Crime Prevention Through Environmental Design

CPTED

for

Planners, Architects & Associated Professionals

Certified Online Training - Weeks 1-6

Terence Love

DOCCC

Design Out Crime and CPTED Centre

OVERVIEW

This text focuses on the use of **Crime Prevention Through Environmental Design** (CPTED) for Planners, Architects and Associated Built Environment Professionals to satisfy development authorities and reduce crime and manage anti-social behaviour.

The book focuses on the ***process*** of using CPTED in the design of the built environment at the broad scale in planning; at the individual building and place scale of architecture; in the economic management of development; in the roles of other built environment professionals such as strategic planners and policy makers, project managers, civil engineers, security controllers and building managers.

It describes professional planning and design tools that enable CPTED to be integrated effectively into current development practices and includes:

- 14 CPTED design tools
- CPTED across the cradle-to-cradle development life cycle
- Using targeted CPTED
- Designing environments to reduce fear of crime
- CPTED design for pandemics and other 'shocks'
- Practical design of CPTED using massing, building audits, cctv, lighting etc
- CPTED and Counter-Terrorism for Hostile Vehicle Management and other public threats

Each section in the book lists key points that need to be considered in applying CPTED for each specific situation and suggests strategies that have been found to be effective.

The information in the book is grounded in well-established ***evidence*** of the effectiveness of particular methods in specific situations. The author provides notes where contradictions in evidence have been found, or where the evidence appears to contradict assumptions in the field.

LIABILITY

Crime prevention is a developing field of practice and knowledge that is increasingly based on evidence where available. Currently, such evidence is incomplete and in some cases contradictory. Evidence is the only sound grounding for theory and practice.

The information provided in this book is given in good faith on the basis of 2 decades of work in this area. The author and the publisher and their respective organizations accept no liability in any form for any consequences from using the information in this book.

COLOPHON

Title: CPTED for Planners, Architects and Associated Professionals

Author: Terence Love

Publisher: Design Out Crime and CPTED Centre
(an imprint of Praxis Education)

PO Box 226, Quinns Rocks, Western Australia
admin@praxiseducation.com
https://praxiseducation.com

ISBN: 978-1-876394-24-0

OVERVIEW OF THIS CPTED COURSE

This certified online **CPTED for Planners, Architects and Associated Professionals** course addresses the following topics:

- 14 CPTED design tools
- CPTED in: new build/refurbishment/ redesign to address crime/building maintenance/building life-cycle 'cradle-to-cradle'
- CPTED and massing design
- Using CPTED site and building audits
- CPTED for developers
- Benefits of targeted CPTED
- New Evidence from CPTED
- CPTED to design industrial and commercial buildings to minimise theft and vandalism
- Effective use of CCTV in CPTED
- Lighting and CPTED
- Designing the built environment to reduce anti-social behaviour
- CPTED in designing the built environment for COVID-19 and similar pandemics
- Hostile Vehicle Management/C-T via street furniture, road detailing & access control
- Designing built environments to reduce fear of crime
- Practical real world CPTED individual exercise (desktop and/or site)

WEEK 1

Topics covered in Week 1 include:

- Welcome and Housekeeping
- Overviews
- What is CPTED?
- CPTED generations and the Built Environment
- Differences between CPTED, Security and Policing
- How CPTED reduces crime
- Natural Surveillance
- New insights from evidence – 1 Fear and Crime Risk
- 5 minute break
- New insights from evidence – 2 CCTV
- Territorial Reinforcement
- Q&A
- Practical exercise

WHAT IS CPTED?

CPTED is ***Crime Prevention Through Environmental Design***.

CPTED is pronounced '*Sep-TED*' (as in Big Ted, Little Ted and CPTED)

CPTED is '***designing the environment to reduce crime***'

The 'environment' of CPTED includes:

- Buildings, roads, built infrastructure
- Social infrastructure
- Culture
- Psychological influences
- Natural surroundings
- Technology
- Manufacturing
- Media
- Digital worlds
- Standards
- Education
- Policies
- Governance

- Legitimation

HISTORY OF CPTED

The origins of CPTED are in the effective Community Development and Community Participation in Planning movements that emerged in the US in the 1960s and earlier with key figures including Elizabeth Wood, Jane Jacobs, Schlomo Angel and Christopher Alexander.

C Ray Jeffery coined the term CPTED in 1971. His book on crime prevention provided a comprehensive picture of CPTED. However, at the time Jeffrey's approach was regarded as too complex. Now his work is considered much more central to the field.

1n 1972, Oscar Newman developed the rather more simple and almost militarist 'Defensible Space' theories for architects to implement (the term 'defensible space was coined 20 years earlier by ethologist John Bumpass Calhoun in writing about his research into rat population behaviours).

For the next 20 years, CPTED was dominated by the 'Defensible Space' concept. During that time criminologist Tim Crowe refined the ideas of Defensible Space and started the processes of training professionals in CPTED.

During the 1980s, the 'Broken Windows theory' emerged, and with it the idea that maintenance and the image of a location were important in reducing crime.

In parallel in the UK, emerged the richer concept of *Situational Crime Prevention* which focused on the crime scene as a situation that involved a crime target, potential offenders and defenders along with environmental factors that shaped whether a crime occurred and what kind of crime occurred

In the 1990s, Greg Saville and others proposed the idea of *2nd Generation CPTED,* which in addition to the situational aspect of 1st Generational CPTED, identified that 1st Generation CPTED, particularly, the CPTED of Defensible Space, depended on factors relating to neighbourhood design, communities and social-ecology.

During that time increased enthusiasm for *Routine Activity* and other *Opportunity-based* theories of crime prevention also emerged.

Alongside this, the advent of new mapping and mathematical methods of analysis led to the fields of Space Syntax and Design(ing) Out Crime for products including what became known as HOT, VIVA and CRAVED classifications of products prone to be stolen.

It was a decade that also saw the strong commitment to CPTED by the UK Home Office and other national governments and increasing levels of CPTED research in the field of Environmental Criminology.

Since the turn of the century (2000), and especially in the last decade (2010-2020), **evidence** has increasingly been the cornerstone and reference for CPTED. To this date, CPTED had been primarily based on speculation and expert opinion - some of which is now been identified as unfounded.

An example, Jane Jacobs' suggestion in the 1960s that 'eyes on the street' would reduce crime was a speculation without a foundation in evidence. Since that time, 'eyes on the street' has been widely used in natural surveillance on hearsay worldwide - used without any real evidence or justification underpinning it. Or evidence that it works.

Evidence, more recently, is now showing that 'eyes on the street' and natural surveillance are more complex. Increasing the number of eyes on the street can reduce crime in many situations. However, it can also increase crime in some circumstances.

Criminological research and trustworthy evidence about crime and CPTED methods are now providing a clearer picture of what actually works and what doesn't and in what

circumstances.

Such research and evidence is, however, increasingly overturning previously taken for granted assumptions about crime prevention methods in general. For example, during the 1980s evidence of problems with the Defensible Space approach to CPTED emerged , which it is why it is used less now.

Currently, the criminological evidence is challenging crime reduction assumptions about mixed-use, pedestrian-friendly planning.

In all these situations what has emerged historically is that **effective CPTED is targeted, contextual and place based**.

The most recently evolving pathways of CPTED are in the areas of geographic juxtaposition, counter terrorism, the extension of social aspects of CPTED into its 3rd generation involving health and sustainability, and the new field of Cyber-CPTED addressing crime relating to Smart Cities, Smart-Buildings, internet of things (IoT) digital control of infrastructures (e.g. SCADA) and the digital built environment.,And the new kinds of crime that are emerging at the junction of the physical and digital worlds.

1ST GENERATION CPTED

1st Generation CPTED focuses on the details of the architecture and crime in purely physical (and non-digital) terms.

Its origins and the methods of 1st Generation CPTED derive around the dominance of Oscar Newman's conception of CPTED as Defensible Space during the 1970s and 1980s.

Its original core features included:

- Natural surveillance
- Natural access control
- Territorial reinforcement
- Milieu (now called geographical juxtaposition)
- Maintenance

With the evolution away from Defensible Space, CPTED practitioners and Environmental Criminologists explored other avenues including:

- Rational Choice Theory
- Routine Activity Theory
- Activity Support
- Broken Windows Theory
- Situational Crime Prevention

Rational choice theory

Rational Choice Theory holds that many criminals are rational in their thinking. It claims that criminals consider both the benefits and the risks before undertaking crimes.

This rationality means there are opportunities to discourage crime from happening by intervening to create increased costs/risks or reduce potential benefits for criminals.

There is evidence for this for many types of crime. However, some crimes, are not so rational: for example those undertaken when the criminal is acting under the influence of drugs, strong emotions or mental health factors.

Situational Crime Prevention adds an extra dimension to rational choice theory by breaking a crime into several steps. At least some of these steps may be open to rational influences.

Routine Activity Theory

Routine Activity Theory is part of a body of theories that together were collectively known as Opportunity Theories of crime prevention.

Routine Activity Theory (RAT) maintained that a crime is only possible if there is a potential offender, and a target or victim together in the space and at the same time without potential guardians.

This is sometimes seen as a triangle, the RAT triangle, in which the sides are: motivated offender, crime opportunity, and lack of defenders. All sides of the triangle must be in place for a crime to occur.

A secondary aspect of Routine Activity Theory is that crime primarily occurs and depends on ***the intersection of routine activities of criminals with the routine activities of victims***.

In short, criminals, during their routine activities, become aware of crime opportunities. This is in part an explanation of why crime tends to occur primarily within a couple of kilometres of a criminal's residence.

Broken Windows theory

During the 1980s, there was significant concern about urban decay and its effects on crime.

In the US, police regarded the existence of 'panhandlers' and other signs of disorder as the starting point for larger crimes and misdemeanours.

The result was a crime prevention theory coined as the 'Broken Windows Theory' in which the crime process was seen as that in which one broken window leads to many more broken windows and then other vandalism and crime.

Currently this has evolved into the idea that ensuring a maintained image and undertaking maintenance in a location reduces crime,. There is some evidence that this is effective.

Activity Support

In many locations, particularly in business areas, natural surveillance is not available at certain times of the day, or on some days.

The idea of Activity Support is that additional activities can be organised to increase the number of lawfully behaving people in a location to provide increased natural surveillance at particular times.

The intention is for this increase in natural surveillance along with the cultural pressures of individuals undertaking lawful activities to help discourage unlawful activities and crime.

Situational Crime Prevention

Situational Crime Prevention (SCP) expanded the UK Police role beyond the justice system into crime prevention.

After detailed examination of crimes, 25 methods were devised to control the related situational factors that could increase and reduce crime.

SCP's focus is also to reduce crime opportunities rather than punish or rehabilitate offenders.

SCP aims to reduce the offender's motivation or intent, and reduce cues that increase the motivation to commit a crime.

SCP emerged more than 40 years ago, and its major concepts include rational choice, specificity, opportunity structure, and its 25 prevention techniques.

Most of SCP's 25 methods are part of CPTED, the remainder are typically located within a Policing viewpoint.

Secured By Design

Secured by Design (SBD) is a security-focused, standards-based suite of protocols first created by the UK Police and now spun off into a private company.

Whilst focused primarily on security via improving the quality of locks, doors and windows, it also includes CPTED principles.

More details are available from https://www.securedbydesign.com

2ND GENERATION CPTED

During the late 1970s and 80s there began a re-emergence of community development and community participation in planning – linked to Alexander's Pattern Language – plus youth clubs and neighbourhood infrastructure.

2nd Generation CPTED followed on this path and focused on reducing crime by extending 1st Generation CPTED to neighbourhoods, communities and social-ecology issues. It followed CPTED developments in the Netherlands.

The approach emerged around 2000 long after it was realized that Defensible Space architecture depended on well functioning neighbourhoods, schools, social groups, businesses, and the development of communities and community infrastructures.

Technologically, the approach of 2nd Generation CPTED also aligned with the emergence of software in planning relating to space and use analyses, space syntax, GIS etc.

The language of 2nd Generation CPTED was developed by Saville and Cleveland via SafeGrowth in the late 1990s.

3RD GENERATION CPTED

3rd Generation CPTED adds Health and Sustainability to 1st and 2nd Generation CPTED. The term was coined by Saville from the SafeGrowth group in 2013 and followed the path of their earlier 2nd Generation CPTED .

In fact, however, the relationship between crime prevention and health is much older and goes back at least to the 19th century when crime was considered a disease and health problems and crime were addressed similarly.

Links between crime and urban sustainability are also longstanding. For over a century, urban decay has been typically associated with increasing rates of crime. Many aspects of sustainability and eco-design have been included by others (including Secured By Design) over the last 40 years. The primary contribution of Saville and colleagues has been to include this theoretically in a sequence of evolution of CPTED .

CYBER-CPTED

The concept and term CyberCPTED was coined by Dr Terence Love and the detail and methods have been developed over the last 4 years within the Design Out Crime and CPTED Centre.

CyberCPTED addresses the reality that life and crime are increasingly part-physical and part-digital.

As a result new forms of crime are enabled by these new kinds of crime opportunities at this interface between the physical and digital realms.

These crimes often depend partly on physical and partly on combinations of factors that reveal new crime opportunities in these new areas including:

- Smart Cities
- Smart Homes;
- digital lives, media and education;
- tele-work;
- tele-health;
- driverless cars;
- autonomous robot systems of manufacturing, food production, building and social care;

- digitally-managed critical infrastructures;
- digital warfare
- digitally-based communication and control.

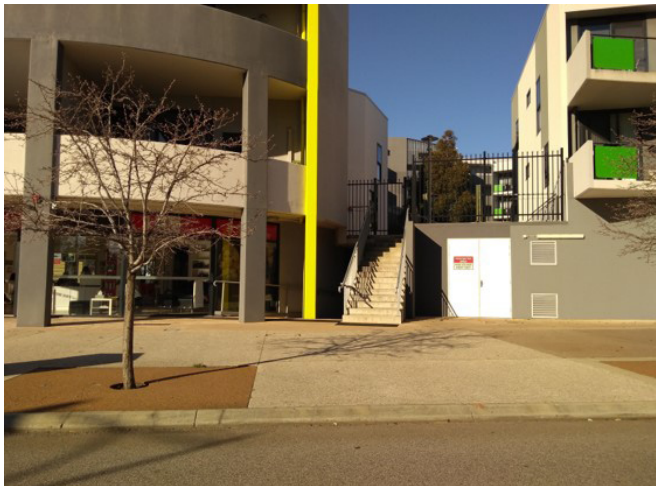
Such new crimes use the digital and physical together in ways that neither CPTED not cyber-security address well.

CyberCPTED combines cyber-security with traditional 1st to 3rd Generation CPTED methods and principles and what Bruce Schneier has called *public interest technology*.

