a particular stop.

Some bus stops provide schedule information.

4. Reduce isolation

If a bus stop or LRT station entrance is adjacent to an isolated area such as a large parking lot, vacant land, alleys, ravines or buildings set far back from the street, it should be relocated if possible. Demand stops for night time bus service have been implemented.

5. Bus shelter design

Bus shelters should be designed to reduce the possibility of entrapment through multiple exits or a wider exit. Ensure that there is no hiding space in or around the shelter. The materials and construction details for the shelter should be vandal resistant.

A special bus shelter design in downtown provides a wider exit to reduce the possibility of entrapment.

6. Lighting

The areas adjacent to transit stops should be well lit. If there is a shelter, it should not be over-lit so that it makes the users feel uncomfortable.

7. Maintenance

Shelters and transit stops should be well maintained. The shelters should be identified by number and preferably a telephone number posted to report maintenance problems.

8. Formal surveillance

Measures should be taken to improve transit drivers' ability to respond to dangerous situations, e.g. through two way communications or a panic alert button. Drivers should be trained to respond to emergencies.

All LRT stations should have video and /or other formal surveillance.

9. Patrols

Police should be made aware of problematic transit stations or stops.

See also: Pedways 34
Signs and Information 20

3.2 Neighbourhood

3.2.1 Neighbourhood Planning and Design

ISSUE

Crime in a neighbourhood is part of a larger phenomenon of urban growth and decline. It provides clues as to why certain areas continue to thrive while others do not. The neighbourhood is the natural geographic unit that acts as the interface between home and the city. It provides for human interaction and co-operation. People feel they can rely on the co-operation and support of other residents.

Design, organization of the physical environment and involvement of the community can affect the "safety and security of neighbourhoods".

Decisions related to transportation, access, noise barriers or green belts, parks and other planned open spaces such as utility corridors and walking / bike trails as well as residential and commercial development are sometimes made without realizing that they can directly result in the opportunity for the fear of crime. Traditionally, public safety has been an after-the-fact concern in designing new subdivisions and developments. Public safety should be an integral part of the decision-making process for newer growth and development.

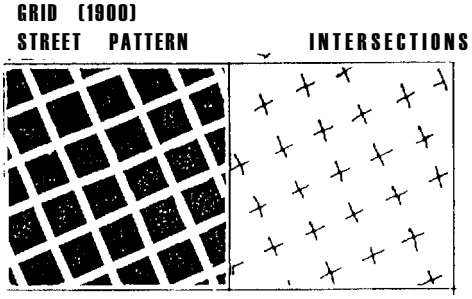
GUIDELINES

1. Street pattern

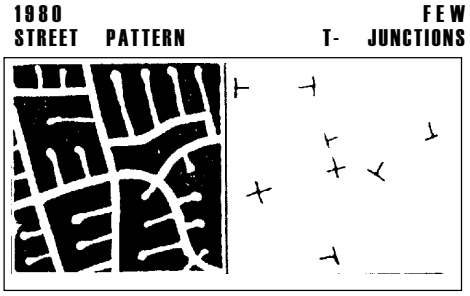
The street pattern should be designed and/or modified to reduce the opportunities for crime in the inner city and suburban neighbourhoods.

In inner city neighbourhoods where the grid pattern is predominent, access to outsiders can be controlled by reducing the number of intersections. The grid pattern is simple and predictable.

In suburban neighbourhoods/new subdivisions:
- access points to the neighbourhood should be highly visible;
- major traffic routes should not pass through the neighbourhood;
- conflict between pedestrian and vehicular traffic should be minimized to encourage pedestrian activity; and
- street pattern should be designed such that it is easy to find an address specially by emergency services.



Grid pattern allows more intersections and more routes to escape.



Curvillinear pattern allows lesser number of intersections and fewer routes to escape.

While curvilinear subdivisions provide good choice of lot shapes and create an interesting streetscape, it is difficult for visitors to orient themselves, especially, if the major roads approaching are not in grid pattern. Curvilinear subdivisions within a grid pattern can provide a compromise that could provide the desired lot shapes and an easy to find a way through the subdivision.

2. Land use pattern

Land use or mixed uses should be compatible with one another and with the community needs. Commercial uses should be located on main roads and may be combined with compatible uses.

For example, residential use could be combined with retail and/or small office use on major roads.

On the other hand, an example of incompatible uses could be adding a liquor outlet next to a school or religious assembly building.

3. Scale

The scale of new developments should be compatible with the surrounding developments.

This is important in order to avoid a design that would create large gaps in the street. But it is equally important for social reasons, to avoid having new developments considered as an eyesore by the neighbours, increasing the density, or attracting more people or transients.

4. Noise walls & berms

Consideration should be given to locating noise walls so that possible entrapment spots are not created. Natural surveillance of berms from the windows of adjacent developments or pedestrian traffic areas should be incorporated into the subdivision design.

5. Management and maintenance

Neighbourhoods should be well managed by an active neighbourhood committee. Safety Audits may be conducted to identify problems in the neighbourhood. Maintenance problems such as litter, vandalism, graffiti, burnt out lights on private property should be reported to the property owners /management.

6. Utility corridors or lots

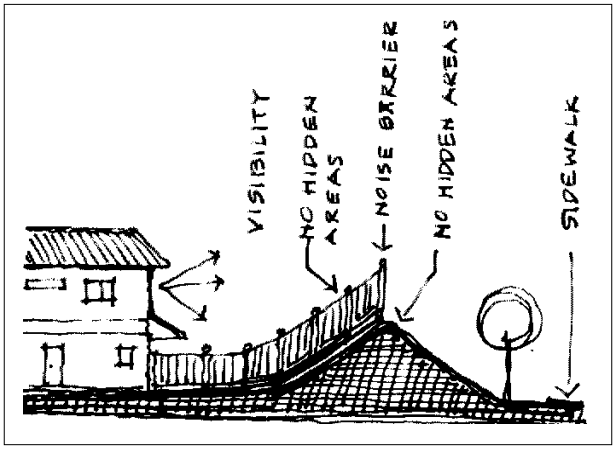
Utility corridors/lots should allow for natural surveillance. Walkways in utility corridors should not generally be lit to avoid giving a false sense of security, unless safety audit and/or crime incidence warrants it to be lit to minimum lighting standards.

7. Open space

Open space and walkways should be designed to enhance security and safety.

8. Sign and information

Signs may display maps at the entrances of subdivisions indicating road names and block addresses. This displayed information should be readable to motorists from a distance of at least 20 m.



Berms could be part of individual house's backyard rather than become part of the public lane.

See also:
Neighbourhood Residential Streets 40
Neighbourhood Commercial Streets 42
Neighbourhood Parks 44

3.2.2 Neighbourhood Residential Streets

ISSUE

In inner city areas, residential streets can be considered unsafe by neighbourhood residents due to the influx of commercial uses and un-kept properties. Also, of concern are streets with land uses that provide additional security risks such as parking lots, abandoned buildings, vacant properties, school yards and uses other than residential. The poor street image in some areas due to un-kept properties and undesirable uses reinforces a sense of fear among residents.

In suburban areas, residential streets can provide a lesser sense of community due to large lot frontages, large set backs, dominant two and three car garage frontages and supporting driveways, thereby reducing the amount of natural surveillance on the street.

Large residential developments covering a city block or more create a fortress effect when internal open spaces are disconnected and not visible from the street. The integration of shops and services at the lower level of large developments to serve the area residents can provide natural surveillance for the area.

GUIDELINES

1. Natural surveillance and activity generators

Opportunities for natural surveillance on the street should be introduced by encouraging front porches, balconies, more windows, small convenience stores or other uses promoting street activity.

In suburban areas, residential frontages incorporating more than two garages and setbacks more than six meters should be discouraged since they result in less surveillance and sense of community.

Older houses(1920's) with porches in front provide natural surveillance and a sense of community.

New houses (1980's) with double garages in front with family living facing backyard provides less street surveillance.

