

CITY OF
LANGLEY



SAFE URBAN DESIGN

An Introduction to CPTED Principles and Strategies



CONTENTS

Introduction	2
What is CPTED?	2
Does CPTED Work?	3
Contemporary CPTED	3
Traditional CPTED Principles	4
CPTED Terms and Tactics	6
Reducing Opportunities for Crime and Nuisance Behaviour	8
What's Needed to Apply CPTED?	8
Implementing CPTED Principles and Strategies	9
References and Credits	10
Need More Information?	10

INTRODUCTION

This publication has been created to introduce the reader to the Principles and concepts of Crime Prevention Through Environmental Design (CPTED). When applied properly to new development the benefits of CPTED will result in safer more successful development and urban spaces and strengthen the perceptions of safety among the citizens and property owners of the City of Langley.

Over the past 25 years, people have begun to realize that many crimes can be prevented by following certain principles when planning and designing physical environments. This approach, which keeps user safety in mind throughout the development stages, is known as Crime Prevention Through Environmental Design (CPTED), pronounced Sep-ted. A comprehensive CPTED strategy would include steps such as; concept and design review, site assessment and report by CPTED practitioner or consultant with oversight from CPTED-trained police officers and municipal planning staff, planning / advisory committees.

This publication is intended as an introduction to CPTED principles and strategies and should not be construed as a definitive statement on crime prevention methodology.

WHAT IS CPTED?

In the 1970's early studies by Oscar Newman of high rise social housing projects and crime fostered the concept of using architectural design to create "Defensible Space" where residents would defend and control property they perceived as being theirs. Jane Jacobs's theme of "eyes on the street" used Natural Surveillance and relationships to make spaces less susceptible to crime. Crime and control research lead C. Ray Jeffery to coin the phrase; "man is a product of his environment¹" Jeffery is credited with mixing environmental engineering, urban planning and design into a strategy called; Crime Prevention Through Environmental Design (CPTED).

1. C. Ray Jeffery. Crime Prevention Through Environmental Design, Sage Publications, 1971

CPTED has been defined as the proper design and effective use and maintenance and management of the built environment can lead to a reduction in the incidence and fear of crime and an improvement in the quality of life. CPTED is about well-being and assisting in designing safer more successful spaces.



Figure 1. Langley Arts Alive Festival – Positive Activity Generator

Besides reducing the incidence of crime, good design can decrease its social and psychological impact and reduce the costs associated with the pursuit of criminals and court proceedings. Most importantly, CPTED improves the livability and safety of urban places, which benefits communities and society as a whole. There is no replacement for good design.

DOES CPTED WORK?

Over the years, CPTED principles have been successfully put into practice in many different situations. For example, in 1976, a company concerned about the number of robberies in its convenience stores decided to implement CPTED strategies. They improved both the interior and exterior lighting, redesigned the interior of the store, made changes to the lot on which the store sat, improved the surveillance and clearly marked the territorial boundaries. This led to a 30% reduction in the number of robberies².

As the number of success stories grew, more communities implemented security guidelines in their building codes. Many also created checklists for new development proposals. However, the down side of checklists ignores the unique, situational nature of crime. No single, cookie-cutter approach to CPTED will work in every situation and, in some cases checklists can actually increase the risk. For example, minimum standards of lighting can effectively deter crime in commercial areas. However, if the same standards are used to light an isolated walkway, people may consider it safe to use the walkway late at night, thereby placing themselves at risk. The application of CPTED is site specific.

CONTEMPORARY CPTED

CPTED today is much more comprehensive than it was in the 1970's. Although traditional strategies and tactics are still used, CPTED practitioners now take a more sophisticated approach to crime prevention.

One of the biggest changes is CPTED now takes into account the situational nature of crime, the public's fear of crime, nuisance behaviour and street disorder (such as loitering, street camping, panhandling, public drinking / drug use, graffiti and vandalism) and public crimes (such as theft from autos, break-ins, assaults and robberies).

2. M. Castleman. Crime Free, Simon & Shuster, New York, 1984

There is a direct relationship between the built environment and the behaviour of people. CPTED today not only focuses on opportunities for crime created by architecture, but takes into account the wider physical environment of a ¼ km radius around the subject site. This is called the CPTED Area of Influence and looks at land use relationships (both positive and negative) plus the routine activities of people in that geographical space whether they are supportive, nuisance or criminal.

For example, things that have a direct impact on the opportunity for crime include:

- Places where people gather;
- Location and design of shopping / commercial, recreation areas;
- Routes of travel for people to work, school, shop and play;
- Lack of suitable guardian, isolation, concealment or anonymity.