CyberCPTED addresses four aspects of the above:

- There is a new body of situations that are part-physical and part digital
- There are new kinds of crimes in these combined physical and digital spaces
- Neither CPTED methods nor cyber-security methods are effective alone
- CyberCPTED also includes some new approaches over and beyond those of CPTED and cyber-security.

HOW CPTED REDUCES CRIME



Crime is low primarily because people choose to act lawfully due to socio-cultural pressures.

CPTED reduces crime by cultural, psychological and physical factors including:

- Increasing offenders' risk of being observed
- Identifying unusual behaviours
- Signalling that a location is not worth attempting criminal acts
- Indicating a location might be well defended
- Defining appropriate behaviours in particular places
- Making offences more difficult and time consuming
- For the offender, the effects of CPTED are to:
- Increase the costs and reduce the benefits of crime
- Increase understanding of the difficulties and consequences
- Help create a pattern of lawful behaviours

DIFFERENCES BETWEEN CPTED, SECURITY AND POLICING

Late at night, a young person hops over a garden fence and sprays graffiti on the house.

Fortunately, the owners had a security firm install top quality CCTV surveillance with face recognition and linked to the city's Police CCTV monitoring centre.

As a result, police using state of art predictive policing were waiting at the end of the street.

They arrest the offender confident in their prosecution due to the face recognition evidence.

Question: How good is the crime prevention?

Answer: ***Crime Prevention failed. The crime has been committed.***

CPTED focuses on designing the environment to encourage offenders to avoid committing crimes and to avoid crimes happening at all.

A **Security** focus would be to install CCTV and alarms and locks.

A **Police** focus is to ensure the offender is identified and prosecuted and the criminal justice system implemented efficiently and effectively.

BENEFITS OF CPTED

CPTED is perhaps THE most cost-effective way to reduce crime. When CPTED features are implemented at the design stage this is typically at close to zero cost.

CPTED is effective at reducing crime and anti-social behaviour. It offers planners and architects a structure to arrange the built environment to improve health, wellbeing and quality of life.

Because CPTED features are changes to the environment, they provide 24/7 support for Police, Community Safety Officers, Neighbourhood Watch and others to reduce crime - even when they are not on location.

The effects of CPTED increase over time because CPTED changes culture and behaviour habits and over time builds a culture of lawfulness.

CPTED provides an especially useful tool for addressing 'difficult' or intractable community safety, crime and anti-social behaviour problems. It offers a strategy to chip away at such problems by changing the environment and culture such that the scale of difficulty is reduced. In many cases, difficult problems become simplified and easier to address.

TERRITORIAL REINFORCEMENT

History of Territorial Reinforcement

The underlying concept of territorial reinforcement goes back a long way in human history. It was clearly found in the buildings of early warlike empires such as that of the Assyrians from around 2500 BCE and in the structure of castles, forts etc.

The concept of **territorial reinforcement** as it has emerged in CPTED has a more recent history that relates more to criminal human behavioural responses in times of peace.

One pathway follows the study of *ethology*, the scientific study of animal behaviors, which in the Western world appears to have originated around 1800 with Darwin and others. There is also evidence of earlier ethological analysis of human behaviour in Greek Science (~600BCE) and Islamic Science (~900CE).

In the 1940s, John Bumpass Calhoun in the US in a decade or more of rat behavioural studies described the concept of 'defensible space', which later became central to Oscar Newman's CPTED. In a parallel development, Edward T. Hall developed the study of human space, which in 1961 he called *proxemics*. Most people know this as the idea of 'personal space'.

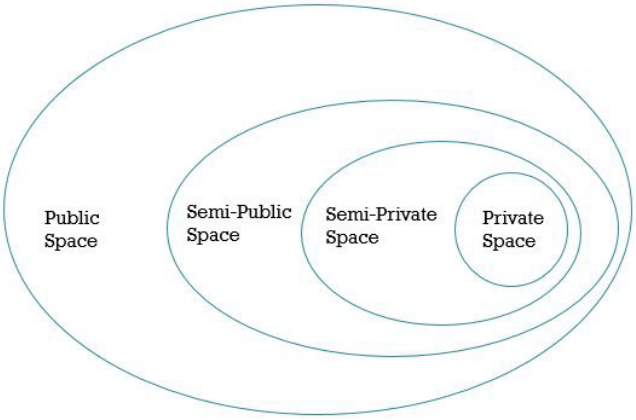
A more central pathway of development of the concept of territorial reinforcement emerged in the community development movement from the 1950s. There was increasing awareness that to build a sense of community and social capital between groups of people in a location required the architecture and planning to support safe behaviours.

It was from this community development/ architecture/planning that many CPTED concepts such as territorial reinforcement arose.

Although CPTED was originally developed as a complex socio-psychological-physical response to crime by C Ray Jeffrey, Oscar Newman converted this to a more simplistic architecture of 'defensible space'. In this simplistic 'defensible space' model of CPTED, it became necessary to have a grading of spaces from public to private, i.e.

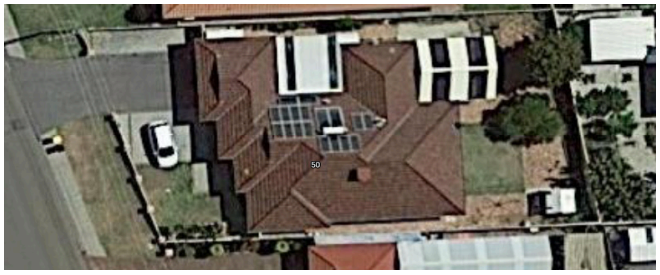
- Public space
- Semi-public space
- Semi-private space
- Private space

The arrangement of clearly bounded areas of private space, semi-private space, semi-public space and public space is illustrated below.



Because Oscar Newman was an architect, he coined CPTED in architectural terms. From an architectural point of view, he identified that it was necessary to distinguish between the architectural characteristics of these different kinds of spaces in terms of territory and 'defensible' characteristics. Hence, this led to the terminology 'territorial reinforcement'.

Example: house and garden



It is possible to separate the above territory into:

- **Private spaces** (e.g. home, bedrooms, rear garden etc.)
- **Semi-private spaces** (e.g. front garden)
- **Semi-public spaces** (e.g. road verge outside house)
- **Public spaces** (road and footpath)

How Territorial Reinforcement works to reduce crime

Territorial Reinforcement works to reduce crime in the following ways:

- It establishes 'usual' or normal behaviours
- It can increase sense of ownership
- It indicates acceptable behaviours in different areas of a location
- Strangers, intruders or unusual behaviours stand out
- Risk increases for criminals
- It reduces criminal 'myopia'
- It can provide stand-off distance

CPTED practical methods for use of Territorial Reinforcement

An effective CPTED approach is to make visible the boundaries between:

- Public spaces
- Semi-public spaces

- Semi-private spaces
- Private spaces

Ways of doing this include:

- Creating defined boundaries of the different spaces
- Using different standards of maintenance
- Signage (for boundaries and behaviours)
- Placing public facilities in public areas
- Ensuring private behaviours occur in private areas)
- Strong indications that the area is owned
- Prompt and consistent response when strangers breach the territory indicators
- Use of trespass-related responses

Territorial Reinforcement can be used at different scales

Although normally conceived of at the house, shop or park scale, territorial reinforcement can be used across a variety of scales e.g.:

- A country
- An international airport
- A petrol station
- A bank (and behind the counter in a bank)
- A large supermarket
- A mine-site
- Personal clothing and belongings at work
- Personal or business computer files

NEW THINKING FROM EVIDENCE - FEAR AND CRIME RISKS

Evidence indicates:

Personal feelings of fear about a situation are almost unrelated to crime risk.

An example of the problem of projecting fear onto crime risk is when looking at a dark area of a road and mistakenly assuming there must be a crime risk (because one feels a sense of fearfulness) and something needs to be done about it.

One illustration of the failure of fear to represent crime risk is the reduction in fear via familiarity. If familiarity,, such as repeated visits to a place, reduces fear in that place then this demonstrates that the fear was unrelated to actual crime risk.

There are entertaining examples of the gap between fear and reality: The JAWS film led to people in the UK becoming worried that sharks were about to leap out of the rain puddles on the way home from the cinema.

This issue has deep significance in crime prevention. Mistakenly, a core claim of 'expertise' of crime prevention and security professionals has been to look at places and use self perception of fear to offer advice about which places are more or less dangerous or at risk of crime.

A better more professional approach is to use crime risk data.

NEW THINKING FROM EVIDENCE - CCTV

Worldwide extensive evidence over 40 years has indicated that CCTV does NOT in general reduce crime.

Australia and other countries have formal

government reports pointing this out.

CCTV does, however, facilitate implementing the criminal justice system (catching people after a crime has occurred).

The evidence indicates that the effective role of CCTV to reduce crime is limited to:

- Reducing crime in carparks - providing all other CPTED features are applied (0% to 16% crime reduction).
- Reducing speeding and road crashes
- Saturation CCTV linked to immediate 100% 24/7 police response to every incident can reduce crime in very wealthy areas (more than 30%crime reduction). However, the same does not reduce crime in less wealthy areas.

NATURAL SURVEILLANCE

The concept of **natural surveillance** is that incidental or accidental surveillance of a location can protect against crime. This informal surveillance occurs by law-abiding people undertaking their normal daily tasks and is sometimes called 'eyes on the street'.

Natural surveillance includes such informal passive surveillance from nearby windows, shops, offices, gardens, roadways or from walking and travelling on the street.

Similarly, natural surveillance occurs to protect against crime in buildings by observation from law-abiding people on the street or from other buildings.

CPTED strategies to enhance natural surveillance include using open fencing, trimming trees and bushes, avoiding blind corners and other barriers or hard to see locations, enabling views over the street from office or other working spaces.

Create sightlines that support law-abiding people to be able to see if illegal activities are happening and respond.

Practically it is useful to check sightlines, e.g. using Google maps. It is also important to check sightlines vertically as some sightlines (e.g. from upper windows) may be blocked by trees or other features in the built environment.

Reducing criminal surveillance

There is, recently, increased awareness that sightlines work both ways. The sightlines that support natural surveillance also provide criminals with a view into homes and buildings.

In using natural surveillance as a CPTED method, it is important to avoid providing sightlines that enable criminals to identify crime opportunities and conduct crime planning more successfully.

At its simplest this requires that criminals cannot easily observe valuable crime targets and regular routines of targets and victims (see later section on Routine Activity analyses) whilst they are undertaking their own routines.

Compromised privacy results in reduced natural surveillance

People value their privacy highly.

Architecture supporting natural surveillance can lead to reduced privacy.

From experience, when personal privacy is compromised, individuals will make changes that reduce support for natural surveillance.

For example, where rooms overlook the street for natural surveillance and it is possible to see into the home from the street, then people will:

- Take steps to block unwanted sightlines (draw their curtains, build tall fences, grow opaque hedges, build solid walls to ensure their privacy)
- Choose to live in areas of the house that are not overlooked

The result is **reduced natural surveillance for all.**

There is also an increasing privacy and local government compliance problem with surveillance by CCTV overlooking neighbours property.

In CPTED, to maintain natural surveillance it is important to avoid compromising privacy.

Three aspects of natural surveillance

To recap, the three aspects of natural surveillance are:

- Enable sightlines to support law-abiding natural surveillance
- Block criminal surveillance sightlines
- Avoid compromising privacy that will result in people blocking natural surveillance.

Example of good natural surveillance

Here there are people at a cafe, walking down the street and well established street merchants, with buildings and shops over looking the street and people on the street aware of what is happening in the shops.

Apartment over the street

Some apartments offer easy natural surveillance over the street. This natural surveillance is useful outside working hours.

Office overlooking the street

Offices that overlook the street offer good natural surveillance.

However, such natural surveillance is typically limited to during the working hours of the day and mainly breaks and lunchtimes.

Working 'eyes on the street'

In many locations, there are individuals whose working role is to watch the street and their crime prevention contribution can be valuable.

Criminals using reverse natural surveillance to plan crimes

Natural surveillance sightlines also offer criminals opportunities to use legitimate activities (e.g. sitting at a cafe) to spot crime opportunities and plan crimes.

Whilst typically such sightlines cannot be blocked, it is important to be aware of the potential in protecting the potential targets.

Similarly to cafes, streets are public places and offer a range of possibilities to undertake criminal planning activities.

Again such sightlines typically cannot be blocked. However, it is important to be aware of them in protecting potential targets.

CPTED to reduce criminal surveillance

The challenge in CPTED terms is to maximise law-abiding natural surveillance that will reduce crime whilst at the same time minimising criminals' ability to use natural surveillance sightlines to identify possible crime opportunities (money, wallets, expensive electronics, keys…).

One strategy for buildings is to use one-way blinds and curtains. It is important to remember, however, that most one-way blinds are see through at night with light behind them.

Natural surveillance with clearing of horizontal sightlines

In CPTED terms, for natural surveillance, context matters.

In the following image, the undergrowth has been well cleared to give apparently good natural surveillance sightlines across this public space.

The view form another angle, however, shows that the sightlines of the main childrens' playground are almost completely obscured.

Vertical aspect of natural surveillance

Here is an example of clear sightlines for natural surveillance onto public open space from adjoining houses.

Again when viewed from another angle, what appears to be good natural surveillance can be blocked by features in the environment.

Natural surveillance - the importance of site inspection

The above problems of well designed natural surveillance being inadvertently blocked by features in the environment are common.

Except for almost empty sites, it is relatively difficult to ensure that natural surveillance sightlines will be effective when looking only at drawings.

Site inspections that include standing back from the location often reveal useful CPTED insights.

WEEK 2

The agenda for the second week of the CPTED for Community Safety Training covers the following:

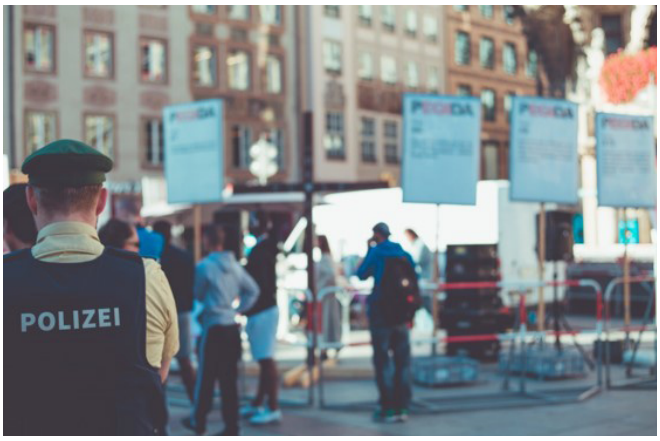
- Overview of 14 CPTED methods
- What is a Crime?
- Crime Risk analysis
- Demographic analysis
- New insights from evidence – 3 CCTV
- 5 minute break
- New insights from evidence – 2 Repeat/ Prior/Similar Victimisation
- Repeat Victimisation
- Routine Activity analysis
- Q&A
- Exercise

14 CPTED METHODS

The fourteen CPTED methods that will be reviewed in this course are:

1. **Review and define CPTED problems in planning, architecture and development terms**
2. **Prior/repeat/near victimization**
3. **Crime risk analysis**
4. **Demographic and socio-economic info**
5. **Geographical juxtaposition of crime attractors, detractors**
6. **Routine activity analysis**
7. **Natural surveillance**
8. **Natural access control**
9. **Territorial reinforcement**
10. **Activity support**
11. **3Ds of Designate, Define and Design**
12. **CyberCPTED, Smart-Cities, Smart Buildings and Digital Built Ecosystems**
13. **2nd Generation CPTED – neighbourhood, place and social ecology**
14. **3rd Generation CPTED – health and sustainability**

WHAT IS A CRIME?