2. Improve pedestrian environment

Where excessive car traffic is affecting pedestrian use of the street during the day and the evening, discouraging car traffic by widening sidewalks, installing bollards or other traffic barriers may be considered. This could encourage pedestrian activities on the street.

3. Maintenance, cleanliness and image

Inner-city streets sometimes have a poor image due to un-kept properties and litter. Minimum property standards should be enforced in accordance with the Building and Fire Codes. Sidewalks should be cleared of undesirable litter.

4. Continuity and clear ownership

If there are "gaps" on the street such as school yards or empty lots where an offender can pull a passer-by into an isolated area, priorities should be given to lighting, fencing, and possible redevelopment with a compatible land use that will not introduce new safety concerns.

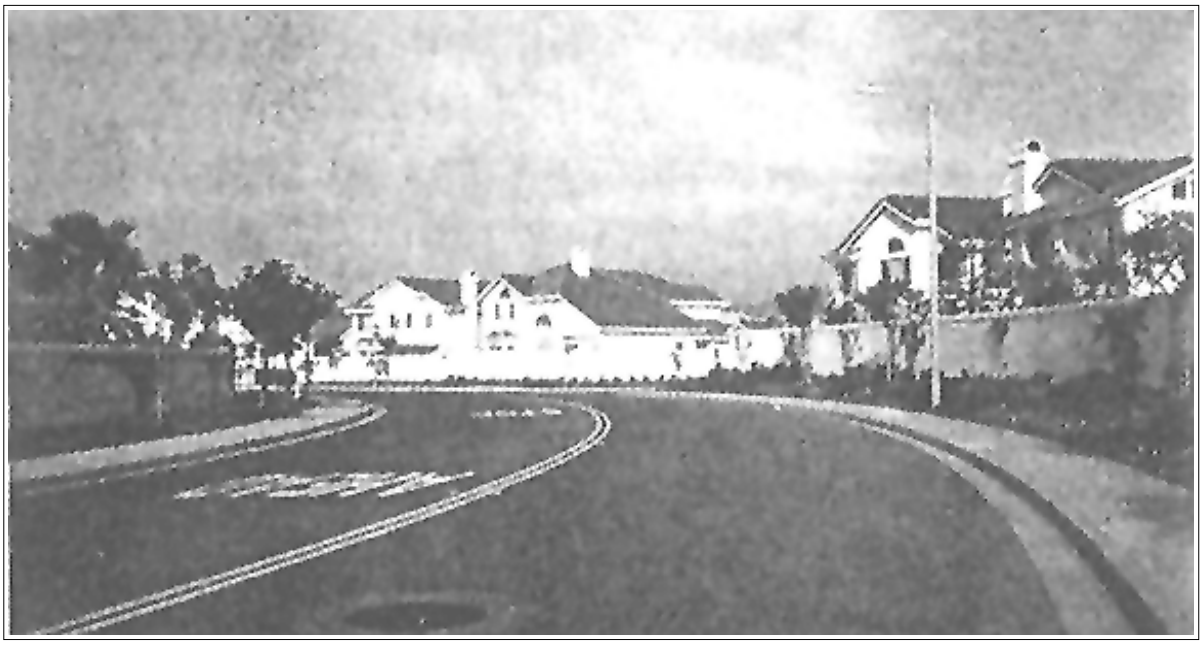
5. Street and back lane lighting

Lighting should be of sufficient intensity to light the sidewalk as well as the street. Trees and bushes should be trimmed adequately to allow unobstructed lighting.

Entrances to back lanes should be well-lit and clearly visible from the street.

6. Avoid fortress effects

Some suburban subdivisions provide exclusive boundaries to make the subdivisions more private. This creates a fortress effect disconnecting the residents from the surrounding community. While marking territoriality is encouraged for the individual lots, it is discouraged for subdivisions.



Walling off neighbourhoods creates "fortress" effect.

See also: Neighbourhood Planning and Design 38
Back lanes or Alleys 56

3.2.3 Neighbourhood Commercial Streets

ISSUE

Some neighbourhood commercial streets have problems with vandalism and other crime. Recent developments with parking in front have created gaps in the streetscape and have eroded the traditional pattern of main street development with housing above shops and buildings built to the front property line.

Twenty-four hour fast food and convenience outlets with front parking strips, sometimes serve as hang-outs for undesirables whose activities may be perceived as frightening especially when groups congregate. On some inner city commercial streets, drug dealing and sex trade have increased the residents' level of fear.

GUIDELINES

1. Housing above shops

Housing above shops along commercial streets should be encouraged. Balconies and windows from living areas in upper-storey housing should be provided.

2. Intensification of use

Street vendors, street entertainers, sidewalk cafes, and other activity intensifiers should be encouraged in inner-city and downtown.

3. Entrapment spots

Recessed, below and above grade entrances should be clearly visible from the street and well-lit.

4. Vacant lots

Vacant lots along shopping areas should be clear of hiding spaces, preferably fenced with a see through fence that allows full surveillance from the street or put to other uses, lie temporary parking or kiosk etc.

5. Continuity to street edge

Building frontage should be built to a continuous setback close to or on property lines, thus eliminating dead spaces and entrapment spots adjacent to the sidewalk.

Apartments above shops provide additional natural surveillance and activity on the street.

Continuous building frontage built to property line along Whyte Avenue adds to the street vitality.

6. Automated banking machines

If automated banking machines have their entrances on commercial streets, they should be preferably at street level or be visible and adequately lit. The automated banking machines should not be located in an entrance lobby of a building adjacent to bus stop that could allow criminals to loiter near the entrance by pretending they are waiting for a bus.

Automated banking machine located close to an entrance is visible from inside and outside of the building.

7. Sidewalk enhancement and activities

Sidewalk enhancements along commercial streets using special lighting, trees and furniture should be encouraged. These enhancements can contribute to attracting more people and thus promoting a sense of security.

Enhanced sidewalk along Whyte Avenue using special lighting, trees and street furniture.

See also:

	Land Use Mix	14
	Activity Generators,	16
	Surface Parking	28

3.2.4 Neighbourhood Parks

ISSUE

Edmonton has parks at City, District and Neighbourhood levels. In general, the parks are safe except for some isolated areas in the River Valley where incidences of indecent acts and exposure have been reported.

It should be stressed that isolation in parks cannot and should not be completely eradicated. The ability to escape the city to parks, including ravines and other forms of urban wilderness, is essential to the health of many urban dwellers. The issue is to create a choice and for the user to be in control. There is a need for park areas where safety is paramount, such as the main routes through parks, or the edge between park and street.

GUIDELINES

1. Natural surveillance and sightlines

Natural surveillance should be incorporated into the park design. Small parks or play areas should be clearly visible from adjacent streets. Small parks or the edges of larger parks should preferably be overlooked by housing or commercial developments. Where practical, walkways should have clear sightlines, especially where they curve or change grade.

A pathway through the park encourages residents to walk through or around it thus encouraging natural surveillance.

2. Entrapment areas

Entrapment areas should be avoided close to pathways through park design. Pathways may have a border of low-lying vegetation or high-branching vegetation, as opposed to coniferous trees and bushes that can easily create entrapment spots and reduced sightlines. Multiple entry and exit points should be provided in parks or playgrounds. Hills blocking the view of the park activities from roads should be avoided.

3. Clustering and Programming for a range of activities

To increase use and natural surveillance, activity areas may be clustered or programmed for a range of activities beyond team sports and children's playgrounds.

Some examples of other leisure activities include community services, cafes, snack bars, community gardens, gardening centres, childcare, adult and senior health programs and travelling libraries.

Water feature in a neighbourhood park encourages more activities.

4. Location of activity generators

Activities should be located either along the edge of parks close to vehicular traffic or gathered together along pedestrian walkways.

To avoid isolation, some benches, fitness trails, tennis or basketball courts and bicycle paths in parks could be located adjacent to the perimeter of parks or along through roads or combining them with the most used pedestrian paths.

For trails in heavily wooded areas, adequate signs should indicate that these trails take users into isolated areas and suggest alternate routes. Washrooms could be near children's playgrounds. Food kiosks may be located near playgrounds where they are visible.