TRADITIONAL CPTED PRINCIPLES

There are four Key Principles in CPTED that are conceptually distinct and mutually supportive and overlap in practice. One is not more important than the other and should be used in conjunction with the others.

1. Natural Access Control is the physical guidance of people as they come and go through space by the use of real or symbolic features. Buildings, landscaping, ground affects, fencing, signage and lighting can be used to project a sense and a reality of access control.



Figure 2. Fencing, Landscaping, Pavers – Access Control



Figure 3. Landscape Directs Users to Sidewalk Access

There should be clarity as to where users are allowed to go and where they are not with no credible excuses for wandering.

- Ensure entrances are well designed so they visually and physically stand out;
- Entrances should have line of sight from beginning to destination, be well illuminated with overlook by windows;
- Site and property entrance points should project a sense of control and encourage users to access the site through designated portals.

2. Natural Surveillance can be achieved by designing in the opportunity to see and be seen. The placement of land uses, amenity areas, people and their activities in such a way so they can be observed. Such as:

- Create a visual and physical relationship between the building and sidewalk and street;
- Design landscape with clear sight lines especially along pedestrian routes;
- Improve visibility with glazing and transparent building materials;
- Consider the proper application of building and site lighting;
- Avoid designing entrapment spots and isolated spaces.

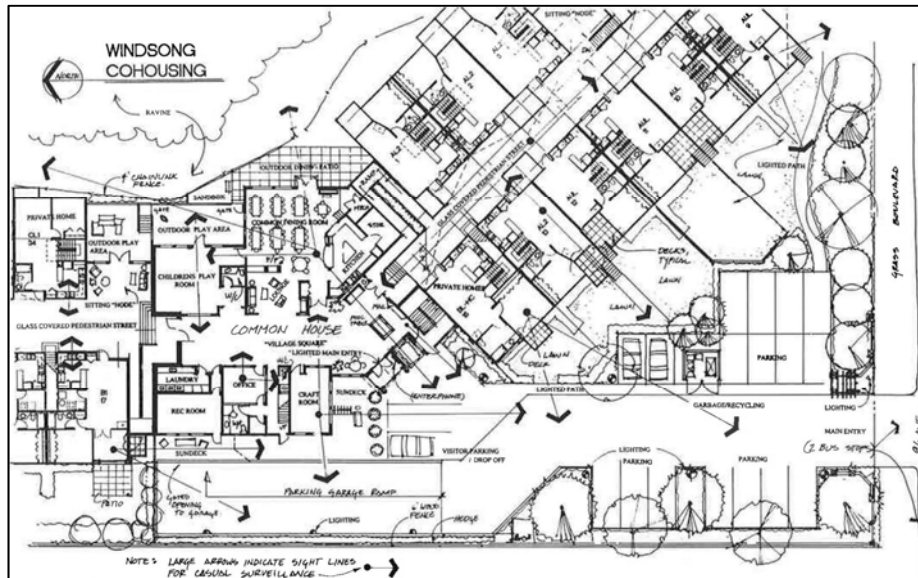


Figure 4. Natural Surveillance – Sight Lines

3. Territoriality or Defensible Space can be designed into development to promote responsibility and a sense of shared ownership. The goal is to project the property owner's sphere of influence beyond what would they would normally considered private space. People will take ownership of what they perceive as theirs when design encourages them to do so.

To project a sense of ownership spaces should be clearly delineated / defined as public, semi-public, semi-private and private. These are referred to as Transitional Zones or a Hierarchy of Space.