A crime is a behaviour specified as a crime by a Law created by parliament.

The Commonwealth government delegates to State governments to make most Laws.

Federal and State governments provide restricted delegation to Local Governments to make By-Laws.

The Federal and State governments provide more restricted delegation to some organisations to make By-Laws for their members.

CRIME LAW IN AUSTRALIA

Most criminal law is defined and administered by states and territories in Australia.

NSW, SA and Vic are **common law** jurisdictions – do not define offences explicitly.

ACT, NT, Qld, Tas and WA have **statutory codes** defining crimes and law.

The Commonwealth also has Federal Laws which are more limited.

Laws are unified across Australia by the role of the High Court.

Only parliaments - not courts - can create new offences.

BY-LAWS

Australia has several kinds of by-laws:

- State government by-laws
- Local government by-laws
- Institutional by-laws
- Company/Society by-laws that apply only to members
- Strata title by-laws

PRIVATE LAWS

Owners/managers of property can define **private laws** for the behaviour of visitors. These are, however, subject to state and national laws relating to equity and diversity.

Private laws are most common in spaces that have a pseudo-public nature, e.g. shopping centres.

Such **private laws** are limited in their functioning but are supported by laws relating to trespass, which are in turn supported by the Police, Court Orders and Injunctions.

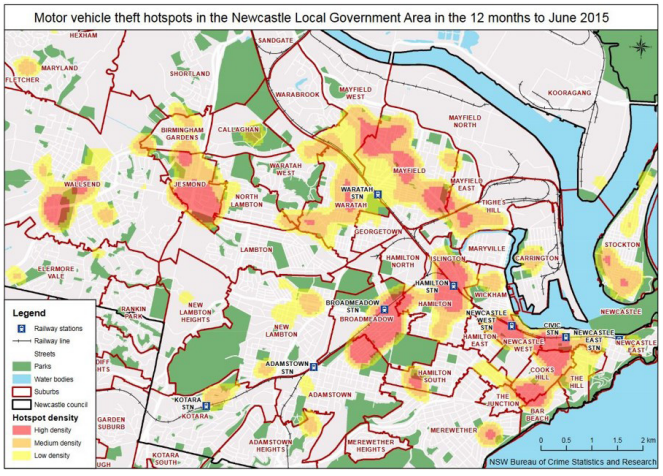
DATA AND CPTED

Data are important in CPTED for validating CPTED methods, and for creating effective well-targeted CPTED design details.

The most commonly useful sources of data in CPTED: are

- Crime statistics
- Demographic information
- Place-based information
- Routine activities
- Environmental criminology reports
- National standards

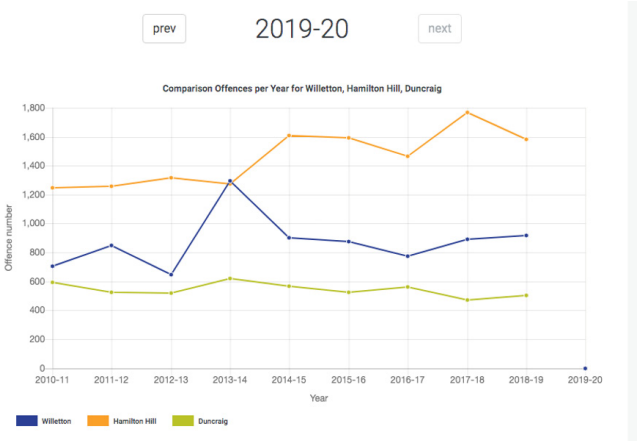
Data example 1: Crime Hotspot Map



Crime hotspot maps are useful for identifying both the intensity of crime and the effects of crime nearby.

It is important to note the **type** of crime, the period of data collection and the date of the map.

Data example 2: comparison of number of crime incidents/year



Comparing the crimes per year of different locations gives insight into:

- The relative level of criminality of a location
- The volatility of the crime activity

There can be a number of reasons for crime volatility and if crime volatility is high, it implies that well-targeted CPTED may be highly effective.

Data example 3: Annual Police Crime Statistics

Year to date crime comparison

Summary Offence Categories	2017-18 YTD	2018-19 YTD	2019-20 YTD	5 year average (YTD)	% Change from 5 year average
Selected Offences Against the Person (excluding Family Related Offences)	17750	17350	17365	17088.6	↑ 1.6%
Family Related Offences (Assault and Threatening Behaviour)	16750	16815	18489	16461.2	↑ 12.3%
Selected Offences Against Property	115891	116489	119551	122745.2	↓ -2.6%
Drug Offences (Possess or Dealing)	24098	23324	22047	23658.8	↓ -6.8%

5 Year Average is the average of the year to date period for the years 2014-15 to 2018-19.

YTD refers to the period 01 July to 31 March.

Police statistics may include annual figures for selected offences in a specific area over a range of years. Typical selected offences include: property crime, drug offences, assaults and car thefts..

In CPTED these are useful in identifying whether there ia trend up or down, and the relative scale of offences compared to the population of the specified area.

Data example 4: Detailed Crime Statistics over time

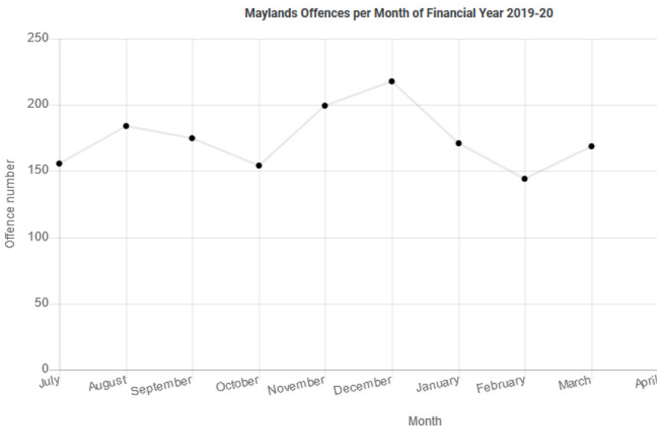
Type of Offence	July	August	September	October	November	December	January	February	March
Homicide	5	8	3	9	9	6	9	6	7
Sexual Offences	415	510	444	527	418	396	439	376	378
Assault (Family)	1,492	1,557	1,640	1,716	1,754	2,073	1,965	1,895	2,082
Assault (Non-Family)	790	1,094	1,016	999	1,119	1,211	1,086	1,129	1,013
Threatening Behaviour (Family)	185	288	213	235	276	260	311	241	306
Threatening Behaviour (Non-Family)	267	278	270	274	282	268	301	304	295
Deprivation of Liberty	24	32	28	12	22	28	39	18	23
Robbery	120	138	108	162	149	111	145	102	143
Dwelling Burglary	1,775	1,851	2,051	2,172	2,133	2,274	2,347	2,018	1,658
Non-Dwelling Burglary	518	604	621	668	652	669	712	575	714
Stealing of Motor Vehicle	488	543	654	611	602	674	647	596	565
Stealing	7,034	7,610	7,513	7,986	7,635	7,423	8,104	7,341	7,060
Property Damage	2,124	2,289	2,311	2,572	2,421	2,508	2,587	2,324	2,479
Arson	65	53	71	93	84	126	120	85	141
Drug Offences	2,510	2,836	2,437	2,407	2,386	2,711	2,261	2,284	2,215
Graffiti	166	160	175	160	146	123	157	146	132
Fraud & Related Offences	2,375	2,619	2,463	3,120	2,964	2,535	2,845	2,471	2,390
Breach of Violence Restraint	856	917	889	1,067	1,010	1,059	1,044	1,006	1,124

Annual detailed Police crime statistics are useful to identify the primary crime types of concern to be addressed by CPTED.

From a Planning or Architecture perspective, the relative changes over a year are not immediately relevant in design terms.

However, in evaluating the effects of a CPTED -related redesign of a location, it is helpful to review the before and after crime statistics at a monthly level to identify crime changes due to the CPTED redesign.

Overview of offences per month



A monthly graph of crime or a single crime type at a location is useful as it gives some idea of the volatility, of any upward or downward trends and of any annual effect (e.g. burglary increasing around Xmas).

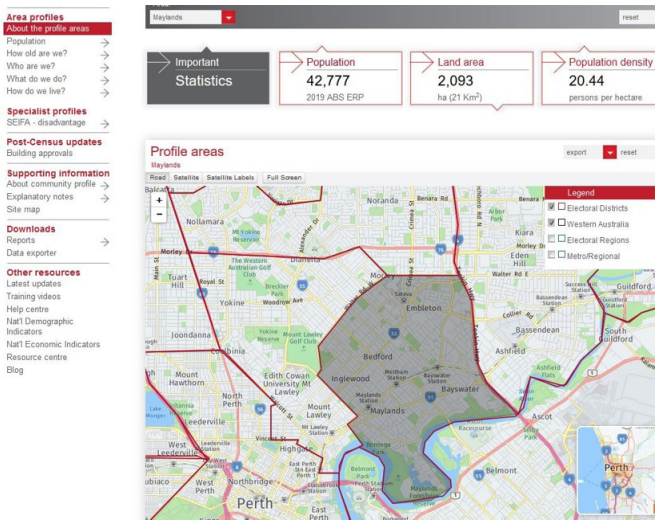
DEMOGRAPHIC ANALYSIS

Demographic data about a location provides valuable crime prevention insights of use in CPTED, e.g.:

- What kinds of people live in the area, where and in what proportions?
- Which groups come into the area and when (e.g. for work, school, travel etc.)
- What is the distribution of ages in the area?
- Which cultures are represented?
- What are the SEIFA ratings? (Especially below 40%)

In Australia, the best source of such information is usually the website profile.id and typically local governments subscribe to it and make their information publicly available.

For example, an online search of 'Maylands profile.id' will result in access to the website with demographic data about Maylands:



A rich trove of demographic data is available through the menus.

INSIGHTS FROM EVIDENCE - CCTV CAN REDUCE CRIME IN SPECIFIC CONTEXTS

Currently, CPTED and the assumptions on which it is based are changing rapidly as a result of evidence.

A week ago, in the previous lesson, the state of evidence indicated that CCTV statistically had no significant effect on crime except in car parks.

Up until now, worldwide, extensive evidence over 40 years indicated CCTV does NOT in general reduce crime.

New evidence now shows that CCTV CAN be statistically proven to reduce crime under particular conditions, especially in car parks and in reducing property crime.

The new findings are that CCTV works to reduce crime in:

- Car parks
- Residential locations
- Some other locations

However, for CCTV to reduce crime it also requires:

- Active monitoring with sufficient resources
- CCTV saturation level coverage
- Rapid response by defenders

The new findings (Piza et al 2019):

- Support use of CCTV to prevent crime
- Find 'CCTV is associated with a significant and modest decrease in crime [this is new]
- 'The largest and most consistent effects of CCTV were observed in car parks
- 'The analysis also generated evidence of significant crime reductions within other settings, particularly residential areas
- 'CCTV schemes incorporating active monitoring generated larger effect sizes than passive systems
- 'Schemes deploying multiple interventions alongside CCTV generated larger effect sizes than schemes deploying single or no other interventions alongside CCTV
- Show that CCTV needs to be narrowly targeted on vehicle crimes and property crime
- Identify that CCTV is a supplement to, and requires, other CPTED interventions for effectiveness
- Indicate that it is important to NOT deploy CCTV as "stand-alone" crime prevention measure
- Identify that saturation CCTV is more effective with effectiveness falling off as CCTV cover is reduced
- Indicate the cost-effectiveness of CCTV for crime prevention is problematic - need for, and high cost of, active monitoring with low numbers of screens per human monitor.
- Suggest that AI-image software may offer an improvement in cost effectiveness
- Observe that research is still exploring key mechanisms of effective use of CCTV

The new research and findings are available from: Piza, E., Welsh, B., Farrington, D. and Thomas, A. (2019). CCTV Surveillance for Crime Prevention: A 40-Year Systematic Review with Meta-Analysis. Criminology & Public Policy, 18(1): 135-159.

Available: https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1275&context=jj_pubs

INSIGHTS FROM EVIDENCE - REPEAT VICTIMISATION

Crime is dominated by repeat victimisation.

- 2% of the population experience 44% of the property crime
- 1% of the population experience 59% of personal crime

The result is that everyone else has a much **lower** crime risk than what appears in the crime incident statistics.

Repeat victimisation analysis offers a way to **triage** CPTED DESIGN decisions (and other crime prevention initiatives).

This is because the existence of a recent (within the last year) prior crime for a victim is the strongest indicator of future crime risk at that location or for that victim. In other words:

An effective strategy for CPTED is to prioritise investment of CPTED resources to locations or victims with recent prior crime.

REPEAT VICTIMISATION AND CPTED

Repeat victimisation is when a crime occurs against the same person or property in a given length of time.

Typical repeat victimisation crime types include:

- Burglary
- Theft
- Assault
- Domestic violence
- Bullying
- Shoplifting
- Trespass
- Robbery
- Fraud
- Speeding

Why is Repeat Victimisation so common?

Repeat victimisation offers many benefits for criminals in terms of improving the cost-benefit ratios f their criminal activities.

The main factors are that the criminal:

- Was successful and that gives them strong positive reinforcement to repeat the success
- Identified a successful strategy for that situation and know it works
- Learned a lot about the environment while they were conducting the crime, which means next time and the crime will be easier and less risky
- Will now be much more efficient and effective at this kind of crime in this kind of situation with this kind of victim

There are other kinds of crime patterns similar to **repeat victiimisation:**

- **Near** victimisation
- **Prior** victimisation

Near Repeat Victimisation

Near repeat victimisation occurs when a criminal commits the same kind of crime nearby at a location that is structurally similar

Much repeat victimisation is typically **near** because offenders have a limited awareness space - usually <2km around their home.

Near repeat victimization may occur on different types of crime targets, e.g. house, car, shop, garage, person…

Prior Victimisation

Repeat victimisation dominates crime so much that:

Currently the best predictor of future crime at a location or on victim is that of a prior victimisation.

- Currently the best predictor that a property crime will occur is that a crime has recently occurred at that location
- The best predictor of a repeat assault is that the victim has reported a prior assault to the police

Much repeat victimisation happens within a week (sometimes within 24 hours). For residential burglary, around 50% of the next repeat occurs within a month.