Ice cream parlour in the park generates activity during summer months.

Play area next to school and well tied to walkways encourages its use.

5. Night time use

The planning and design of the park should take into account the possibility of night time use.

If some parks are programmed for activities, such as night tennis or evening walks, such areas of the park must be highly visible, properly lit and away from entrapment areas.

6. Signs and information

In large parks such as Coronation, Borden and particularly heavily wooded parks in the river valley and ravine systems, signs should clearly indicate, using words, symbols and maps, the location of telephones, washrooms, isolated trails, less isolated paths and any places where people are likely to be at most times while the park is open e.g., tennis courts. Signs should be located at decision points, such as the intersection of two major paths or the entrance to the park. Signs should indicate where and how help can be found and where maintenance problems can be reported. The hours of operation should also be posted.

7. Lighting

Lighting along paths and areas intended for night use should be provided at the same level as streets. A clear demarcation in terms of lighting levels should be introduced to indicate an area between areas not likely to be used at night, and areas where there is likely to be activity. Landscaping elements should be chosen and maintained so that they do not block light.

8. Formal surveillance

In large parks or parks with crime problems, formal surveillance should be considered either by police, park attendants or community organized patrols. Conducting safety audits will help identify the safety and security concerns. Park attendants or organized patrols should know how to respond to emergencies.

See also:

Sightlines	6
Lighting	8
Signs and Information	20
Overall Design	22
Downtown Parks and Open Space	52
River Valley	58

3.2.5 High Rise Residential Areas

ISSUE

In Edmonton, high-rise residential development is mainly concentrated in the MacKay Avenue area of the Downtown, along Saskatchewan Drive on the south side of the river and south of Jasper Avenue in the Oliver neighbourhood.

Generally, high density high-rise developments tend to have a high percentage of "empty" or largely unused space at ground level, separated into large zones that are exclusively used either for open green spaces and/or parking around the building with or without parking access.

This creates limited opportunities for natural surveillance and reinforces a sense of isolation. These problems are also often found in rental housing, especially where the maintenance may be poor to non-existent and formal surveillance is very limited.

GUIDELINES

1. Sightlines and hidden spots

Essential walkways through the area should have clear sightlines. Activities that will result in more eyes on the street along these routes should be promoted.

Priorities for safe routes should include the routes leading to and from transit stops, parking lots, and shopping areas. It is easier to provide safe routes when the streets adjacent to the high-rise building are public.

2. Intensify use at grade level

"Empty" space especially at grade should be used for housing, commercial and community services that are complementary to the needs of the residents.

3. Access to individual buildings

Entrances to individual buildings should be clearly visible from adjacent streets.

4. Signs

Street numbers should be visible from the public road. Site maps at central locations may be located for visitors, delivery people, and emergency services.

Small scale local retail facilities at ground floor of a high rise building increases natural surveillance of residential street.

5. Lighting

Pedestrian walkways leading to buildings should be lit to public street standards.

6. Formal surveillance

Locate management offices strategically, preferably near the entrance to the building or central location from where the entrances to buildings can be viewed. Management and maintenance staff should be trained to respond to emergencies. Residents should be encouraged to report suspicious activities.

7. Parking

Parking areas and access should be visible and well lit. Any parking in the structure should be access controlled, well lit, properly signed and preferably with formal surveillance.

8. Management of built space and security

Management should have explicit policies related to security that allow for improving the quality of the environment and fostering a sense of common purpose.

Parking area visible from nearby buildings.

See also:
Entrapment Spots 12
Interior Spaces in Multi-Unit Housing, 48
Parkades. 26

3.2.6 Interior Spaces in Multi-Unit Housing

ISSUE

Stairwells, laundry rooms, elevators and entrances to buildings are often cited as places of assaults. These places are often located in isolated areas with poor sightlines.

Designers should provide more attention to the use and location of interior common spaces at the design stage. On going building management issues should be addressed as part of a safety strategy for a multi-unit housing project.

GUIDELINES

1. Sightlines and hidden spots - Safe routes

Key routes, such as the ones from parking and laundry room to elevators, should have clear sightlines. The lobby should be open and visible from the interior of the building or the street. Avoid hidden areas in corridors and stairwells. If not possible, use transparent materials or fire doors with glass windows and security mirrors to improve sightlines.

2. Elevator sightlines

The interior of an elevator may be mirrored or have an angled mirror if the entire interior area is not visible to a person about to enter.

3. Location of activity generators

Activity generators such as party rooms and laundry rooms may be located near entrances to make both places safer.

4. Natural surveillance of laundry room and play areas

Laundry rooms should be viewed from the street or interior of the building corridor or elevators or stairs or entrance. Outdoor play areas should be visible from apartments, preferably from kitchens or living rooms.

5. Lighting

Lighting of common areas such as corridors, entrances, elevators and stairwells should be adequate. Areas of shadows should be avoided.

Laundry room with limited view from corridor.

6. Formal surveillance

Security or maintenance staff should patrol halls, parking areas and other common areas.

See also:
Sightlines 6
Predictable Routes 10
Entrapment Spots 12

3.2.7 School Yards

ISSUE

Some school yards may have environmental design characteristics which make a place less safe. Many schools are not used after school hours and are relatively isolated. Some are fenced in with few escape routes.

GUIDELINES

1. Location of school yards

Location and landscaping of school yards should be such that it encourages natural surveillance from surrounding buildings and streets.

2. Intensify land use

If possible, activities such as the use of school facilities for community activities or sports activities to bring people into the school yard during off-hours should be encouraged. Supervised recreation activities after and before school hours should also be encouraged.

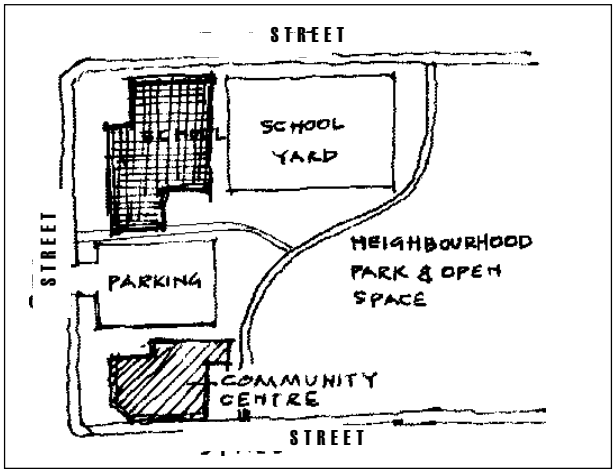
3. School expansion

Portable structures can create many hiding places. Ensure hidden places and entrapment areas are avoided

4. Safety audits/lighting

School areas prone to problems should go through the safety audits. Strategical lighting of the school areas should be encouraged.

See also: Sightlines 6



Sharing facilities with other compatible uses can bring more activity.

The location of school yards has natural surveillance from nearby buildings.

3.3.1 Downtown Area

ISSUE

Downtown Edmonton, like any other North American downtown often becomes less active after office hours. This has security concerns for the many office and service workers who work late, as well as for people who come downtown to enjoy the shopping, cultural and entertainment activities. Making the downtown safe and more secure is a complex proposition. Despite supporting policies and regulations to promote new downtown housing, few have been built.

Attracting more people to live downtown will contribute to the vitality and safety of the area particularly in the evening. A desirable downtown is a lively and dynamic place; a place to work, shop, live and experience a wide range of activities. Pedestrians can find their direction and move about comfortably, safely and conveniently. The ideal downtown presents opportunities for social cultural and commercial exchange with a variety of interior and exterior spaces that are used, safe and secure.

GUIDELINES

1. Natural surveillance through generating street-related evening activity

Building street frontages at their ground level should be enhanced and strengthened by incorporating pedestrian oriented activities with frequent views and access to internal spaces.

Retail and entertainment uses that open late such as restaurants and theatres should be encouraged at street level.

Street vendors and street entertainers should also be encouraged.

Rice Howard Way provides opportunities for sidewalk cafes, street entertainers and street vendors which generate pedestrian activity.