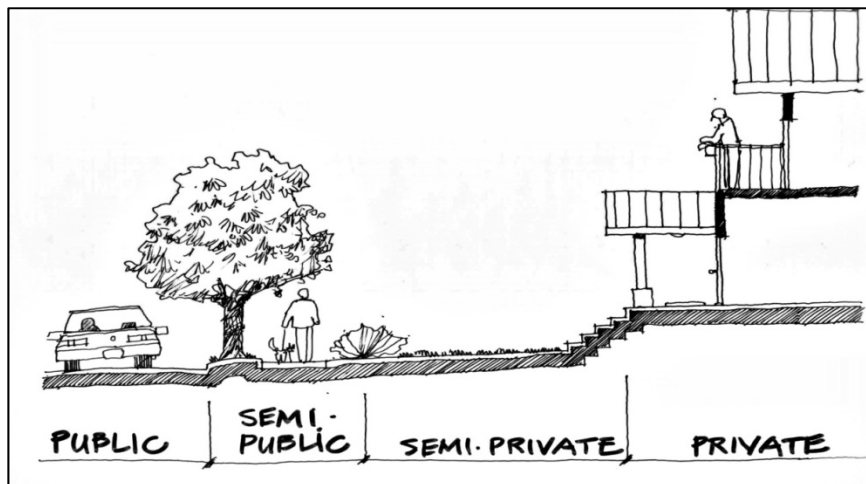


Figure 5. Transitional Zones or Hierarchy of Space

Hierarchy of Space refers to the ways land is used to identify distinct ownership, thereby reducing the potential for conflicting use of space. This form of personalization can be achieved by using real or symbolic definitions through:

- Building design and layout;
- Landscaping;
- Paving stone, pavement stamping;
- Raised or textured surfaces;
- Changes in grade;
- Fences, signage and wayfinding;
- Use of colour, artwork, murals;
- Traffic calming;
- Points of interest, community boards.

4. Maintenance and Management fosters the requirement that once a space has been built / developed it must be maintained. Human nature can be strongly influenced by symbols of order and disorder. This 'Pride of Place' projects a message that someone cares for and is watching out for the space. Unsupportive behaviour will not be tolerated and will be reacted to appropriately. Management refers to social and municipal programs or actual on-site property / supportive management and supervision.

The benefits of maintenance and management are:

- Continued use of space for its intended purpose;
- Connection with adjacent land uses and neighbourhood;
- Maintains access control, sight lines, spatial definition and site lighting;
- Enhances property values.

CPTED TERMS & TACTICS

A number of tactics and methods have traditionally been used to Assess and Implement the Principles of CPTED and make a space more observable and defensible.

1. Target Hardening refers to the use of security methods, devices, programs or people to lessen the vulnerability of potential targets to criminal activity. It can be achieved by such methods as:

- Installing security hardware to make a building more difficult to break into;
- Using vandal-resistant mounting hardware when exposed to public reach;
- Security guard / ambassador patrols;
- Securing access to water and electrical services on the exterior of buildings.

2. Hot Spot is a term used to describe an area / place that is experiencing high calls for Police Service. The calls could be nuisance or criminal.

3. Edge Effect is generated around the borders of different land uses that do not relate to one another. Or you could have an Edge Effect where a solid wall (no visual connection) faces the public realm or residential street. Research points to higher rates of nuisance behaviour and crime in these types of spaces.

4. Entrapment Spot occurs where space is defined by physically impenetrable barriers through which escape is impossible. There is one way in and the user must leave by the way they entered. These spaces can facilitate opportunity for crime and street disorder.

5. Community CPTED refers to the process of engaging community residents and businesses in the consultation process for planning, designing and building in their own communities. This is especially effective when large scale or sensitive projects are being proposed and when community schools, parks and recreation facilities are being planned & designed.

6. Movement Predictor is a predictable unchangeable pedestrian path or route that usually offers few or no choices to the user (e.g., pedestrian bridges, enclosed pathways and staircases). Often, there are no alternate routes and when landscaping becomes overgrown along its edges, the potential for concealment adds to feelings of unease.



Figure 6. Pedestrian Bridge



Figure 7. Enclosed Pedestrian Mall

Even though offenders are not hiding around every corner, the perception that they are can create fear and apprehension which, in turn, causes people to avoid the area. The area is then available to be used in ways other than those for which it was intended.

It is worth noting that, when fear of crime is addressed in the design of buildings, walkways and other areas, it often acts as a deterrent to actual crime. However, there are exceptions whereby reducing fear levels can increase risk by drawing people into an area they would otherwise likely avoid.

7. Conflicting User Groups or Land Uses can happen when features which are designated for one group or land use conflict with other groups for example:

- High school parking lot adjacent to a seniors' centre;
- Liquor primary business adjacent to a homeless shelter;
- Light industry next to single family residential.

Conflicts can also arise when different groups use design features differently (e.g., wilderness trails which are used both by cyclists and hikers). Such conflicts can be reduced or eliminated by proper planning.

8. Activity Generators are land uses that attract people, create activity and add life to a space. They are usually referred to as being positive in nature as the people they attract provide a supportive influence and thus help mitigate unwelcome activity and opportunity for anonymous crime. CPTED practitioners will classify Activity Generators as having a positive or negative influence to the development, adjacent land uses, the immediate neighbourhood and the surrounding ¼ km radius (Area of Influence).