The period of heightened risk drops off in the following months up to a year later.

For burglary the immediate increased risks can fall and then bounce up again around 4-5 months later. This is believed due to offenders awareness of the payback and replacement period associated with insurance.

Repeat victimisation terminology

True repeat victims – exact same target that was initially victimized

Near victims – victims or targets physically close to original victim that are similar

Virtual repeats – repeat victims/targets that are virtually identical (e.g. all IKEA stores have the same layout). **Near repeats** are a subset of virtual repeats.

Chronic victims – are victims that suffer different types of victimisation over time (multiple victimisation)

Hot spots – geographic areas with high levels of a type of crime (often from repeat victimisation)

Hot products - goods that are frequently stolen (see CRAVED products) that underpin repeat victimisation

Crime generators – facilities that by the activities carried out there provide opportunities for increased crime

CPTED TO REDUCE REPEAT VICTIMISATION

There are multiple ways to apply CPTED principles in planning and architecture to reduce repeat victimisation.

The most important thing, perhaps, is to ensure that all the protections and strategies that are put in place make the location or victim **very obviously significantly more protected**.

This also means making such protections very **visually obvious** to potential offenders.

The aim is for potential offenders to see the target as completely different and much more difficult.

In other words to have a major difference in cost-benefit in the offender's eyes.

Practical methods (besides making them visually obvious) include:

- Immediately block signs of victimisation
- Significantly improve physical security and make it visually very obvious

- Visually and physically restrict all aspects of access
- Reduce rewards and crime opportunities (in case of some victims this may involve moving the victim(s) to a different location)
- Change routine behaviours
- Provide visually obvious increased surveillance
- If possible provide short term 'cocoon' surveillance
- Significantly improve appearance and maintenance
- Increase activities from law abiding persons
- Change management practices (shops and businesses)
- Monitor for repeat victimisation

Note 1: As described earlier, CCTV has an effect in terms of image and catching offenders – but **not** in reducing crime via surveillance.

Note 2: Avoid the legal risks of using dummy CCTV

Special issues in addressing Repeat Victimisation

There are some unusual issues that also need to be addressed whilst reducing repeat victimisation.

Firstly, warning victims/occupants about risks of repeat victimisation may result in increased fear of crime.

Secondly, it is important to avoid violating the privacy of victims. This must be managed whilst at the same time managing changes to reduce crime and risks of repeat victimisation.

Care in design is needed to manage other unintended consequences. An example, where support for victims of domestic violence enrages the perpetrator and results in increased violence.

In designing and planning to reduce repeat victimisation it is important to take a bigger picture of the problem and commit significant resources and make significant changes. The benefits for offenders of undertaking repeat victimisation mean the likelihood of reducing crime with minimal effort is low. In addition, in repeat victimisation situations displacement is likely.

ROUTINE ACTIVITIES AND CRIME

Crime primarily depends on the routine activities of criminals and victims

Both are strongly shaped by planning and architectural decisions.

Routine activities reveal and enable crime opportunities. Situational Crime Prevention focuses on Routine Activities to prevent the conjunction of potential criminals, opportunity for crime and lack of defenders.

Routine activities can also be analysed by planners and architects as a means of understanding the routines shaping the timing and level of crime risks.

ROUTINE ACTIVITY ANALYSIS

Routine Activity Analysis is a new CPTED method extending:

- **Crime Pattern Theory** (locations influence what crimes occur there)
- **Routine Activity Theory (**crime in a location requires an offender, opportunity and lack of defenders)

Routine activity analysis is the analysis of activities at a location 24/7 (and through the year if necessary.

Appropriate data collection comprises a record of the actual or predicted routine activities of

different groups at different times at a location to identify all the patterns of activities :

- Who does what and when?
- What are the times and days when crime or other problems occur?
- What is happening at those times?

This gives direct information about which CPTED design approaches will be most likely to reduce crime risks at specific times, days and locations for specific groups of people.

Why use Routine Activity Analysis for CPTED?

Most locations are lawful and work well for almost 100% of the time.

Crime or problem behaviours:

- Occur rarely
- Occur at very specific times
- Involve very specific groups
- Are tightly linked to routine activities

Changing routine activities is an effective and economic CPTED approach to reducing crime and anti-social behaviour problems

WHY FOCUS CPTED ON ROUTINE ACTIVITY ANALYSIS?

Most locations are lawful and work well for almost 100% of the time.

Crime or problem behaviours

- Occur rarely
- Occur at very specific times
- Involve very specific groups
- Are tightly linked to routine activities

Designing changes to the built environment to change routine activities is an effective and economic way of reducing crime and anti-social behaviour problems.

Design via planning and architecture can use CPTED principles and an understanding of routine activities and how to shape them to reduce crime.

Example: Pedestrian Access Way

Routine activity analysis of a pedestrian access way indicates the small proportion of time that specific groups routinely cause problems. This can be addressed by specific interventions.

Opportunity Analysis

***Opportunity analysis* is used to identify the** crime or anti-social behaviour opportunities that are in many cases closely linked to **routine activities.**

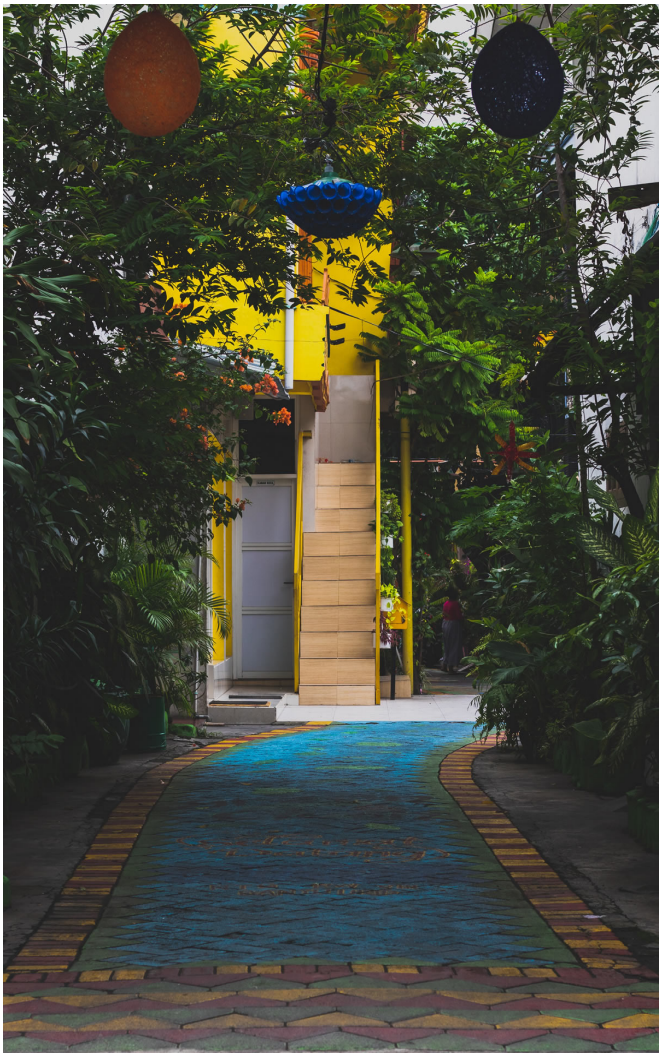
Opportunity analysis of nearby locations can indicate how crime might be displaced due to planning and architecture changes and what additional design decisions might be required.

WEEK 3

The agenda for week 3 of the Certified Online CPTED for Planners, Architects and Associated Professionals Course includes:

- Natural Access Control
- CPTED and anti-social behaviours
- New insights – Crime is low
- New insights – Lighting
- Land-uses and Geographic Juxtaposition
- The Dark-Side
- Targeted CPTED

NATURAL ACCESS CONTROL



Natural access control reduces crime by indicating correct access pathways using:

- Paths
- Vegetation
- Floor colour
- Floor texture
- Width
- Lighting
- Signs
- Lightweight fencing

In essence **Natural Access Control** uses design choices about any of the features that may be naturally found in an environment,

Natural Access Control is in contrast to, and differs from, **Formal Access Control**, which uses security methods such as locked doors and windows, walls, locks, secure fences and barriers to enforce the control of access.

How Natural Access Control reduces crime

The informal signals created using Natural Access Control makes it clear to everyone what the correct pathways are and the expected behaviours.

By doing this:

- The variety of behaviours is reduced (and easier to manage)
- Lawful and unlawful users change their behaviours to align with the guidance
- A criminal doing an unacceptable activity or going 'off-path' is easily identifiable
- For a criminal, it increases the risk they will be challenged
- Repetition of lawful behaviours reduces the drive to be unlawful

Example of Natural Access control using planting

In the following image, the access route to the gate in the distance is defined by the natural features. In this case: the stone pathway, the shaping of the grass boundaries and the line of the flowerbeds, the hedge and gateposts , the layout of trees, the pillars and gate and the lining up of the pillars and pathway.

Example: ATM without Natural Access Control

Without natural access control indicators, the only motivation is to get as close as possible to the ATM - a boon for criminals.

Example: ATM with lines as Natural Access Control

Author: Chris Phan (cc-by-sa-2.0)

In this case, the lines naturally indicate there is to be an orderly queue with space for the person using the ATM, Note: this is not a particularly good example of this method because the multiple lines give some scope for confusion.

Example, ATM using building features as Natural Access Control

The following images demonstrates how building features can result in natural access control of behaviours. In this case, standard beaviours approaching and ATM. The fixed building features have been supplemented by a moveable temporary 'fence'.

Example: Using a temporary barrier

The temporary barrier (easily moved or stepped over) provides natural access control that standardises the behaviours of people both in the queue and outside of it.

Example: Signs

Signs can control behaviour naturally rather than using force. In this case, to use a warning to encourage people to stay this side of a fence.

Example: Lighting

Lighting can also be used to direct and control access in a natural manner. It can also be used to encourage use of spaces at night by reducing fear of the dark.

MANAGING ANTI-SOCIAL BEHAVIOURS

Most behaviours referred to as 'anti-social behaviour' are not criminal.

Some behaviours referred to as anti-social behaviours are indicators of other problems in society.

5 different kinds of behaviour are referred to as anti-social:

- Behaviours that infringe Federal or State Laws
- Behaviours that infringe City/Shire By-Laws
- Behaviours of one group that are objected to by another group
- Behaviours in public space that infringe owner-created conditions of entry to a space
- Behaviours that indicate failure of social support system

Appropriate responses

Behaviour: infringes Federal or State Laws

Response: Report to Police

Behaviour: infringes City/Shire By-Laws

Response: warn, issue infringement, fine

Behaviour: one group objects to lawful behaviour of another group

Response: avoid contravening equity and discrimination laws

Behaviour: infringe owner-created conditions of entry in pseudo-public space

Response: advise owner on law and on trespass remedy and need to abide by equity and discrimination laws

Behaviour: behaviours that indicate failure of social support system (mental health, street sleeping, drug taking etc)

Response: arrange pastoral care and support – use protocols

Some solutions to complaints of anti-social behaviour can be resolved by planning and architecture approaches.

Planners and architects can use practical CPTED to reduce objections to legitimate behaviours that some people complain about.

Two principles that prove effective:

- **Provide increased levels of public shared resources**
- Provide guidance on acceptable behaviours using public resources

Example: Practical CPTED to reduce complaints about public sleeping

The complaint : The three benches in a park have people sleeping on them.

This is legal behaviour but some people it is perceived as an anti-social behaviour problem.

Solution: **Add** 100 new public benches.

Then the park is seen as having better social amenity of which only a tiny amount (3%) are used for public sleeping.

Similar approaches can be used to resolve many other complaints about 'anti-social behaviour'.

Another example. There were complaints about young people using the seats around a children's playground. The immediately successful solution was to create an additional resource - a separate place where young people could hang out.

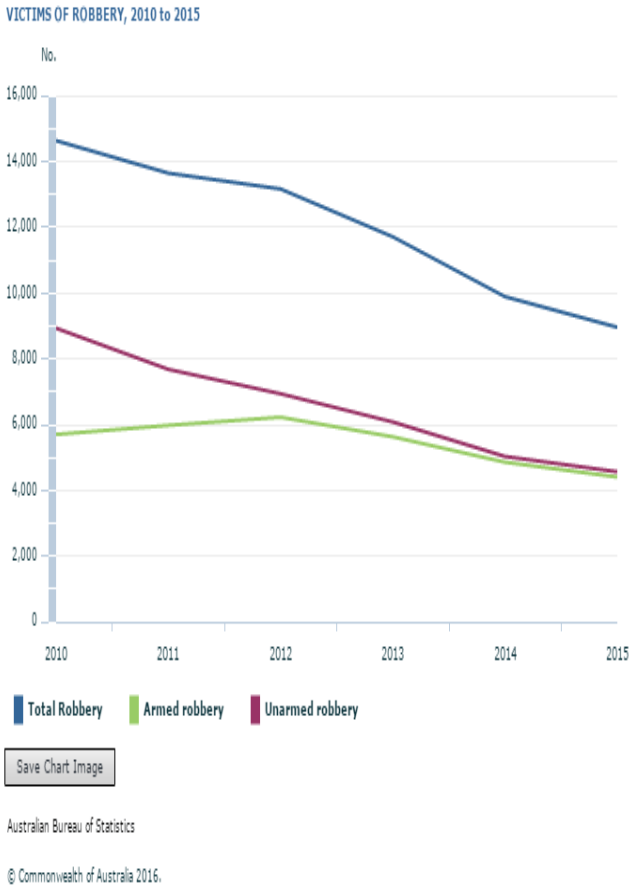
NEW INSIGHTS - CRIME IS LOW AND FALLING

Crime rates have been falling for 1000 years and in general crime rates continue to fall.

The risk of homicide now is 1/100th of the medieval rate of homicide and suburban crime rates are nowadays similar to rural crime rates or lower.

Not only are crime rates are very low. For most individuals their real crime risks are much lower than the crime rates indicate.

This is because **repeat victimisation** means that a small number of people and locations bear the bulk of the crime risks. In consequence everyone else only sees much smaller proportion of the overall crime risks.



Falling crime rate is obscured by population increases, reporting and prosecution.

This has implications for CPTED and the role of planners and architects in reducing crime because when crime rates are low the incidence of crimes that occur more rarely is more random.

This points to a need to **target CPTED** on the crimes that are most common and most predictable.