2. Reduction of entrapment spots

Back lanes and loading docks should be well-lit. Vacant properties should allow for natural surveillance so that there are no hidden spots that can act as entrapment areas.

3. Land use mix - residential

A variety of land use mix should be encouraged with emphasis on residential and appropriate supporting services.

MacDonald Place provides a land use mix of retail, office and residential.

4. Activity generation

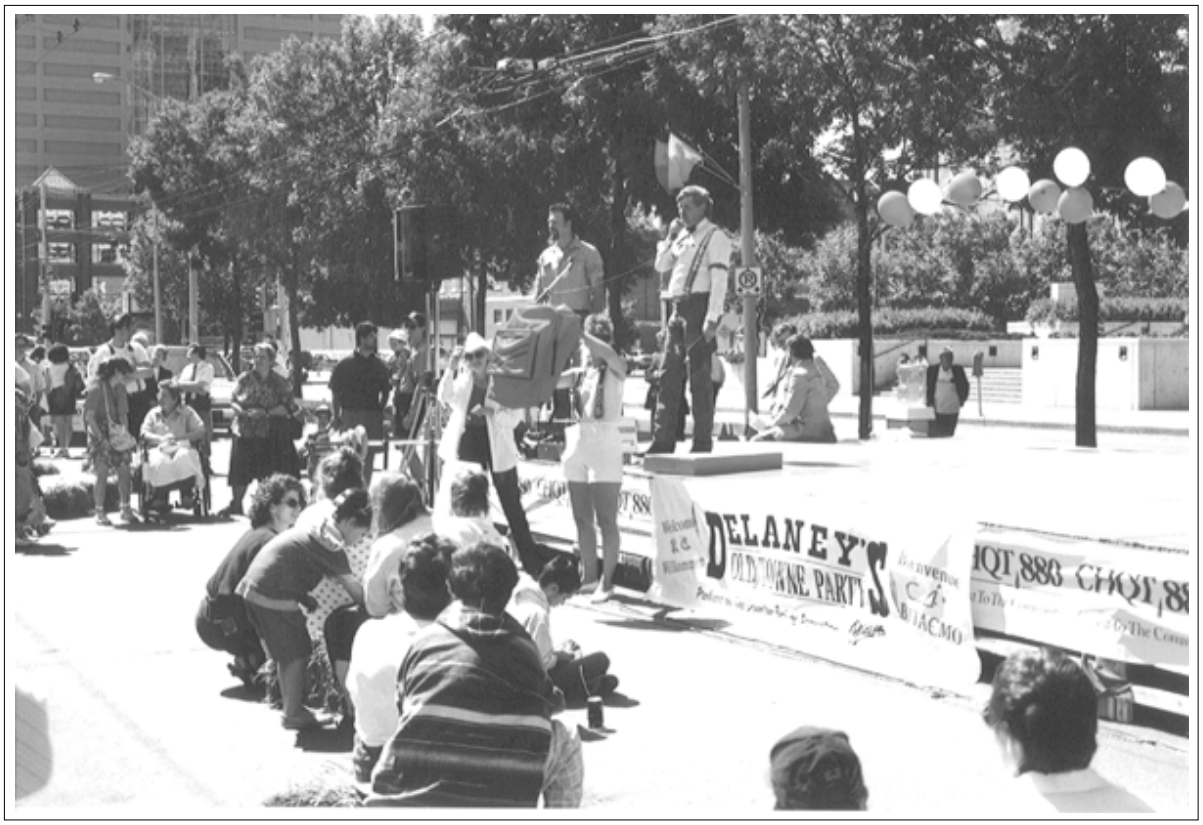
Cultural and entertainment activities should be encouraged. These uses bring vitality to downtown after business hours and increase appeal for hotels, restaurants, shops and more business to locate downtown thereby attracting more people and tourists.

5. Pedestrian Environment

It's people that make downtown exciting. To entice people to come, enjoy and stay in downtown, a comfortable, interesting and attractive pedestrian environment should be developed.

Special treatment of sidewalks with adequate width, trees, special lighting, banners, street furniture and well integrated public spaces with the buildings can contribute to an attractive and comfortable predestrian environment. Ensure that the pedestrian environment is visible and incorporates safety and security principles.

Attractive pedestrian environment along Jasper Avenue.



Cultural and entertainment activities bring vitality.

See also:

	Entrapment Spots	12
	Land Use Mix	14
	Activity Generators.	16

3.3.2 Downtown Parks and Open Spaces

ISSUE

An active Downtown offers a variety of parks and open spaces that are well distributed and connected . Such spaces are within reasonable proximity to the users and meet the needs of the people who visit, live and work there. People should feel comfortable walking from one activity to another.

Downtown parks and open spaces encourage passive activity and are well used especially in the summer during office hours. The North Saskatchewan River Valley provides a wealth of active and passive recreational opportunities right on the doorstep of the Downtown.

Downtown parks and open spaces are generally safe except for a few reported incidences of crime. Most of the parks and open spaces are located at street level and have adequate surveillance. Many of the existing parks and open spaces could easily be upgraded in terms of function and design to become safer and more effective. In the last few years, parks such as the MacKay Avenue School grounds and the Legislature grounds have been significantly enhanced visually to provide comfortable and safe places for use by the area residents and downtown visitors. Recently the Beaver Hills House Park was redesigned to improve sightlines from the streets. In spite of the parks and open spaces being visible, criminal activities could sometimes be attributed to other land uses or physical conditions of the built environment around or adjacent to the parks and open spaces. In such conditions, other strategies are needed besides improving the physical environment of the parks and open spaces .

GUIDELINES

1. Sightlines

Parks and open spaces should be visible from the street or surrounding office buildings.

The design of the park, including berms and landscaping elements, should not block the sightlines from the street and walkways in the park.

2. Range of activities

Parks and open spaces should be planned and programmed for a range of activities, even if they are intended for passive use.

Space for street performers and street vendors and supervised washrooms are some of the amenities that downtown users might appreciate. The ability of the public to comment on their downtown park needs should continue to be accommodated in the design and planning process.

Enhanced Beaver Hills House Park allows for natural surveillance and clear sightlines from adjacent streets.

Churchill Square is well programmed for activities especially during summer.

3. Activity generators

Park design should allow for the incorporation of activity generators such as food kiosks, information centres or special events. Activity generators facing the park such as outdoor cafes, restaurants to attract users should also be encouraged.

In winter, outdoor skating rinks, ice sculptures may also create activity in the park.

City Hall wading pool generates interest and activity .

4. Intensification and linkages

Parks and open spaces along the River Valley should be improved to provide access to the River Valley from downtown in order to increase the use of the river valley park system.

Parks and open spaces should complement and be integrated with the sidewalk system to develop an open space and pedestrian network in downtown that attract more people.

Heritage Trail links Downtown to adjacent neighbourhoods.

Given the long cold winter experienced in Edmonton, a number of open spaces should be incorporated into buildings to generate year around activities.

5. Signs

Parks and open spaces should be signed for emergency telephone or panic alarm. Posting of telephone numbers for reporting vandalism and maintenance is a good idea.

6. Maintenance

Parks and open spaces should be well maintained. Removing litter and graffiti, and replacing vandalized or burned out bulbs should be a priority.

7. Lighting

If the parks and open spaces are intended for night use, the paths and potential entrapment areas should be lit at pedestrian scale to street lighting level.

8. Formal surveillance

Formal surveillance through police, park patrol or community organized patrol is recommended in parks and open spaces prone to criminal activity on regular basis.If there are park attendants, they should be trained to respond in an emergency.

See also:

Sightlines	6
Lighting	8
Entrapment spots	12
Isolation	13
Activity generators	16

3.3.3 Downtown Commercial/Office Developments

ISSUE

Commercial/Office developments while busy during the day shut down after-hours and become isolated environments. This could present safety and security concerns for people working late.

GUIDELINES

1. Sightlines-receptionist area

Receptionists should have clear sightlines of entry doors from their work stations. Receptionists should have communication link with security staff or other workers in case of an emergency. Security numbers should also be posted in the office.