REDUCING OPPORTUNITIES FOR CRIME AND NUISANCE BEHAVIOUR

In order to reduce the opportunities for crime and nuisance behaviour, CPTED practitioners ask a number of questions about a site within the context of designation, definition and design³.

1. Designation

- What is the intended purpose of the space?
- How was the space originally used in the neighbourhood?
- Are there conflicts with surrounding uses?
- Are land uses being planned in an unsafe or distressed area?
- How well does the surrounding environment support the intended use of the proposed space / development?

2. Definition

- How is the space to be defined?
- Where are the borders?
- Is there signage indicating what it is and who it belongs to?
- Are there social, cultural or legal definitions that affect how the space will be used?

3. Design

- How well does the physical design support the intended function?
- Does the design reinforce the designated purpose of the space and how it is to be used?
- Does the design define who should be using the space?
- Has design been built with context in mind?
- Does the design relate to on site land uses, adjacencies, the immediate neighbourhood and the surrounding ¼ km radius (Area of CPTED Influence)?

WHAT'S NEEDED TO APPLY CPTED?

To answer questions about the site so that CPTED principles and strategies can be implemented in the most effective manner, designers must assess existing environmental conditions and crime and incivility patterns. This will require a site visit during the day and night to identify and assessment the potential for problems at the site.

The extent of this site review process depends on the scale of the development. However, keep in mind the need to see the ¼ km radius around the project site as this will have a direct impact on what is being proposed / developed. The strongest relationships will be between the project site and the immediate adjacencies and then a one and two block radius.

Contemporary CPTED consultants and practitioners traditionally use a staged process:

1. Site Visit

Visiting the site day and night provides insight in to how the development site and the surrounding environs interact; where areas of concern might be especially in relation to what is being planned. CPTED designers will interview or survey local residents, business owners and other people concerned with the site. Sometimes, the practitioner will meet with community stakeholders / associations and gather local information.

³ Timothy Crowe, *Crime Prevention Through Environmental Design*, Butterworths-Heineman, Boston, 1994.

2. Preliminary Review

During this stage the CPTED consultant might meet with CPTED-trained police officers, city planners / architects and review the site in terms of CPTED principles. This process can take the form of planning meetings, focus groups or public meetings.

Larger scale projects may require the gathering of calls for police service for the site plus an appropriate surrounding area up to a ¼ km. Crime statistical data should go back a minimum of five (5) years and then be analyzed and put into context with the proposed development. This can be a long process due to the amount of data generated. Most [projects may rely on anecdotal information for police sources or a one to two year gathering of the top five calls for police service, property and the more serious persons crime stats.

3. Design Review

During the preliminary review, the consultant / practitioner will obtain concept and design plans from the development team and begin relating what is in plans to the site visit observations. Any areas of concern with the plans in relation to the surrounding environment will be communicated back to the team in meetings or commentary letters / reports. The design team takes the CPTED concerns and designs or programs them out. This process may take a few revisions before all the CPTED concerns are mitigated.

4. Final CPTED Report

Once final changes have been made to the working plans the CPTED consultant will prepare a Final CPTED Review Report showing the areas of CPTED concern and how the design team mitigated them. Some experienced CPTED consultants may conclude their report with their opinion on the overall design in relation to the surrounding environment.

The Final CPTED Review Report will accompany the applicant's Development Approval Package.

IMPLEMENTING CPTED PRINCIPLES AND STRATEGIES

Effectively implementing CPTED principles and strategies involves a number of people with different responsibilities in the community:

- Designers and Developers can ensure CPTED principles and strategies are part of their plans through CPTED-trained staff or consultant.
- Property owners can incorporate CPTED incorporated into their sites and operations.
- Elected officials can support CPTED in their communities by encouraging CPTED Review Reports on all new development proposals.
- Municipal planning, by-law enforcement, parks and recreation and building inspector staff can incorporate CPTED principles into their daily responsibilities, development review and assessing environments experiencing street disorder and incivility.

Most municipalities in B.C. have CPTED-trained staff and police officers who can provide in-house support with CPTED plan and site review. CPTED courses and CPTED consultants are other good sources of assistance. Professional consulting or security firms with CPTED-trained staff can also formally apply CPTED in new developments.

When everyone works together to embrace and implement CPTED principles, our communities benefit by becoming safer places in which to live and do business.

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NEED MORE INFORMATION

City of Langley
Development Services & Economic Development Department
20399 Douglas Crescent,
Langley, BC., V3A 4B3
Tel: (604) 514-2800

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