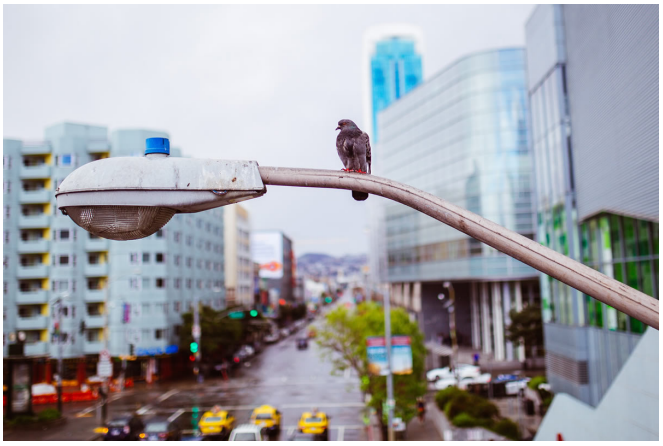
NEW INSIGHTS - LIGHTING

Lighting has a complex and often contradictory relationship with crime rates.

For example:

- People feel safer where there is more light
- Light encourages criminal and anti-social behaviour at night
- Crime rates fall after street lighting is installed
- Some burglars prefer well-lit targets
- Anti-social vandalism is often encouraged by lighting
- Some crimes occur where there are more people because of lighting
- Criminals adapt their methods to lighting changes

Street-lighting



Some studies show strong crime reduction effects from street lighting. Other studies show street lighting has little or no effect on crime. Sometimes lighting increases crime.

Findings about effects of street lighting on crime indicate that **the effects on crime may not be due to the lighting itself**:

- Street lighting reduces crime **in the daytime when the lights are off**.
- New street lighting reduces crime in nearby areas that do not have street lights
- When street lights are dimmed crime rates reduce
- Crime does not rise when streetlights are turned off,

If light reduces crime, why does crime fall when the lights are off and reduce when they are dimmed?

Other factors such as improved image and maintenance, extra policing and changes in routine activities may be the real causes of reductions in crime associated with lighting.

Recent (2019) research implementing a program of temporary of high-intensity floodlights on trailers in some public social housing areas in New York appeared to indicate that street lighting reduced violent street crimes compared to public housing areas without such lights.

However, closer inspection indicates this may be due to other reasons such as the physical disruption, the changes in activities and the changes in use of public space. The authors of the report comment that the changes of crime rates associated to the intervention cannot be projected onto an implementation of street lighting.

LAND USE AND GEOGRAPHICAL JUXTAPOSITION ANALYSIS

Geographical juxtaposition analysis focuses on:

- How crime rates at a location might be influenced by nearby land uses

- How the land use at a location influences crime for nearby areas

The effects can be positive or negative.

For example, in the post-war periods it was common to locate churches and places of worship (as well as statues and 'cultural' buildings intending to be inspiring) in locations with high crime risk or risks of social disturbance or insurrection.

The aim was to reduce crime by having a spiritual and religious affect on behaviour of returned soldiers.

In contrast, the ways alcohol supplying premises and some other land uses raise crime rates and increase levels of problem behaviours in nearby areas have been known for some time.

The following image is from William Hogarth and published over 150 years ago about Gin Lane in London.

The crime reducing **positive** effects of land-uses often appear to be low in intensity yet extend widely in both time and space to positively influence behaviours.

In contrast, the **negative** effects of land uses appear to be more intense, more short-term and extend over a shorter distance than those of positive land uses. For example, the main adverse consequences of an alcohol supply land-use are typically around the times that the premises is open and extend usually to only to a few hundred metres.

Practically, it is useful to identify on a map the crime-influencing land uses around a location of interest and include their effects in any crime risk assessment.

CRIME PATTERN THEORY

Crime Pattern Theory focuses on the roles of physical space in gaining an understanding of why crime occurs and how to reduce it.

Crime Pattern Theory explores crime in terms of the patterns of crime on maps and patterns in relation to groups, behaviours. and other criminogenic factors.

Where crime patterns exist, it is possible to create targeted crime prevention interventions that are effective.

Crime Pattern Theory includes **Routine Activity Theory** and the concept of an **offender's awareness space.**

It also draws on the mathematics of space-based events and this has led ot the transfer of terminology from that realm into CPTED:

- **Crime Generators** - locations that appear to generate crime - usually busy locations.
- **Crime Attractors** - locations that provide crime opportunities that attract criminals.
- **Crime Repellors** - locations that discourage criminal activity and the presence of criminals.

Some consequences of Crime Pattern Theory

Crime Pattern Theory has provided a sound and evidenced basis for modelling crime situations to identify CPTED and other crime

prevention strategies.

However, creating CPTED solutions on the basis of Crime Pattern Theories tends to produce lower quality of life outcomes.

This occurs when the primary focus becomes interventions aimed to reduce the crime effects of crime generators and attractors and increase the effectiveness of crime repellors.

The result can easily emerge as security-based environments in which there is

- Minimal activity for citizens
- Highly secured or fortressified buildings and transport
- Highly policed or militarised public spaces
- Highly-surveilled private spaces

Alternative CPTED approaches

Alternative strategies using Crime Pattern Theories that focus on providing increased quality of life outcomes include:

- For areas of high crime risk use increased CPTED investment
- Encourage increased use by lawful people (with care!)
- Focus on geographical juxtaposition effects of differing land uses

THE DARK SIDE OF CPTED

CPTED is ***effective***.

That means ***it has effects on the world***.

These effects can be **negative** as well as **positive**. Therefore, there is always the possibility of adverse consequences

CPTED can have negative, hidden, adverse or unintended consequences including that CPTED can:

- Increase crime
- Create financial and legal liabilities for stakeholders
- Reduce quality of life (e.g. health, economy, enjoyment….)
- Act against other planning and development intentions
- Increase crime risks inequitably for some stakeholders
- Reduce amenities inequitably for some stakeholders
- Result in illegal social exclusion for some stakeholders
- Can result in financial losses for some stakeholders
- Cancel the outcomes from other CPTED interventions
- Result in the flawed or corrupt distribution of public resources

Not undertaking CPTED can lead to liabilities and litigation.

Where CPTED results in adverse consequences and outcomes, this can also lead to liabilities and litigation.

One strategy to address this problem and increase the effectiveness of CPTED is to use targeted CPTED and avoid generic application of CPTED.

THE IMPORTANCE OF TARGETED CPTED

CPTED can reduce crime or increase crime

CPTED can improve quality of life or have adverse effects

Targeted CPTED acts to

- Reduce crime
- Improve quality of life
- Be more effective
- Be more cost effective

How to create Targeted CPTED

To create targeted CPTED use the following seven steps:

1. **Identify any threats (not needed in most scenarios)**
2. **Undertake crime risk assessment**
3. **Identify the crime problems of most interest**
4. **Devise CPTED to address those primary problems**
5. **Check for possible adverse events and redesign**
6. **Implement**
7. **Evaluate and if necessary redesign and reimplement**

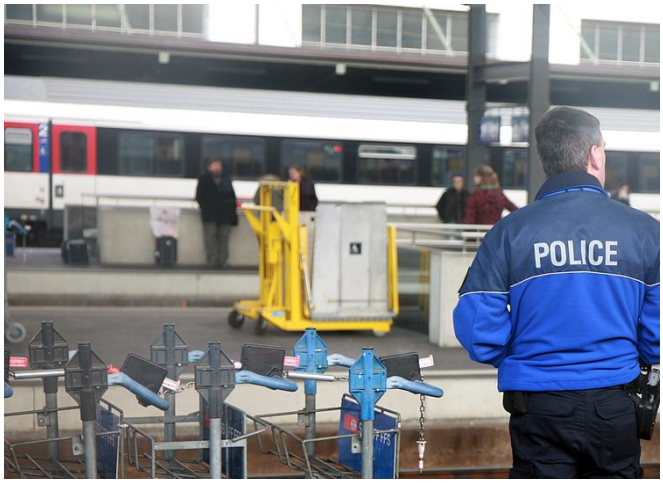
WEEK 4

The agenda for Week 4 is as follows:

- Situational Crime Prevention
- CPTED and Massing
- New insights – New Urbanism
- New insights - People movement can predict crime
- Hostile vehicle management and Counter Terrorism

SITUATIONAL CRIME PREVENTION

Situational Crime Prevention focuses on designing the environment to reduce crime rather than treating offenders.



The origin of Situational Crime Prevention is in UK Policing where it originated in the 1960s in the UK Home Office Research Unit.

Initially CPTED and Situational Crime Prevention developed independently with CPTED being developed in the US and Situational Crime Prevention in the UK. It became clear to practitioners of both that they have substantial overlaps and support and influence each other.

Situational Crime Prevention is in the US currently linked to Problem Oriented Policing and the SARA (Scanning Analysis Response Assessment) model.

Foundations of Situational Crime Prevention (SCP)

The four key foundations of SCP are:

- A theory foundation that combines **Routine Activity Theory** (described earlier) and **Rational Choice Theory**
- That the development of SCP methods is based on **Action Research**
- That SCP focuses on opportunity-reducing techniques (Crime Opportunity Theories)
- SCP consists of a body of evaluated practices that **in their evaluation include the potential for crime displacement**.

Crime Opportunity Theory

Crime Opportunity Theory is foundational to the opportunity-reducing approach of SCP. It assumes that:

- Opportunities play a role in causing all crime
- Crime opportunities are highly specific
- Crime opportunities are concentrated in time and space
- Crime opportunities depend on everyday movements of activity
- One crime produces the opportunities for another
- Some products offer more tempting crime opportunities
- Social and technological changes produce new crime opportunities
- Crime can be prevented by reducing

opportunities

- Reducing opportunities does not usually displace crime
- Focused opportunity reduction can produce wider declines in crime

Rational Choice Theory

Rational Choice Theory is based on two precepts:

- Offending behaviour involves decision making and the making of choices, which are constrained in many ways.
- Decisions and factors that affect offender decision making vary greatly at stages of the offense and among different offenses.

These offer the potential for intervention at different stages in the offending process.

Rational Choice Theory also originated in the UK Home office.

25 Methods of Situational Crime Prevention

The core of the approach of Situational Crime Prevention has coalesced around 25 methods of reducing crime.

These are grouped under the following 5 headings:

- Increase Effort
- Increase the Risks
- Reduce the rewards
- Reduce provocations
- Remove excuses

Increase Effort

Increase the effort of undertaking a crime:

- Target harden
- Control access to facilities
- Screen exits
- Deflect offenders
- Control tools/weapons

Increase the Risks

Increase the risks of undertaking a crime:

- Extend guardianship
- Assist natural surveillance
- Reduce anonymity
- Use place managers
- Strengthen formal surveillance

Reduce the rewards

Reduce the rewards of crime:

- Conceal targets
- Remove targets
- Identify property
- Disrupt markets
- Deny benefits

Reduce provocations

Reduce provocations likely to lead to a crime:

- Reduce frustration and stress
- Avoid disputes
- Reduce emotional arousal
- Neutralise peer pressure
- Discourage imitation

Remove excuses

Remove excuses for being in a crime-related situation or of having undertaken a crime by:

- Set rules
- Post instructions/signs
- Alert conscience
- Assist compliance
- Control drugs and alcohol

NEW INSIGHTS - NEW URBANISM INCREASES CRIME

New Urbanism is a collection of planning approaches that include:

- Mixed-use (business residential)
- Walkable streets
- Increased street activities
- Permeable grid street layouts
- Transit-oriented development
- Higher residential and occupational densities.

Until recently, it was assumed that the above methods would reduce crime because of increasing 'eyes on the street' following Jane Jacobs' speculations in the 1960s.

In fact, this has been recently demonstrated as mistaken. Evidence from research in Environmental Criminology indicates that:

New Urbanism design typically results in INCREASED crime rates

The crime evidence indicates:

- Focusing only on 'Eyes-on-the-street' does NOT overall reduce crime.
- Mixed business-residential land use:
  - Reduces crime for businesses
  - ***Increases crime rates for residents*** (compared to them not living in a mixed use environment)
- Permeable street layout:
  - Many community benefits
  - ***Increased crime rates for all***

The challenge is to get the quality of life benefits of New Urbanism AND reduce crime

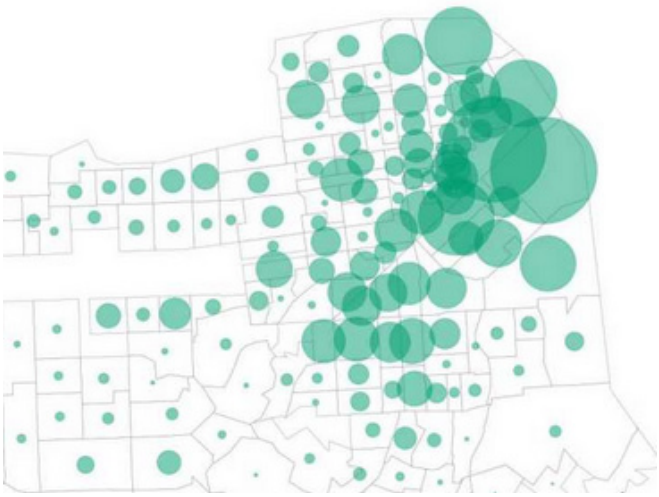
CPTED solutions for reducing crime in New Urbanism locations

New Urbanism planning has many quality of life benefits. However, the increases in crime are associated with and result from gaining many of these benefits.

Appropriate CPTED approaches include:

- Being aware that local CONTEXT is important in CPTED and this is different in New Urban environments
- Avoid assuming traditional CPTED thinking will work automatically. E.g. evidence indicates 'eyes on the street' assumptions are incorrect
- Provide additional targeted CPTED resources and plan to design to reduce crime on the basis of crime risk statistics and context, rather than cookie-cutter CPTED principles.

NEW INSIGHTS - PEOPLE MOVEMENT CAN PREDICT CRIME BETTER



Evidence from Environmental Criminology research into people movement and crime now reveals:

- Crime is most likely in areas people pass through between locations
- More crime in places with larger number of recreational activities
- Doesn't apply to shopping
- Prediction models based on mobility + crime are better than those based on crime data
- Crimes reviewed: theft, robbery, assault, burglary and stolen vehicles
- The strongest relationship is with theft and

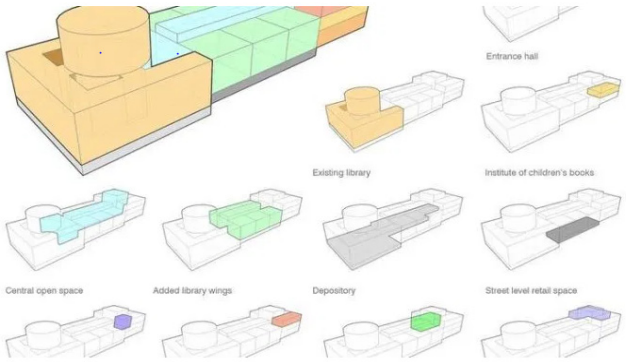
weakest with robbery

For more details see: https://www.aaai.org/ojs/index.php/ICWSM/article/view/7304

CPTED AND MASSING

MASSING is the outside geometric shape of buildings. It is seen also in simplified models of architectural developments.

Examples are shown in the image below.