2. Washroom access

Washroom access could be limited by key system after office hours.

Reception next to elevator lobby provides surveillance

Buildings with blank walls at street level discourage activity and contribute to an isolated environment.

3. Clustering stores that are open late

Stores that are open late should be located near the entrance of the building to achieve better security.

4. Formal surveillance

After regular work hours, management should monitor the access to the building. Parkades used by large companies should provide designated parking spaces near an attendant or escort service for people working late. Offices should be connected directly to security staff.

See also:

Activity Generators	16
Parkades	26
Washrooms	57

3.4 Other Areas

3.4.1 Industrial Areas

ISSUE

Industrial areas become virtually deserted after work hours. Public transit service is reduced in off-peak hours to reflect demand. There is little provision for the safety and security of workers in industrial areas. Workers are employed in occupations involving shift work. These areas can also be dangerous because of numerous service alleyways, docks and general untidiness of related activities.

It is even more difficult to encourage mixed use development in industrial areas due to the potential environmental hazards of building housing on land that was formerly used by heavy industry.

GUIDELINES

1. Sightlines

Parking lots, the paths to parking lots and transit stops should be visible from the buildings that they serve. Parking lots should be visible from the street and well lit for night shift.

2. Land use mix - intensification of activity

Activities that could bring in a steady enough stream of people to make this area less isolated should be encouraged, e.g. food kiosk, restaurant, confectionery store etc.

3. Lighting

Lighting along entrance paths to buildings should be at an equal quality to the street lighting. Lighting should illuminate entrapment areas such as the entrances to loading docks.

Reporting burnt out or vandalized lights should be encouraged.

4. Formal surveillance

Parking lots and transit stops should be visible from the work stations of building security personnel. An escort service or buddy system could be created for late-night staff.

Medium industrial development provides good lighting and surveillance.

See also:

Sightlines	6
Lighting	8
Surface Parking	28
Surface & Underground Transit Stops	36

3.4.2. Back lanes

ISSUE

Back lanes are often isolated areas, poorly lit and poorly maintained. The back lane allows additional access to the property. Residential areas with back lanes have more incidence of garage break-ins than with the front drive garages according to Police Service. Other reported incidences include strangers invading the privacy of the residents in their back yards.

In the areas where back lane lighting was installed, a decrease in the reported break-ins of garages was noted.

GUIDELINES

1. Lighting

It is not practical to light all back lanes. Back lane lighting should be provided where safety audit, or history of incidences and risks warrant it.

Residents in areas prone to crime whose garages have backlane access should be encouraged to install and to leave their exterior lights on after dusk.

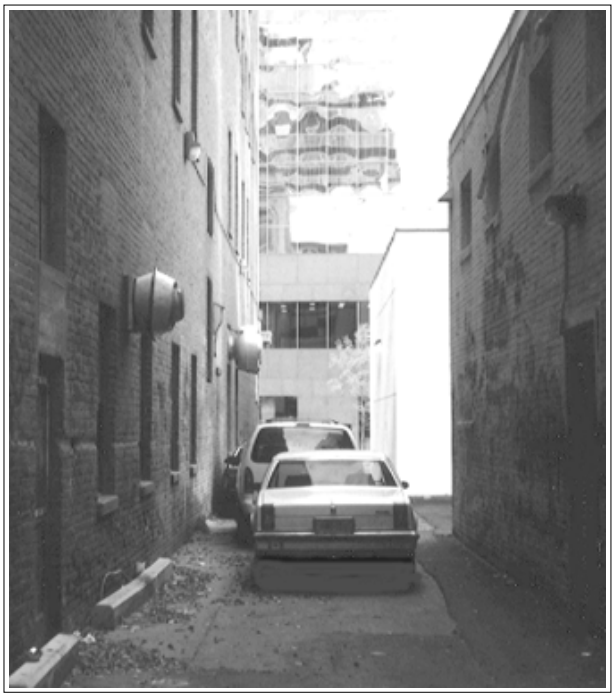
2. Avoiding entrapment

A back lane should have more than one entrance. A back lane with dead end should be avoided.

3. Maintenance

Maintenance of public and private back lanes should be strictly enforced.

Of particular concern are abandoned cars and open garages, sheds and any hiding areas in laneways.



Back lane with dead end can act as entrapment.

Maintenance and lighting can help the image and visibility of back lanes.

4. Intensification

Where housing, commercial use and sheds can be built in laneways, the entrance to the back lane housing, commercial use or shed should be visible from the back lane, or from the windows of other buildings. Sheds must be closeable and lockable.

See also: Lighting 8
Ownership, Maintenance and Management 18

3.4.3 Washrooms

ISSUE

Public washrooms whether located on public property or private property are often located in inconvenient, hard to find locations and are sometimes poorly signed.

GUIDELINES

1. Sightlines/location

Approaches to washroom entrances should be highly visible so that people cannot loiter or sneak in. Entrances to washrooms near playgrounds should be visible from the playgrounds. If there is more than one washroom, they should be located close to one another with clear sightlines.

2. Maintenance

Vandalism and graffiti should be promptly cleaned.

The quality of finish and maintenance are important to a pleasant and safe washroom.

3. Signs

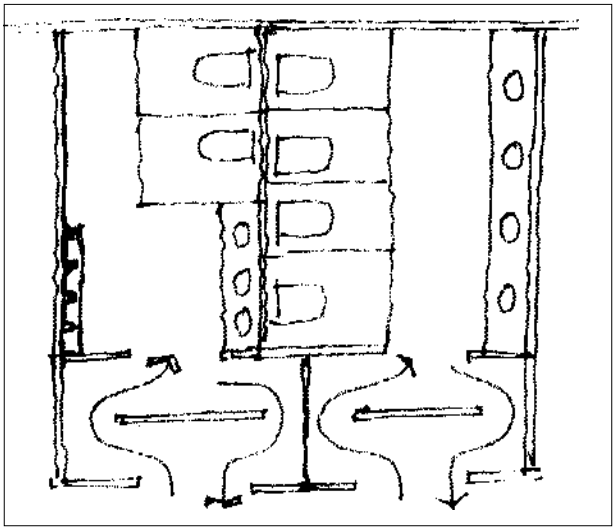
Washrooms could have signs alerting users to the location of emergency assistance and providing telephone numbers to report vandalism or maintenance problems.

4. Attendants

Attendants may be practical for washrooms that are unsafe.

5. Locks

While individual stalls should be lockable, outer doors should not be lockable without a custodian's key in order to reduce the danger of entrapment.



Washroom layout - without door

Washroom entry without doors reduces entrapment.

See also:

River Valley	58
Major Shopping Centres	59
University/College Campuses	60

3.4.4 River Valley

ISSUE

The North Saskatchewan River Valley is one of Edmonton's most treasured distinctive features. The River Valley has an extensive trail system, parks, wilderness areas, and facilities for health and recreation. It has natural as well as man made trails. Some trails are used both by pedestrians and cyclists and some areas can be used by handicapped. In winter, the trail is used mainly by pedestrians and some areas are used for cross country skiing. The trails are generally safe except for isolated incidents of indecent exposure. Most of the trails are not lit and late night usage is not encouraged. There are some well signed emergency telephones on major routes.

GUIDELINES

1. Lighting or no lighting

Lighting is not encouraged for the River Valley system except for areas with facilities where lighting should be provided at a residential level.

Lighting is discouraged for the river valley system.

2. Potential entrapment spots

Where practical, major pedestrian networks should avoid heavy vegetation and entrapment areas.

3. Natural surveillance

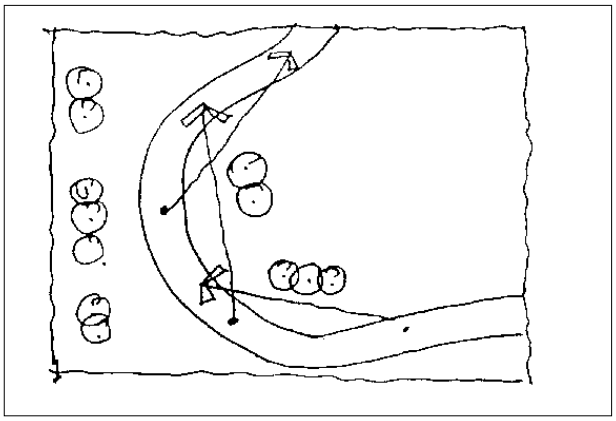
Facilities such as washrooms and panic hardware should be highly visible and clustered in grouping to provide natural surveillance from other facilities or amenities.

4. Programming areas for different activities

Programming of certain well-travelled areas of the River Valley with security concerns may be desirable with community input.

5. Signs

Signs should clearly indicate using words, graphic symbols and maps, the location of telephones and facilities in the park. Different trails should be identified through the use of colours indicating the length of circuit and approximate travel time on foot. Signs should be located at decision points such as the intersection of the trails or at the entrance to the trail. Signs may also indicate where and how to find help and where to report maintenance problems.



Unobstructed forward sight distance should be taken into consideration when planting trees along walkways.

6. Night time and winter use information

Information about night time and winter usage should be posted noting when the areas are closed or open.

7. Formal surveillance

Formal surveillance of the River Valley trails should be provided all year around.

See also: Neighbourhood Parks 42
Signs and Information 20

3.4.5 Major Shopping Centers

ISSUE

Major shopping centres have some safety and security problems mainly related to a small percentage of youth. Most of them hang around entrance doors or food services areas and this can cause a sense of fear for shoppers and visitors. Parking is generally safe, but there have been incidences of car break-in and theft. There have also been reported incidences of drug dealing and minor incidences of vandalism.

GUIDELINES

1. Location of washrooms

Approaches to washroom entrances should be highly visible. If the washroom entrance is through a corridor, it should be made highly visible by removing the doors leading to the corridor from the shopping area. Alternatively, the security office could be located in close proximity to the washroom corridor.

2. Sightlines and potential entrapment spots

Access to the service areas from the shopping corridor should be lockable ensuring that only service personnel have the access to the area.

3. Clustering of uses

Stores that open late should be clustered in one area, preferably close to the mall entrance so that these stores gain greater security through clustering and activities are confined to a smaller area of the mall.

4. Signage

Signs should be posted for washrooms, telephones, and other amenity areas in the shopping areas.

5. Lighting and surveillance in parking areas

Surface parking area should be lit so that one can see the back seat of the car. If parking is provided in a parkade structure, the access to the parkade and its interior should be well lit, free from entrapment spots with clear sightlines. Stairs or elevators should be visible and allow for natural surveillance.

Security office in front of washrooms provide formal surveillance.

6. Formal surveillance

There could be formal mechanical surveillance for areas and accesses to stores that operate late hours and facilities such as Automatic Teller Machines. Organized security patrol of the areas very prone to crime and vandalism is desirable. Formal surveillance is encouraged of areas prone to loitering problems.

7. Snow clearance:

When removing snow from parking areas and around the building ensure snow is piled in such a way that it allows for natural surveillance.

8. Transit Shelter

Transit Shelter may be integrated with the mall to allow for surveillance.

See also: Parkades 26
Surface Parking 28

3.4.6 University / College Campuses

ISSUE

College and university campuses are generally safe. There are some reported incidences of unacceptable behaviour due to intoxication. Bike theft is frequently reported. Theft of personal property is also a major concern inside buildings on the campuses.

GUIDELINES

1. Walkways

Frequently used walkways between buildings and other isolated walkways should be well lit to city street standards. Walkways should avoid entrapment areas. Emergency telephones should be well signed and lit along the walkways and bikeways.

2. Bicycle parking

Bicycle parking should be provided in front of the buildings in areas with natural surveillance from the surrounding buildings and walkways.

3. Sightlines and potential entrapment spots

Major walkways, bikeways, plazas and entrances to buildings should have clear sightlines.

4. Signage

Besides other prominent signs, colleges and university campuses should include signs for emergency telephones along bikeways, walkways and other isolated areas.

5. Designated spaces or escorts

Escorts available by telephone for students working late hours is a good idea and is already instituted on many campuses.

6. Washrooms

Washrooms should be well lit, highly visible and should not be located at the end of a corridor.

7. Formal surveillance

Walkways, bicycle routes and parking areas should be regularly patrolled by the campus/ college security. Surveillance through hardware may be provided for any underground pathway connections between buildings.

Prominent location of information booth at the Grant MacEwan Community College provides additional surveillance.

See also:

Sightlines	6
Predictable Routes	10
Entrapment Spots	12
Isolation	13
Activity Generators	16
Signs and Information	20
Overall Design	22
Bicycle Routes	30
Parkades	26
Surface Parking	28
Pedways	34
Surface and Underground Transit Stops	36
Neighbourhood Parks	44
Interior Spaces Of Multi-Unit Housing	48
Washrooms	57
Ownership, Maintenance & Management	18

Checklist

The design guide is summarized here in the form of a Checklist. The questions help you to check the safety and security of a project. This check will provide an initial crime prevention through environmental design review for the project. Please refer to "Design Guide for a Safer City" and check safety and security factors:

- Sightlines
- Lighting
- Predictable Routes
- Entrapment Spots
- Isolation
- Land Use Mix
- Activity Generators
- Ownership, Maintenance, and Management
- Signs and Information
- Overall Design
- Planning Concerns

Safety & Security Factors — CHECKLIST

SIGHTLINES	YES	NO	N/A	REMARKS
Can sharp corners or sudden changes in grades that reduce sightlines be avoided or modified?				
Does design allow clear sightlines, fences/shrubbery allow visibility?				
Do problematic spaces such as stairwells, underground pedways, lobbies of high-rises provide visibility?				
If sightlines are blocked can it be made visible by using glass, mirror or security cameras?				
Does design allow for future sightline impediments such as landscaping in maturity?				
Does access to hidden areas such as below grade pedways or parking areas have clear sighlines?				
LIGHTING				
Is there a necessity of lighting - if the path or space is not used at night?				
Does lighting provide visibility so that a person can recognize a face from 15m?				
Does lighting provide uniform spread and reduce contrast between shadow and illuminated areas?				
Does the location of fixtures illuminate pedestrian routes, entrapment areas or areas requiring visibility?				
Is lighting protected against vandalism or uses vandal resistant materials?				
Who is providing lighting maintenance i.e. bulb replacements, lighting blocked by landscaping?				
Are areas used for night time use lit to standards i.e. parking lots, parkades, space around buildings?				
Is backlane lighting required?				
PREDICTABLE ROUTES				
If predictable routes such as staircases, passageways or tunnels are not visible can they be eliminated?				
Are there entrapment areas within 50-100m of the end of a predictable route?				
Is there an alternate route which can be used and is it well signed?				
If a pedestrian cannot see at the end of a predictable route - can visibility be increased by lighting or surveillance?				
Are predictable routes lit uniformly with vandal proof lighting or natural lighting?				
Is there natural surveillance by people or through activities and land uses?				
Is there formal surveillance through hardware or personnel?				
Is access to help i.e. security alarm, emergency telephones, signage and information to seek help provided?				
ENTRAPMENT SPOTS				
Is there an entrapment spot and can it be eliminated?				
Can it be closed during off hours?				
Is the entrapment area visible through natural or formal surveillance?				
Does design provide for escape routes/help?				
ISOLATION				
Does design incorporate natural surveillance?				
Do problematic areas such as isolated routes and parking areas provide natural surveillance?				
If not - is formal surveillance i.e. emergency telephones, panic alarm, attendants or escort service provided?				
Can compatible land uses be provided to increase activity?				
LAND USE MIX				
Are compatible mix of uses e.g. housing above shops, provided to encourage natural surveillance and visibility?				
Can negative land uses that raise safety concerns e.g. liquor stores, be located where its impact is minimized?				