(Image is https://www.caddownloadweb.com/massing-studies-in-architecture)

For CPTED, such models can offer ways of reviewing crime risks due to the layout of a location and its building forms.

It also reveals CPTED opportunities more easily than by drawings or 3D software walkthroughs.

AlbusTheWhite - License: CC BY-SA 4.0,

DAVIDE MAURO License: CC-BY-SA-4.0

Such 'mass' models of simplified building shapes can also be of use in planning for protection against disasters or for responses to major crime situations.

This includes identifying ingress and egress pathways in disaster scenarios such as the one modelled below.

Forensic Architecture - License:, CC BY-SA 4.0,

CPTED AND HOSTILE VEHICLE MITIGATION

Note: The reader is advised to seek professional assistance in relation to the following sections on Hostile Vehicle

Mitigation (HVM), protection against improvised explosive devices (IEDs) and the design of buildings to protect against terrorist attacks or similar. The information provided on these topics in the following sections of this course is given as an introductory overview only.

Hostile Vehicle Mitigation (HVM) in CPTED is the detailed design of the built environment to reduce the risks associated with attacks that use vehicles in a hostile manner.

What is a hostile vehicle?

A **hostile vehicle** is generally one whose driver is determined to access a restricted or unauthorised area or location in order to cause:

- injury/death to people
- disrupt business
- effect publicity for a cause

A hostile vehicle may be used to carry an explosive device, or, the vehicle itself, travelling at speed, may present the primary danger, or the vehicle may be used to carry other offensive resources (e.g. armed individuals).

CPTED for Hostile Vehicle Mitigation (HVM) and Counter-Terrorism includes:

- Mitigation against vehicle-based attacks
- Creating stand-off from assets that are being protected
- Controlling access
- Providing protection and support structures
- Providing structures that support detection and intelligence
- Integrating all the above into architecture and planning whilst minimizing adverse consequences on normal use
- Providing built environment support for temporary interventions
- Being aware of the 'arms race' of attackers and defenders occurring over short and long-term planning

CPTED for Hostile Vehicle Mitigation (HVM) is primarily intended to stop:

- 'Vehicle as a weapon' attacks including:
  - Ramming attacks against building
  - Ramming attacks against pedestrians
- Attacks using vehicle-borne improvised explosive devices (VBIED)
- Attacks using vehicles with other offensive capabilities (e.g. carrying armed offenders)

Hostile Vehicle Barriers

Temporary, semi-temporary (see above) or permanent hostile vehicle barriers can be effective at stopping vehicles.

Some barriers are highly effective at stopping even fast moving heavy trucks.

There are, however, some challenges. These include:

- Fast travelling vehicles can encroach some distance (several meters) past the barriers as they distort on stopping
- Parts break off suddenly stopped fast moving vehicles and these parts can travel many meters as high speed projectiles that are a significant risk to pedestrians.
- Some barriers e.g. concrete blocks are easily pushed along the ground by heavy vehicles and do not stop the vehicles.
- If hit hard enough, pieces can break off concrete blocks and act as projectiles.

In consequence, hostile vehicle barriers intended to stop fast moving or heavy vehicles typically require large stand-off distances.

Reviewing CPTED for HVM

Areas of focus include:

- Vehicle run up distance and alignment to target

- Access controls
- Blast radius
- Stand off distance
- Information pathways
- Forensic information history

CPTED AND AESTHETIC PASSIVE HVM BARRIERS

Planners and architects can integrate passive HVM barriers that are aesthetically pleasing into landscape features such as:

- Sculpted or clad earthworks, steep verges
- Shrouded bollards (i.e. designed to match local architecture)
- Decorative, structural or energy absorbing planters (i.e. more aesthetically acceptable)
- Strengthened 'light' structures (e.g. bus or smoking shelter, information sign)
- Large immovable landmarks (e.g. statues, walls)
- Integrated street furniture (e.g. lighting column, traffic signal, seating, cycle rack)
- Level changes (e.g. steps, high kerbs)
- Water features (e.g. fountain, pond or pool)

Guidance is available at:

https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/hostile-vehicle-guidelines-crowded-places.pdf

CPTED AND PROTECTION FROM IMPROVISED EXPLOSIVE DEVICES

Improvised explosive devices (IEDs) that are not projectiles require moving to the location at which they are intended to act. Often this is done by a hostile vehicle

Larger IEDs create more damage than smaller ones. Larger IEDs, however, typically require a larger vehicle to carry them close to their point of application. At the lower scale, small IEDs can be carried into place by individuals.

In planning and design of environments to protect against IEDs, strategies include:

- Designing facades in vulnerable high risk areas to perform well when exposed to explosion
- Create stand-off distances and if possible block/control vehicle access
- Design to prevent progressive collapse
- Compartmentalise to reduce local size of 'crowded place'
- Design in blast protection structures to block line of sight of blast(landscaped earth works etc)
- Design built environment to be able to implement deterrence:
  - Obvious surveillance
  - Bag inspection
  - Xray testing
  - Access control…

More information is available from:

https://www.nationalsecurity.gov.au/Media-and-publications/Publications/Documents/IED-Guidelines/IED-guidelines-crowded-places.pdf

CPTED AND DESIGN OF ANTI-TERRORISM BUILDINGS

Multiple design guides are available for the design of building to be resistant to terrorist attacks.

The following sources are provided as background information only. If you are designing in any of the realms relating to HVM, IEDs and anti-terrorism it is strongly recommended to obtain professional guidance.

- https://www.fema.gov/media-library-data/20130726-1455-20490-7805/fema426_ch2.pdf
- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/97992/design-tech-issues.pdf
- https://www.wbdg.org/FFC/DOD/UFC/ufc_4_010_01_2018.pdf

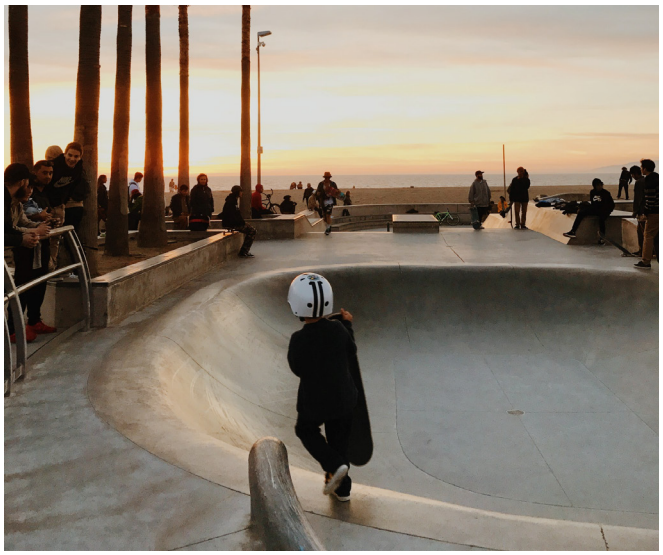
- https://www.dodea.edu/edSpecs/upload/DoDEA-PHYSEC-AT-Design-Guide-Version-1.pdf

WEEK 5

This weeks' agenda includes:

- 3Ds
- 2nd Gen CPTED
- Activity Support
- CPTED and Pandemics
- New insights – Fear of Crime
- New insights - Cookie-cutter CPTED
- 3rd Gen CPTED
- Maslow's Triangle
- Economics and CPTED
- Sustainability and CPTED
- Health and CPTED
- Domestic violence

3-DS: DESIGNATE DEFINE DESIGN



The **3Ds CPTED process** was developed by Timothy Crowe and is a 'universal' CPTED tool that reduces crime and anti-social behaviour across a very wide range of contexts.

The 3Ds process builds on the effectiveness of all other CPTED methods and guides their use, whilst at the same time being open to other approaches.

The 3Ds process is:

- ***Designate*** the purpose(s) of the space.
- ***Define*** desired and unacceptable behaviours.
- ***Design*** to support the desired behaviours and control the unacceptable behaviours.

The 3Ds process can also be used as a tool for *evaluating* and *assessing* locations.

3Ds analysis quickly reveals whether there is a lack of clarity about the purposes of a space (leading to potential loss of 'ownership'); whether desirable and undesirable behaviours have been clearly identified; whether the design of the space is effective or compromised; and which ways the design is compromised in crime prevention terms.

The use of the 3Ds process is strongly recommended.

Example: Bicycle parking

Devising suitable bicycle parking is a challenge for encouraging the use of bicycles instead of cars.

In the above location, a space on the road has been **DESIGNATED** for parking bicycles.

Desired behaviours have been **DEFINED** that include: parking bicycles off the pavement and encouraging car drivers to become cyclists. **Unacceptable behaviours** have been **DEFINED** that include car drivers driving into bicycles parked in this space.

The space has been **DESIGNED** using bicycle stands, bollards and an outline of a car in safety

orange colour to support the **DESIGNATION** of the space and the **DEFINED** desired and unacceptable behaviours.

2ND GENERATION CPTED

To recap from earlier: **2nd Generation CPTED** emerged as a response to evidence indicating that Defensible Space methods of CPTED sometimes were ineffective.

It was found that effective 'defensible-space' CPTED also depended on well functioning neighbourhoods, schools, social groups businesses and communities.

Additionally, it was found that well functioning neighbourhoods, schools, social groups businesses and communities, themselves acted to reduce crime.

The idea of such '2nd Generation CPTED' also aligned with the re-emergence of the role of community development and community participation in planning in crime prevention.

It linked to Christopher Alexander's Pattern Language and the increasing evidence of the crime-reducing effectiveness of youth centres, youth work and physical neighbourhood infrastructure such as community centres and community services centres.

Technologically, 2nd Gen CPTED also occurred at the same time as, and aligned with, an increase in planning of the use of geographical information systems (GIS) and space analysis software.

The term '2nd Generation CPTED' was coined by Saville and Cleveland via SafeGrowth in the late 1990s.

NEIGHBOURHOOD DEVELOPMENT TO REDUCE CRIME

There are many excellent examples of neighbourhood development to reduce crime from Latin Ameria, particularly of the favelas of Brazil.

RioOnWatch has many good examples including 'Ten Lessons from Asa Branca on Crime Prevention Through Environmental Design (CPTED)' at https://www.rioonwatch.org/?p=38342

Tactical Urbanism is a grass-roots planning and architectural crime prevention approach that focuses on reducing crime through community-based actions to change street architecture (see, e.g. http://tacticalurbanismguide.com)

Substantial resources on CPTED in neighborhoods are available at **SafeGrowth** at https://www.safegrowth.org

ACTIVITY SUPPORT

Activity Support is the deliberate use of activities that build sense of community at neighbourhood level to improve natural surveillance for additional hours each day.

Examples include:

- Mixing residential and commercial land uses
- 24-hour convenience stores under office blocks
- Street cafes and restaurants
- Night markets
- Special public events
- Increasing walkability
- Public seats

Note: Care is needed using Activity Support as used badly it can increase crime risks for vulnerable individuals and properties and increase crime targets and crime opportunities.

CPTED AND YOUTH WORK

Youth Work is one of the most effective CPTED tools to reduce crime.

At its best, Youth Work is informal education for young people.

Youth Work has proven effective at significantly reducing crime in a wide variety of contexts including shopping centres, public spaces, transport systems and their environs.

Youth Work has a variety of forms, which include:

- Detached Youth Work
- Youth Centre-based Youth Work
- School-based Youth Work
- Shopping Centre-based Youth Work
- Youth Cafes
- Informal education
- Groupwork

More sources of information include:

https://infed.org

https://www.crimesolutions.gov/

NEW THINKING: FEAR OF CRIME

Fear of Crime is:

- Mostly unconnected to actual rates of crime incidents
- Much higher than crime rates would support
- Primarily driven by media, fake news and sharing of incorrect information

Fear of Crime survey data

Fear of Crime Surveys have until recently been used as a substitute for crime data - in part because crime data have until recently been difficult to obtain.

Research and observation reveal, however, deep inconsistencies in Fear of Crime survey report data. This challenges their validity as sources of evidence of crime. The problems include:

- Individuals and groups typically believe crime rates are much higher elsewhere than where they live.
- Individuals report that crime rates are low where they live and there is little need to fear crime there (regardless of the actual crime rates).
- Repeated exposure to a location typically reduces fear of crime about that location

CPTED to reduce Fear of Crime

There is some evidence that the following factors reduce Fear of Crime in individuals and society more broadly:

- Nearby physical presence of a person who is a figure of authority
- Reduced access to media reports of crime
- Adequate and visually obvious escape routes
- Absence of lurk-lines
- Absence of entrapment locations
- Distance that one can see to be safe is greater than the distance to safety
- Reliable, safe, local community support
- Removal or control of an individual(s) obviously responsible for crimes

Unexpected outcomes in Fear of Crime

- **Reducing crime rates, e.g. by CPTED or fortressification does NOT significantly affect levels of fear of crime.**
- **Visual evidence of crime prevention methods can INCREASE fear of crime (e.g. increased numbers of police or security staff)**

NEW INSIGHTS: AVOID COOKIE-CUTTER CPTED

Cookie-cutter CPTED is applying the same CPTED methods to all sites regardless of the context.

The use of 'cookie-Cutter CPTED' has until recently been typical of traditional CPTED design guides.

'Cookie-cutter CPTED' that applies all CPTED methods to all situations has the following problems:

- It is wasteful in effort, finances and other resources because it installs CPTED

interventions for crimes that are not found at the location

- It is inefficient because CPTED methods can and do cancel each other out.
- It can increase crime rather than reduce crime
- It can cause many other adverse consequences and reduce quality of life

In contrast, CPTED that is **context-specific** and ***targeted*** against **evidenced crime risks** is effective, cost-efficient and contributes to quality of life whilst avoiding adverse effects.

3RD GENERATION CPTED: HEALTH AND SUSTAINABILITY

3rd Generation CPTED adds **Health** and **Sustainability** to the scope of 1st and 2nd Generation CPTED.

The idea of 3rd Generation CPTED was initiated following a UN/MIT paper on urban sustainability and the term was coined by Greg Saville in 2013.

The link between crime and health, however, goes back at least to the 19th century when crime was considered a health problem

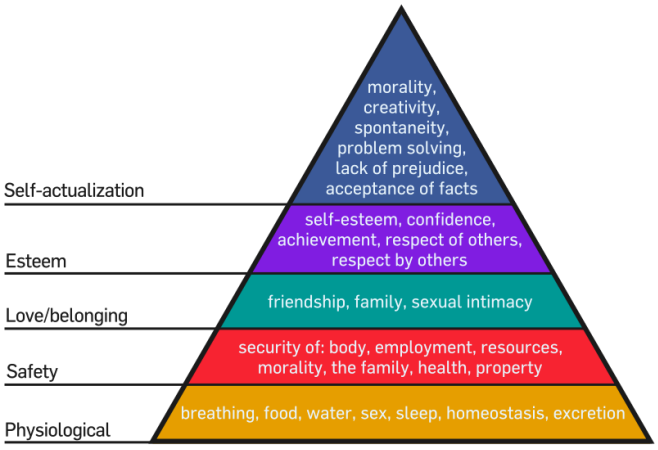
Crime and urban sustainability have also been historically linked in many ways.

For example, urban decay is typically associated with increasing rates of crime.

Sustainability and eco-design have also been previously linked to crime and CPTED in many ways, e.g. In the Secured By Design documentation, by the early work of C Ray Jeffries on CPTED and by Paul Cozens in the book 'Think Crime!' (see **Resources** section on last page of this document).

Maslow's Hierarchy of needs

In 1943, Abrahim Maslow published a list of human needs that influence human motivation. These are an hierarchy, and are often represented as a triangle as shown in the following image.



Maslow's triangle indicates how essential practical needs at the bottom of the triangle need to be satisfied first.

It indicates that the considerations of 3rd generation CPTED operate later higher up the process than the fundamentals of safety and security.

Crime and economics

Economic pressures can also be seen as an aspect of sustainability and crime.

Economic pressures on individuals and communities are widely regarded as being one of the drivers of increases in crime

However, economic pressures apply differently to poor and wealthy.

In sustainability terms, planning that reduces inequity reduces economic pressures at all levels and thus tends to reduce crime

Crime and Urban Decay

Urban decay is historically strongly associated with increased crime.

Improving the built environment (especially as perceived by the poorest) can reduce crime.

One likely mechanism in CPTED terms is by **Image Management and Maintenance**.

CPTED and Public Health

Lack of access to healthcare and ill health are significant determinants of crime.

There is some evidences that increase in facilities for health services, mental health and substance abuse support may reduce crime. This cites the relative number of individuals in prison with health mental health and substance abuse issues, e.g. There is some indication that in the US, 60% of individuals in prison have a substance abuse problem.

In addition, on the other hand, violent crime results in a significant health issue.

https://www.nber.org/papers/w22610.pdf

https://www.bjs.gov/content/pub/pdf/dudaspji0709.pdf

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3042267

https://www.cdc.gov/violenceprevention/pdf/history_violence-a.pdf

CPTED and Sustainability

The original paper by the UN and MIT researchers that led to Saville proposing the concept of 3rd Gen CPTED provided reasons that sustainable urban design could reduce crime as well as improve quality of life

There is now emerging anecdotal evidence that green, sustainable environments may indeed result in reduced crime.

This has resulted in a push to integrate sustainable design with CPTED.

https://www.un.org/ruleoflaw/files/urbansafetyandsecurity.pdf

https://www.greenseattle.org/wp-content/uploads/2019/02/CPTED-in-Natural-Areas-Final-Draft-Feb-2018_web.pdf

EFFECTIVE CPTED FOR COVID-19, PANDEMICS AND 'SHOCKS'

COVID-19 is a new and highly contagious coronavirus illness

Symptoms:

- Shortness of breath or cough, with or without fever.
- In some cases, severe pneumonia.

Groups at higher risk of illness and death:

- Aboriginal and Torres Strait Islander people 50 years and older with one or more chronic medical conditions
- People 65 years and older with chronic medical conditions
- People 70 years and older
- People with compromised immune

systems

Can overload hospital systems and threaten whole of society.

https://ww2.health.wa.gov.au/~/media/Files/Corporate/general%20documents/Infectious%20diseases/PDF/Coronavirus/coronavirus-faqs.pdf

Helpline in Australia 13 COVID (13 268 43)

COVID-19 Control Strategies

Primary government strategies to slow infection or eradicate COVID-19 include:

- Self-isolation (stay at home) and social distancing
- Hygiene (hand washing, avoid contact with others…)
- Prohibited activities and venues
- Restrictions on travel
- Support hospital system
- Financial relief for individuals and organisations
- New Police resources
- New resources for using personal data to trace at-risk contacts of infected individuals.
- New laws (e.g. domestic violence, tracking, travel)

(https://www.wa.gov.au/organisation/department-of-the-premier-and-cabinet/covid-19-coronavirus-community-advice)

These strategies to date have been more and less effective and appear to depend heavily on how early and how complete the interventions were applied.

Consequences of COVID-19 control strategies have included:

- Panic buying
- Working from home
- Home schooling
- Closed businesses and social facilities
- Personal isolation
- Empty roads
- Financial pressures on some individuals and families (and businesses)
- Some shortages (e.g. toilet paper)
- Increase in mental health issues
- Increase in domestic abuse
- No people around
- Closed warehouses full of goods with no staff.

COVID-19 CRIME PATTERN CHANGES

International and local intelligence indicates:

- Crime trajectories are changing significantly, and
- Crime statistical evidence is poor quality

An example is **domestic violence.**

Direct evidence worldwide indicates domestic violence has significantly increased during the times of strategies to control the COVID-19 pandemic.

That is, that the domestic violence/abuse crime trajectory has significantly changed and the crime rate has increased.

However, the indications from the usual forms of crime data such as Police incident reports, number of calls to domestic violence support services erroneously indicate that domestic violence has reduced.

One explanation of the contradiction, and failure of the crime statistics, is that during lockdown victims are locked in with offenders and do not have any time during the day safely to be able to contact Police or support services to call for help.

This results in increased domestic abuse risks along with reduced quality of crime statistical evidence.

Other examples include changes in crime incident recording due to changes in Police priorities as they transition to prioritising pandemic management and control of public order rather than traditional crimes.

Changes to crime trajectories

The indications are of the following crime trajectory changes during lockdown strategies aimed at pandemic control.

Domestic burglary - DOWN.
Explained by more people at home and thus less empty houses to make burglary easier.

Public Assaults - DOWN.
Explained by lower number of people on streets and closure of public entertainment facilities.

Domestic Violence -UP.
Explained by increased pressures and greater exposure of victims to offenders with less defenders.

Business burglary, theft, damage - UP.
Explained by commercial premises empty and with empty streets and Police occupied elsewhere there is a lack fo active defenders.

Theft for resale on informal markets -UP.
This is theft of copper, batteries, CRAVED items etc that can be sold through online marketplaces and alternative channels. It is explained again by lack of active defenders.

Fraud and Cybercrime against families - UP. This is explained by new opportunities becoming available and the disturbance to everyday practices both exposing families to new, higher risks and reducing their ability to identify and protect against those risks.

Business fraud & Cybercrime - UP.
Staff working from home breaks the online security arrangements of businesses and offers new opportunities for cybercrime and the disturbance to everyday work practices and use of home computing and network systems exposes businesses and staff to new, higher cyber risks and reducing the ability to identify and protect against those risks.

'CULTURE CHANGE' AND 'NO ONE THERE'

CPTED and policing reduce crime through:

- Cultural pressures and contexts
- Habits of law-abiding public behaviour
- Pressures from social interactions, especially in public spaces

COVID-19 has broken cultural habits and for a time severely reduced the numbers of people in public space

These changes influence crime activity as described, and also point to the need for changes in the patterns and priorities of CPTED

TRADITIONAL CPTED PRIORITIES

The traditional CPTED priorities are typically as follows:

1. **Natural surveillance ('eyes on the street')**
2. **Natural access control**
3. **Activity support**
4. **Defensible space**
5. **Territorial reinforcement**
6. **Image management and maintenance**
7. **Target hardening**

Changes in Effectiveness of CPTED methods due to COVID-19 strategies

As a result of COVID-19 control strategies, the relative effectiveness of CPTED methods appears to have changed as follows:

Natural surveillance - DOWN.
Due to lack of people on streets and inward looking residences, e.g. watching Netflix.

Natural Access Control - DOWN.
Due to lack of people on streets and in public spaces.

Activity Support - DOWN.
When no one is in public space Activity Support does not work

Territorial Reinforcement - DOWN.
When no one is in public space or at premises used by the public then everyone is located in private space and not in semi-private, semi-public or public space.

Defensible Space - UP.
Because more people are at home.

Image Management and Maintenance - UP.
Because maintenance workers are in public spaces and are providing 'eyes on the street' and are improving image and functionality of spaces.

Target Hardening - UP

This is providing the backstop for safety and security where there is lack of support from other CPTED methods.

EFFECTIVE CPTED DURING COVID-19

The above indicates that the priorities of effective CPTED methods changes as a result of the strategies used to protect against COVID-19 and similar pandemics.

The new order of effectiveness becomes:

1. **Target hardening**
2. **Stopping repeat victimisation**
3. **Routine activity analysis**
4. **Image management and maintenance**
5. **Territorial reinforcement and defensible space**
6. **Natural surveillance ('eyes on the street')**
7. **Natural access control**
8. **Activity support**

Target hardening

Target hardening is more important when other CPTED less effective. Effective architectural strategies using target hardening include:

- Make crime more difficult and more time consuming
- Conventional target hardening :
  - Strong doors, door frames and locks (preferably certified)
  - Security shutters
  - Defence in depth (e.g. securing internal garage doors, using a safe)
  - Secure perimeter
- Blocking offensive surveillance
- Ensuring eggs NOT in same basket…

Stopping Repeat Victimisation

Perhaps the strongest predictor of future crime at a location or for a potential victim is prior crime

The crime risk is highest immediately after a prior crime.

Hence best practice to reduce crime is to provide increased protection to a location or for a victim immediately after a crime.

To be most effective this appears to require visually-obvious protective changes

For domestic violence – new laws and processes apply as a result of COVID-19 strategies.

Specialists offer the best advice (1800 RESPECT 1800 737 732

Routine activity analysis

Routine activities define and shape crime risks.

COVID-19 strategies have resulted in many changes to routines of criminals and potential victims of crime.

Planning and architecture professionals can reduce crime during pandemics designing the built environment create changes of routine activities.

Temporary cameras can be used to reveal changes of routine activities in areas of interest – particularly at night or in remote areas. These observations can then be used to inform effective CPTED.

Image Management and Maintenance

During time of COVID-19, and pandemics requiring similar protective strategies; well-kept locations can reduce crime both in those locations and nearby.

The presence of maintenance and cleaning staff in public spaces and within and around buildings:

- Provides additional natural surveillance
- Shows they are occupied
- Indicates there are spare resources to protect them from crime

Effectiveness is **high** in frequently cleaned and maintained locations but lower for in-frequently cleaned/maintained locations.

Territorial reinforcement

Territorial reinforcement reduces crime by

making clear the boundaries of :

- Public space
- Semi-public space
- Semi-private space
- Private space

This visible hierarchy with its boundaries publicly indicates the types of expected good behaviours in each space and the likely responses if violated (defensible space).

During time of COVID-19, and pandemics using similar protective strategies, the crime prevention effectiveness of territorial reinforcement is **high** in occupied locations and lower in less occupied locations.

Natural Surveillance ('eyes on the street')

Natural surveillance is less-effective when the majority of people are at home with a focus inside the building, e.g. watching Netflix.

The same sightlines that enable crime prevention through 'eyes on the street' act in both directions. They can provide criminals with opportunities for surveillance of crime opportunities.

Architecturally, a design aim is to enable sightlines that in normal times can provide protective natural surveillance to reduce crime and at the same time reduce criminals' view of crime opportunities.

Natural Access Control

Under normal conditions, the 3 primary architectural roles of natural access control in reducing crime are:

- Visual signals to guide law-abiding persons
- Visual signals to support territorial reinforcement
- A physical basis for identifying and querying abnormal behaviours of people who don't follow the signs.

However, when public space is empty, as under COVID-19 or similar pandemic control restrictions, natural access control has less value and is less effective.

Activity Support

The primary aim of Activity Support is to encourage large numbers of law-abiding people to a location to provide 'eyes on the street' to discourage crime.

COVID-19 lockdown strategies reduce possibilities for Activity Support, even to zero in cases of complete lockdown.

One planning and architectural possibility, however, is to plan for the location of essential 'permitted activities' such as temporary food markets or mobile food vans to provide activity support in areas that would most benefit by such crime prevention support.

'SHOCKS', CRIME AND COVID-19

The rates of criminal activity and the types of crime committed remain mostly consistent, if life continues unchangingly.

However, the trajectory of rates and types of crime change rapidly when life changes as a result of unexpected events or ***'shocks'***.

'Shocks' can range from simple changes in routines to major disruptions.

They include onset of bad weather, holidays, special events, wars, financial shocks and pandemics such as COVID-19.

In general, the effects of 'shocks' on crime result in the displacement of crime in three ways:

- in location
- in time
- to different crimes.

The effect of an unexpected shock disrupts crime activity, often with the following pattern:

- First crime reduces
- Then crime activities increase beyond the previous normal and change both in crime types and locations
- Crime activity settles down to similar level of crime activity as before the 'shock' but may be in different places and for different crime types.

This with variants for the multiple pandemic waves would be expected to be the pattern for a pandemic 'shock' such as that of COVID-19.

CPTED, DOMESTIC VIOLENCE AND COVID-19

Domestic violence includes several classes of violence within a family setting:

- Intimate partner violence
- Violence against children
- Teen violence
- Elder violence

The concept of domestic violence now includes abuse and coercion and emotional as well as physical abuse.

A 'gold standard' on legislation is the Domestic Abuse (Scotland) Act 2018 available:

https://www.legislation.gov.uk/asp/2018/5/contents/enacted

The risk factors for domestic abuse are well mapped - most relate to characteristics of offenders and victims.

The **situational crime prevention** factors that help reduce domestic abuse via CPTED are limited but important. They include establishing a supportive physical environment that is protective:

- Sufficient access to protective refuges/ shelters and support
- Physical protected means of communication that enable calls for help (e.g. hotlines)
- Changing the physical and social environments of neighbourhoods to enable community support
- 2nd and 3rd Generation CPTED approaches to developing Community-based prevention strategies
- Strengthen economic support for families
- Enable survivors' rapid access to affordable safe housing

PLANNING AND DESIGN OF WOMENS' SHELTERS

Crucial design factors of Womens' Shelters are:

- Safety
- Anonymity
- Privacy
- Significantly increased availability
- Improvements in design quality and comfort

More information is available from:

https://endvawnow.org/uploads/modules/pdf/1363538451.pdf

https://www.nrpa.org/globalassets/journals/jlr/2004/volume-36/jlr-volume-36-number-4-pp-483-512.pdf

https://www.who.int/hac/network/interagency/b8_shelter.pdf

https://www.ifrc.org/PageFiles/95884/D.01.02.a.%20SPHERE%20Chap.%204-%20shelter%20and%20NFIs_%20English.pdf

https://www.researchtrend.net/ijet/pdf/59-%20109.pdf

https://www.dvevidenceproject.org/wp-content/themes/DVEProject/files/research/DVShelterResearchSummary10-2012.pdf

Domestic violence call for help signal

The above is a signal that one is threatened.

The signal can be disguised by incorporating it into many other gestures such as playing with hair and reaching for goods or change.