Safety & Security Factors — CHECKLIST

ACTIVITY GENERATOR	YES	NO	N/A	REMARKS
Can complementary uses that promote natural surveillance be provided?				
Does design provide for complementary users?				
Does design reinforce activity?				
Is the area programmed for various events or activities?				
Is a clustering of uses to support activity possible?				
Are grade-level activities incorporatedin design?				
OWNERSHIP, MAINTENANCE & MANAGEMENT				
Does the design mark territory through design features?				
Is space well maintained?				
Does the space display how maintenance problems are reported?				
Does the management of space provide maintainance priorities e.g. offensive graffitti is removed?				
Are snow piles that block visibility and act as entrapment area removed?				
Does the management provide personal safety?				
Can areas be programmed to facilitate increased activity?				
SIGNS and INFORMATION				
Is sign design legible from a distance of 20m?				
Does the sign convey message with adequate information?				
Is sign strategically located for maximum visibility?				
Are signs maintained and visibility not blocked by landscaping or dirt?				
Are maps provided in large areas such as downtown pedway, park system, LRT etc.?				
Does the sign display hours of operation?				
OVERALL DESIGN				
Do quality and beautiful built environments address safety and security concerns?				
Is the scale of development consistant with neighbours to avoid large gaps on streets?				
Is design of the built environment simple and easy to follow?				
Is there unusable space that can become dead space?				
How is the built environment used at night time?				
Are construction materials used to enhance safety and security?				
PLANNING				
Does street pattern promote safety and security?				
Is land pattern compatible?				
Is scale of the development compatible with the surrounding developments?				
Do berms/noise walls have natural surveillance from the windows and provide no hidden area?				
Do utilitiy corridors or open space allow for natural surveillance?				
Can pedestrian environment be improved if excessive car traffic is effecting pedestrian use of the street?				
Is fortress effect to make a subdivision more private and disconnected from neighbours discouraged?				
Are buildings built to a continuous set back closer to property line on shopping streets?				
Can safety audits be performed for large public space encountering safety and security problems?				
Is attractive, comfortable and safe pedestrian environment encouraged on shopping streets?				
Are links between various parks and open spaces visible?				

NOTES

1 1992 Oct., *A Working Guide for Planning and Designing Safer Environments*, City of Toronto Planning and Development Department.

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APPENDICES

APPENDIX - I	A COPY OF THE "DESIGN GUIDE FOR A SAFER CITY" REPORT approved by City Council on August 14, 1995
APPENDIX - II	AMENDMENTS TO THE GENERAL MUNICIPAL PLAN came into effect on October 16, 1995
APPENDIX - III	AMENDMENTS TO THE LAND USE BYLAW came into effect on October 9, 1995

APPENDIX - I

A COPY OF THE "DESIGN GUIDE FOR A SAFER CITY" REPORT

approved by City Council on August 14, 1995

Task Force on Safer Cities; Urban Design and Safety

RECOMMENDATIONS:

1. That the "Design Guide for a Safer City" (Enclosure I) be approved in principle for implementation by the civic administration, other levels of governments and the private sector.

2. That the Planning and Development Department be authorized to revise this Guide periodically to increase its effectiveness and report these changes to Council.

HISTORY

At the regular meeting of the City Council held September 15, 1992, City Council considered the report of the Task Force on Safer Cities: Urban Design and Safety, and passed the following motion:

> "That the Planning and Development Department, assisted by the Edmonton Police Service, develop a set of CPTED (Crime Prevention Through Environmental Design) criteria and performance standards for:
>
> a) approval by Council;
>
> b) inclusion, through amendment, in the Land Use Bylaw; and
>
> c) use in the review and approval of all proposed development".

DISCUSSION

As a result of City Council's September 15, 1992 motion, the Planning and Development Department assisted by the Edmonton Police Service, prepared the "Design Guide for a Safer City" in consultation with representatives from various professional associations, civic departments and interest groups (Enclosure II).

After collecting information from various municipalities in Canada and the United States, it became clear that it would be impractical to develop performance standards in all areas of CPTED principles. Each design situation is unique and it would be impossible to anticipate all contingencies. Therefore the Design Guide for a Safer City describes the CPTED situations, lays out principles, concerns and provides examples of CPTED applications.

Most municipalities in Canada have incorporated CPTED as an information item or policy at a General Municipal Plan (or equivalent) level. These municipalities generally implement CPTED through the development review process.

Enclosure III describes the implementation actions proposed by the Administration. Amendments have been proposed to both the Edmonton General Municipal Plan (Bylaw No. 11075) and the Edmonton Land Use Bylaw (Bylaw No. 11076). These amendment bylaws will appear before City Council on August 14, 1995 for public hearing. These amendments will incorporate CPTED principles into municipal legislation through General Municipal Plan policy and Land Use Bylaw performance standards.

JUSTIFICATION

Safety and the perception of safety are critical to the vitality of a city. The "Design Guide for a Safer City" provides important information regarding safety and security principles and concerns. The Guide is a tool which will assist design professionals, the building industry and communities to evaluate and apply safety and security principles to build safer physical environments. Consultation with community and interest groups will continue throughout the summer and on a regular basis to ensure the guidelines remain current and effective. The "Design Guide for a Safer City" will be amended periodically. Any regulatory changes will be implemented through amendments to the Land Use Bylaw or the General Municipal Plan.

ENCLOSURES

I Copy of the "Design Guide for a Safer City".
II List of Organizations consulted.
III Agenda for Actions to Implement the Design Guide for a Safer City.

Written by: Om Sharma / Kulbir Singh
Approved by: Bruce Duncan
Planning and Development Department
Approved by: for: John Lindsay Insp. A/Chief
Edmonton Police Service
July 24, 1995

ENCLOSURE II

LIST OF ORGANIZATIONS CONSULTED

The Design Guide for a Safer City was developed in consultation with the following organizations:

Urban Development Institute (UDI)
Building Owners & Managers Association (BOMA)
Safer Cities Advisory Committee
Edmonton Neighbourhood Watch
Association of Professional Engineers, Geologists and Geophysicists of Alberta
Alberta Association of Architects
Alberta Association of Canadian Institute of Planners.
Alberta Association of Landscape Architects

City of Edmonton Departments: Police Service, Parks and Recreation, Edmonton Power Authority, Safer Cities Initiatives of Community and Family Services, Edmonton Transit and Transportation Planning of the Transportation Department, Corporate Security of the Finance Department, and Civic Buildings of Public Works.

A city wide circulation of the Guide was initiated on July 4, 95 to the following organizations:

All above noted Organizations
Government of Alberta, Department of Justice

Downtown Business Association
Edmonton Downtown Development Corporation (EDDC)
Federation of Community Leagues
Old Strathcona Foundation
West Edmonton Business Association
South Edmonton Business Association
Beverly Business Revitalization Committee
Avenue Revitalization Project (118 Avenue)
Avenue of Nations BRZ Association
Kingsway BRZ Association
Old Strathcona Business Association
Fort Road and Area BRZ Association
124th Street and Area BRZ
Inglewood BRZ Association

Edmonton Public School Board
Edmonton Separate School Board
Grant MacEwan Community College
Alberta College
University of Alberta
The Northern Alberta Institute of Technology

ENCLOSURE III

AGENDA FOR ACTIONS TO IMPLEMENT THE DESIGN GUIDE FOR A SAFER CITY

1. Produce a CPTED video in consultation with Police Services explaining the Design Guide.

2. Prepare a public information brochure and poster explaining CPTED principles and application of Design Guide for a Safer City.

3. Make presentations to all professional associations, development industry and interest groups.

4. Educate Development Officers and other staff in the application of the Design Guide for a Safer City.

5. Ensure that planning instruments such as Neighbourhood Plans, Area Structure Plans, Area Redevelopment Plans, Sub-division Plans incorporate CPTED policies / principles.

6. Ensure that, where appropriate, redistricting and development applications incorporate CPTED guidelines through the development review process.

7. Ensure that the CPTED review does not unnecessarily delay the development review process.

8. Ensure the awareness of CPTED principles to the applicant.

9 Require applicants to complete a CPTED checklist to explain how the proposed development project incorporates safe environmental design.