The signal can be used face to face or on camera by anyone; females, males, children. The sequnce is:

- Face palm to camera
- Fold thumb to palm
- Fold fingers over thumb

Domestic violence call for help code

In Europe, the code phrase 'Mask 19' is becoming used in pharmacies to call for help from domestic violence. The pharmacist will say the mask is out of stock, but to leave a number and address so that the mask can be delivered. Instead, the pharmacy will alert the authorities or aid agencies that someone at that address needs help.

In the UK, some pharmacies are proving secure rooms that enable women to phone for help.

WEEK 6

The agenda for this week includes:

CPTED in new build/refurbishment/redesign to address crime/building maintenance/building life-cycle 'cradle-to-cradle'

- Review and define CPTED problems in planning, architecture and development terms
- CPTED for developers
- CyberCPTED, Smart-Cities, Smart Buildings and Digital Built Ecosystems
- Using CPTED site and building audits
- Effective use of CCTV in CPTED
- CPTED to design industrial and commercial buildings to minimise theft and vandalism
- Q&A

REVIEW AND DEFINE THE CPTED PROBLEM

In CPTED for Planning, Architecture and the Built Environment there are typically found five main types of CPTED problem:

- Current persistent crime problem at

certain times in a location

- Current problem levels of similar crimes in similar types of location
- CPTED for new developments
- CPTED for other stages in the development cycle (cradle-to cradle)
- Anti-social behaviour (addressed earlier)

Persistent crime problem at a location

Persistent crime at a location provides a sound basis for devising CPTED interventions and the targeting of CPTED to address particular crime types, victims and offender threats.

This ensures the CPTED is:

- Effective
- Cost-effective
- Easier to design
- At less risk of adverse effects
- Easier to integrate with the built environment

CPTED for similar crimes at similar locations

It is common that similar crimes occur at similar locations. For example, in a group of similar houses, a burglar can identify the same successful strategy for all houses of that type.

This pattern of crime problem enables the design and targeting of CPTED to suit multiple similar locations with similar crime histories.

A suite of CPTED interventions can be created to target the specific crime types, victims, offender threats and environmental similarities of these situaions.

As in the previous example, this helps ensure the CPTED solutions are:

- Effective
- Cost-effective
- Easier to design
- A less risk of adverse effects
- Easier to integrate with the built environment

CPTED for new development process

In new developments, CPTED is best included early in the planning and design development.

This is because CPTED can be included at almost zero cost early in the design process, with the price increasing the later it is left.

A simplified CPTED process during development would typically include:

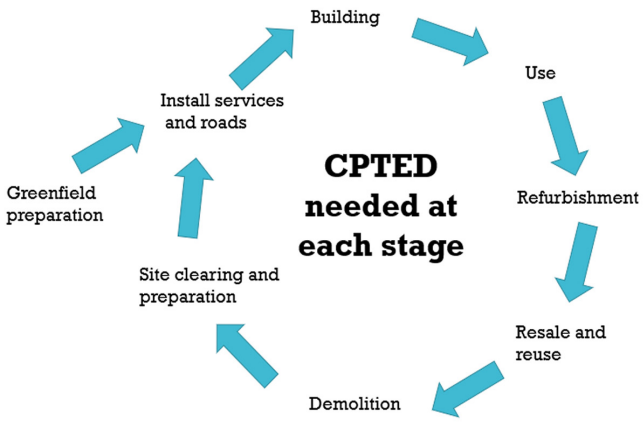
- Crime Risk Assessment of the development location including crime statistics, demographics, geographic juxtaposition, routine activity analysis…
- Identification of specific targeted crime risks
- Design of appropriate architectural/ digital targeted CPTED design strategies for these crime risks

- Identify potential adverse effects
- Redesign to minimise adverse effects
- Identify an evaluation method for the CPTED

CPTED in the cradle-to-cradle Development cycle

The cradle-to-cradle development cycle originates in greenfield sites and cycles through development, use, refurbishment, reuse, demolition, site clearing and then redevelopment.

Different forms of CPTED interventions are needed at each stage in this development cycle.



CPTED for Developers

CPTED is important to developers for multiple reasons, including:

- Large development proposals require CPTED review
- In some jurisdictions, small development proposals (down to house size) require CPTED review and approval
- Crime and anti-social behaviour result in lower lot returns
- Sales advantage from CPTED
- CPTED features are zero cost at design stage compared to adding them later

CYBER-CPTED

Completely new kinds of crime have emerged at the intersection of the physical and digital worlds.

Currently, crime prevention in the physical realm alone is addressed by CPTED, and crime prevention in the digital realm alone is addressed by cyber-security.

However, these new kinds of crime that are emerging at the intersection of the physical realm and the digital realm are not adequately addressed by either CPTED or cyber-security.

Crime prevention for these emerging forms of physical/digital crimes involve sa different way of thinking than either CPTED or cyber-security.

The author has coined the term ***CyberCPTED*** in 2016 to refer to this area of crime prevention and CyberCPTED crime prevention methods have been developed within the Design Out Crime and CPTED Centre for over 4 years now..

This new crime prevention field of

CyberCPTED builds in part from the lessons and methods used for both CPTED and cybersecurity.

Recently, in the last few months of 2020, one of the international anti-virus firms has also started using the term CyberCPTED as it has also identified such problems. The problems identified above have now recently been discovered by the security industry who have referred to them as 'convergent security' problems.

The key issues in CPTED are:

- New kinds of crime are both digital and physical in ways neither CPTED nor cyber-security address well
- Cyber-CPTED combines and goes beyond traditional 1st, 2nd and 3rd Generation CPTED, cyber-security and public interest technology.
- CyberCPTED works on crimes that join the built and digital environments

CyberCPTED includes methods from ***all*** CPTED generations. It occurs across and sits in parallel to all of 1st, 2nd and 3rd Generation versions of CPTED

Additionally, CyberCPTED **integrates** traditional 1st Gen, 2nd Gen and 3rd Gen CPTED with cyber-security and public interest technology.

Why CyberCPTEDis important

Cyber CPTED addresses a new and large number of emerging crime prevention issues of the Digital Built Environment.

The digital built environment is expanding rapidly to include, e.g.:

- Smart Buildings
- Smart City design
- Smart Houses
- Digitally-driven fear of crime for commercial gain
- Smart Vehicles and Autonomous Vehicles
- Tele-work
- Tele-health
- Smart Public Transport
- Digital commercial warfare
- Smart Public Governance
- Robotic aged care
- Smart Infrastructure
- Smart Mass Storage
- Smart Shopping
- Smart City Entertainment
- Smart Public Art
- Internet of Things
- Complex Digital Infrastructure and Manufacturing (OT/SCADA)

CyberCPTED and 1st Gen CPTED

CyberCPTED relating to 1st Generation CPTED and Situational Crime Prevention is primarily about crime methods relating access control, theft and damage, e.g.:

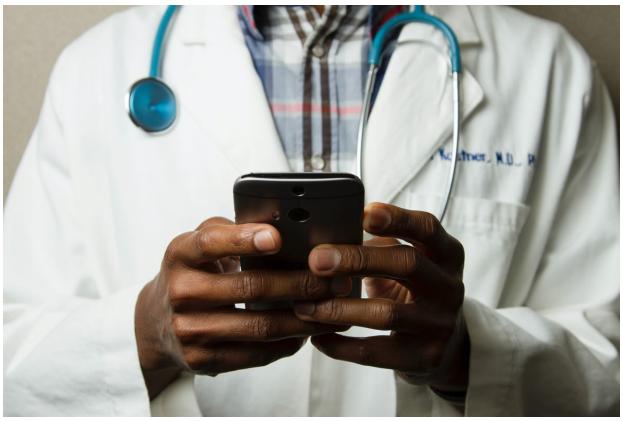
- digital locks
- secure storage of information
- secure processes
- securing CCTV
- face recognition
- numberplate recognition
- cyber-enabled terrorism control
- security of industrial processes (e.g. OT and SCADA)
- securing management of Smart City and Smart Home services

CyberCPTED and 2nd Gen CPTED

CyberCPTED relating to 2nd Generation CPTED is about crimes involving the mox of physical and digital technologies to develop and support communities, e.g.:

- Digital tools for community development
- CCTV that involves communities
- Digital ways of generating fear of crime for commercial benefit
- Digital Criminal Justice Systems services in the community
- Social media
- Social political activism
- Physical digital warfare
- Disaster support
- Digital systems for public housing management

CyberCPTED and 3rd Gen CPTED



CyberCPTED for 3rd Generation CPTED is about physical/digital crimes relating to health and sustainability and the use of health and sustainability to reduce crime including:

- Green architecture (digital aspects of eclogical managment)
- Walkability (using digital devices in public space)
- Digital food safety systems
- Clean air management
- Biosecurity systems
- Crimes of medical records management
- Digital air quality and water aquifer management
- Digital biodiversity management etc.

CyberCPTED methods

CyberCPTED focuses on the emerging new kinds of crime at the intersection of the physical and the digital worlds.

These crimes and the methods of crime prevention involve a different way of thinking than either CPTED or cyber-security addresses.

Some basics:

- When analyzing a cyberCPTED situation look for NEW kinds of crime
- Understand that CyberCPTED will involve methods that differ from the classical methods of CPTED and cybersecurity
- For broad protection strategies look to use overarching principles such as:
  - Increasing the time taken for crimes (time-based security)
  - Defence in depth (using both physical and digital protection)
  - Separation of valuable assets
  - Mixed mode access control (physical/digital)
  - Use encryption
  - Host and process data and decision-making locally and securely

- Be aware of parallel systems' risks

CPTED SITE AUDITS AND BUILDING AUDITS

A key part of a Crime Risk Assessment for a location is a CPTED site review

A formal CPTED review in a standard survey format is commonly called a **CPTED Site Audit.**

The WA Police provide two paper-based CPTED audit questionnaires via their Police Community Liaison Unit website.

We have made available online these two questionnaires as free online CPTED surveys that can be used from your phone or computer at:

https://designoutcrime.org/ls/index.php

We have in development a new CPTED audit based on the European CPTED standards and this will also be available from:

https://www.designoutcrime.org

The above surveys address all crime types in a location and are intended to be used by professionals.

Additionally, Neighbourhood Watch Victoria has developed a CPTED quiz aimed at householders to reduce their risk of burglary.

This is available at:

https://howsafeismyplace.com.au/

USE OF CCTV IN CPTED

The design of crime prevention interventions at a location depends on sound data about that location and the activities there.

Traditional CPTED approaches use associative data such as crime statistics and demographic information.

It is a limitation of associative data that **we do not know the real cause of crimes** but we *assume* there must be an association between a change in crime as represented by crime data, and something else that changed just before or around the same time.

The problem is that we cannot be sure of the cause using that method and this partially undermines the basis for design of CPTED interventions and their outcomes.

A better approach is to use **causal** data where we have a better explanation of the cause of crime or crime reduction.

There is a spectrum:

CAUSAL data<---------->ASSOCIATIVE data

Better CPTED uses CAUSAL data.

We can base CPTED on better causal explanations by gathering better information about the activities that happen at a location.

Cameras provide a cost-effective technology for gathering information about activities, especially routine activities, in a location.

Note: This is a different use of cameras to gathering information for security or for prosecution.

Security and privacy using CCTV in CPTED

The term **CCTV** means 'Closed Circuit Television' .

The underlying idea of closed circuit television is that the CCTV data is **private** not public.

Temporary Standalone CCTV for targeted CPTED

Better information and better understanding of the activities and routines in a location enables more effective and cost-effective targeted CPTED.

Temporary surveillance using temporary standalone CCTV cameras provides a means to gather information about routine activities that drive crime. This information enables more targeted CPTED

Temporary standalone CCTV is a cost-effective way to gather 24/7 information about activities at a location.

(image source: https://www.alibaba.com/product-detail/hidden-wifi-4g-wireless-remote-control_62437872632.html?spm=a2700.galleryofferlist.0.0.737379ffTsGkM8)

Practical CCTV for CPTED

Standalone, battery and solar powered CCTV cameras are now widely available at relatively low cost. (The above camera is available from www.designoutcrime.org)

Benefits include:

- They can be placed wherever is best to record activity.
- They store recordings on memory card (no wifi/cables etc)
- Quality of images can be low (not prosecution quality) which enables reduced costs for all aspects of the data collection
- Use good infrared for night vision
- Temporarily attached to existing built structures
- Recording encrypted for privacy
- Playback data at high speed to review
- Total camera cost is low compared to conventional prosecution quality CCTV camera systems
- The same camera can be re-used multiple times in different locations

A key thing that must be addressed is to obtain permission to attach to structures in the built environment.

(image source https://www.alibaba.com/trade/search?fsb=y&IndexArea=product_en&CatId=&SearchText=solar+camera)

Standalone CCTV for CPTED in natural surroundings

There are also standalone cameras well suited to natural environments where trees are the most convenient item to attach cameras.

These 'trail' cameras enable recording of routine activities in remote 'natural' locations.

(image source: https://www.alibaba.com/product-detail/Hunting-Camera-sifar-Trail-16M-1080P_62392759207.html?spm=a2700.galleryofferlist.0.0.1241209eSgXyBE)

CPTED - VANDALISM AND THEFT FROM CLOSED WORKPLACES

The crime prevention challenges of closed workplaces include:

- Poor natural surveillance
- Absence of defence/natural security
- Slow response time to alarms
- Large perimeter with multiple attack surfaces
- Target hardening is typically low
- Activity support, natural access control, territorial reinforcement, image management and maintenance are almost irrelevant when no one is around

CPTED strategies to reduce theft from closed workplaces

The primary purpose of all crime prevention strategies is to discourage the offender(s) from undertaking the crime.

CPTED strategies to reduce vandalism and theft at closed workplaces include:

- Significant and visually-obvious target hardening
- Routine activity disruption (irregularly timed security inspection)
- Image management and maintenance (work done whilst closed)
- Crime opportunity reduction (additional security for valuable items, moving valuables out of obvious sight – or removal)
- Remote surveillance of activity at the location

Target-Hardening to reduce theft from closed workplaces

The primary purpose of target-hardening and security strategies is to:

- ***INCREASE the TIME needed to commit a crime***
- ***REDUCE the TIME needed to respond***

Target hardening strategies for closed workplaces include:

- Effective (preferably certified for purpose) locks on the perimeter and doors and windows
- Defence in depth strategies to force additional time and difficulty (multiple locked internal areas)
- Immediate intruder detection and remote surveillance (CCTV with mobile phone connection or formal monitoring)
- Rapid response and protection arrangements

CPTED RESOURCES

A substantial amount of free CPTED resources are available from **www.designout crime.org**.

www.linkedin.com/company/design-out-crime-&-cpted-centre/ and **www.facebook.com/designoutcrime**

We recommend the book ***Think Crime!*** widely considered to be the most up to date and comprehensive book on CPTED. Written by Dr. Paul Cozens (Assoc. Director) and available from **www.designoutcrime.org** and **www.praxiseducation.com**