10. Assist the civic departments to check all civic properties for CPTED principles and make improvements.

11. Work with other civic departments to ensure CPTED application in their projects.

12 Encourage the implementation of information signs in isolated public places.

13 Help Edmonton Transit with CPTED in its design or review of transit stations, pedways, bus shelters and stops with their location and access.

APPENDIX - II

AMENDMENTS TO THE GENERAL MUNICIPAL PLAN

came into effect on October 16, 1995

Gmp/950001

APPROVED

As to Form

CITY SOLICITOR

Bylaw No. 11075

A Bylaw to Amend Bylaw No. 9076, as Amended,
the Edmonton General Municipal Plan

WHEREAS City Council appointed "The Mayor's Task Force on Safer Cities" on October 9, 1990; and,

WHEREAS the contents of the final report of that Task Force, "Towards a Safer Edmonton for All", made a series of recommendations based on input from five Task Force Committees; and,

WHEREAS City Council, on September 15, 1992, endorsed the findings of the Task Force and directed the Planning and Development Department, with assistance from the Edmonton Police Service, to develop "Crime Prevention Through Environmental Design" (CPTED) criteria and performance standards and to implement these standards through the Land Use Bylaw and through a design review process; and,

WHEREAS the addition of CPTED and safer cities policy statements to the Edmonton General Municipal Plan will provide an appropriate policy direction and basis for amendment to the City's Land Use Bylaw No. 5996, as amended;

NOW THEREFORE after due compliance with the relevant provisions of the Planning Act, R.S.A. 1980, C. P-9, as amended, the Municipal Council of the City of Edmonton duly assembled, amends Bylaw No. 9076, as amended, as follows:

(a) by amending Section Five, Urban Design and Heritage, by adding a new Section 5.E. containing the following issue, objective and policy statements:

"ISSUE: GMP/ 950001

Promoting a Safe Urban Environment

The planning and subdivision of land and the design of buildings should incorporate the principles of defensible space. There is a need for the regulatory review and approval process to acknowledge these principles and to encourage design elements which foster public safety in urban developments. Consideration of these principles should form an integral part of the design review process. Public awareness and involvement in the design aspects of public safety can be improved through public/private partnership initiatives.

OBJECTIVE

5.E To improve the safety of the physical environment of the urban portions of Edmonton for its citizens.

POLICIES

5.E.1. Develop "Crime Prevention Through Environmental Design" (CPTED) guidelines intended to promote a safe, well-lit physical environment for the development of land and the construction of buildings in Edmonton.

5.E.2. Encourage CPTED principles through guidelines placed in the City's Land Use Bylaw.

5.E.3. Encourage the application of CPTED principles through a design review process as an integral part of development application review and approval.

5.E.4. Establish partnerships with the aim of developing a process of mutual learning between the community and the City Administration."

READ a first time this 14th day of August , A.D. 1995;

READ a second time this 14th day of August ,A.D. 1995;

READ a third time this 14th day of August ,A.D. 1995;

SIGNED and PASSED this 16th day of October ,A.D. 1995.

THE CITY OF EDMONTON

MAYOR

CITY CLERK

Rationale for General Municipal Plan Amendment

Within recent years, there has been an increasing level of concern for public safety. This awareness has resulted in a number of initiatives at the local government level, and has probably been most noticeable in recent policing strategies such as community policing and foot patrols in commercial areas. It has become increasingly evident, however, that elements of urban design can contribute positively towards discouraging criminal activity.

A major municipal strategy mandated to improve public safety at a number of levels was the creation of the "Mayor's Task Force on Safer Cities". As a result of the input from various committees within this Task Force, directives have been given to the City Administration to make legislative changes. These changes will develop "Crime Prevention Through Environmental Design" (CPTED) locational and design criteria, and encourage the inclusion of these elements in future development in Edmonton.

These requirements will be placed in two pieces of municipal legislation: the General Municipal Plan, and the Land Use Bylaw. Bylaw No. 11075 will amend the General Municipal Plan (GMP) by adding CPTED issue, objective and policy statements to the Urban Design and Heritage section of the GMP. These new policies will:

- require the development of CPTED guidelines to promote a safe, well-lit physical environment;
- encourage the use of CPTED guidelines through reference placed in the Land Use Bylaw;
- promote the application of CPTED policies on an on-going basis through the design review process; and
- encourage the establishment of partnerships to foster the ongoing implementation of CPTED principles.

Written by: Gary Leobold
Approved by: Bruce Duncan
Planning and Development Department
July 10, 1995

APPENDIX - III

AMENDMENTS TO THE LAND USE BYLAW

came into effect on October 9, 1995

APPROVED

As to Form

CITY SOLICITOR

Bylaw No. 11076, as amended

A Bylaw to Amend Bylaw No. 5996, as Amended,
the Edmonton Land Use Bylaw

WHEREAS City Council appointed "The Mayor's Task Force on Safer Cities" on October 9, 1990; and,

WHEREAS the contents of the final report of that Task Force, "Towards a Safer Edmonton for All", made a series of recommendations based on input from five Task Force Committees; and,

WHEREAS City Council, on September 15, 1992, endorsed the findings of the Task Force and directed the Planning and Development Department, with assistance from the Edmonton Police Service, to develop "Crime Prevention Through Environmental Design" (CPTED) criteria and performance standards and to implement these standards through the Land Use Bylaw and through a design review process; and,

WHEREAS the addition of performance standards to the Land Use Bylaw, which will encourage recognition of CPTED and safer cities guidelines in new development and redevelopment, will in part fulfil the above noted directive of City Council;

NOW THEREFORE after due compliance with the relevant provisions of the Planning Act, R.S.A. 1980, C. P-9, as amended, the Municipal Council of the City of Edmonton duly assembled, amends Bylaw No. 5996, as amended, as follows:

(a) by adding a new Section 77 as follows:

"77. **General Performance Standards for a Safe Physical Environment**

The Development Officer shall encourage the inclusion of design elements which readily allow for casual surveillance, particularly for commercial, industrial and multi-unit residential uses. These elements may include, but are not limited to, large window areas, high quality interior and exterior lighting, physical layout which reduces the vulnerability of pedestrians, (avoiding long public corridor spaces, stairwells, or other "movement predictors"), the placement and use of landscaping which limits areas of concealment, and the location of parking areas close to building access points. The Development Officer shall advise applicants of accepted urban design guidelines, such as "Crime Prevention Through Environmental Design" (CPTED) criteria in the layout and design of buildings and associated parking and loading areas, yards and landscaped areas, to promote a safe, well-lit physical environment."

READ a first time this	14th	day of	August	, A.D. 1995;
READ a second time this	14th	day of	August	,A.D. 1995;
READ a third time this	22nd	day of	August	,A.D. 1995;
SIGNED and PASSED this	9th	day of	October	,A.D. 1995.

THE CITY OF EDMONTON

MAYOR

CITY CLERK

ENCLOSURE II

Rationale for Land Use Bylaw Amendment

Within recent years, there has been an increasing level of concern for public safety. This awareness has resulted in a number of initiatives at the local government level, and has probably been most noticeable in recent policing strategies such as community policing and foot patrols in commercial areas. It has become increasingly evident, however, that elements of urban design can contribute positively towards discouraging criminal activity.

A major municipal strategy mandated to improve public safety at a number of levels was the creation of the "Mayor's Task Force on Safer Cities". As a result of the input from various committees within this Task Force, directives have been given to the City Administration to make legislative changes. These changes will develop "Crime Prevention Through Environmental Design" (CPTED) locational and design criteria, and encourage the inclusion of these elements in future development in Edmonton.

These requirements will be placed in two pieces of municipal legislation: the General Municipal Plan, and the Land Use Bylaw. Bylaw No. 11076 will amend the Land Use Bylaw (LUB) by adding General Performance Standards for a Safe Physical Environment to the General Development Regulations section of the Land Use Bylaw. This new Section 77 will require the Development Officer to encourage the inclusion of CPTED criteria with the design elements of new development or redevelopment, both in terms of building design and site layout. This section is aimed primarily at commercial, industrial and multi-unit residential developments.

Written by: Gary Leobold
Approved by: Bruce Duncan
Planning and Development Department
July 10, 1995