CCi

CUTTING CRIME IMPACT

Cutting Crime Impact

www.cuttingcrimeimpact.eu

DELIVERABLE 2.5

Review of State of the Art: CP-UDP

Contact Us . info@cuttingcrimeimpact.eu

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 787100

CCi

CUTTING CRIME IMPACT

DELIVERABLE 2.5

Review of State of the Art: CP-UDP

Deliverable Type
Report

Month and Date of Delivery
Month 08, May 2019
(Revised: April 2022)

Work Package
WP 2

Leader
DSP

Dissemination
Public

Authors
Paul van Soomeren, DSP
Prof. Caroline L. Davey, USAL
Andrew B. Wootton, USAL

Programme	Contract Number	Duration	Start
H2020	787100	39 Months	1 October 2018

CONTRIBUTORS

NAME	ORGANISATION
JULIA HALL	GMP
DOREL HIIR	PJP
ENNO WIGGER	DSP
RANDY BLOEME	DSP
BIANCA KREUNING	DSP

PEER REVIEWS

NAME	ORGANISATION
DR DAGMAR HEINRICH	USAL
DR OSKAR GSTREIN	RUG
ANNO BUNNIK	RUG

REVISION HISTORY

VERSION	DATE	REVIEWER	MODIFICATIONS
1.0	07/05/2019	Prof. Caroline l. Davey	Initial version
1.2	26/11/2019	Andrew B. Wootton	Formatting & minor edits
2.0	08/07/2020	Paul van Soomeren	Lessons Learned section added
3.0	13/04/2022	Paul van Soomeren	Additional recent theory added
3.1	28/04/2022	Dr Dagmar P. Heinrich	Minor edits

Table of Contents

1 Introduction

Crime Prevention through Urban Design and Planning (CP-UDP) prevents crimes against the person and property, and reduces feelings of insecurity, by incorporating evidence-based urban design, planning and management measures within proposals for urban development. Such measures generally seek to embed protective physical features and encourage prosocial behaviour through the design and management of a location. Published guidance encourages key stakeholders to consider crime and insecurity throughout the development process—including during the early stages (Politecnico di Milano, 2010). CP-UDP advice on crime risk and interventions related to specific locations and developments is delivered by staff working for law enforcement agencies (LEAs), local authorities or other organisation (such as neighbourhood organisations, housing associations and researchers). Staff working for UK LEAs have traditionally been called Architectural Liaison Officers (ALOs), although a number of different terms have been adopted including Crime Prevention Design Advisors (CPDAs) and Designing Out Crime Officers (DOCOs).

The term CP-UDP was adopted by EU COST Action TU1203 in 2014 to emphasis the role of professionals in the urban design, planning and management (including Maintenance) disciplines in crime prevention (Barosso et al, 2014). CP-UDP draws on scientific evidence, guidelines and approaches that have emerged from a variety of disciplines. The most widely known of these being Crime Prevention Through Environmental Design (CPTED). Pronounced 'sep-ted', CPTED is defined as:

> *"... a multi-disciplinary approach for reducing crime through urban and environmental design and the management and use of built environments. CPTED strategies aim to reduce victimisation, deter offender decisions that precede criminal acts, and build a sense of community among inhabitants so they can gain territorial control of areas and reduce opportunities for crime and fear of crime.*
>
> Source: International CPTED Association website, accessed 30 April 2019, http://www.cpted.net

This CCI report explains the background to CP-UDP, in terms of the approaches, theories and models it encompasses, as well as the implementation of the approach across Europe. CP-UDP implementation is discussed in relation to the UK (and in particular, Greater Manchester); Netherlands; France; Germany (and in particular, the federal state of Lower Saxony); and Estonia. The report also details current developments in relation to a European Standard for crime prevention through urban design and planning. The final sections of this report outline the success of design and security approaches in reducing crime, as well as the strengths and weaknesses of different strategies for integrating crime prevention in the design, planning and management of the urban environment.

2 Methodology

Task 2.5 of the CCI project involved a review of academic and LEA operational literature and approaches. The aim was to understand 'what works' in Crime Prevention through Urban Design & Planning (CP-UDP) across Europe. This study examined how changes in policing and policy-making priorities in the last decade have impacted the delivery and effectiveness of CP-UDP across Europe. This task was divided into three activities, as follows:

- Review of academic and LEA operational literature on CP-UDP. CCI consortium members gathered relevant background information and examples of existing toolkits, and (where available) their impact. This research deepened and enhanced the study of CP-UDP in 27 EU countries conducted by COST Action TU1203, as well as European standardisation work conducted by TC 325 by CEN (CEN standards in the 14383 series).
- Information from 'leaders in the field' was gathered through a short survey emailed to experts and through interviews. The emailed survey was considered more practical since a number of experts in CP-UDP are located outside of Europe, in Asia, Africa and the Americas. This part of the CCI research explored:
  - How LEAs resource and deliver CP-UDP
  - How CP-UDP is integrated within national and European design and planning procedures
  - What information LEAs provide to enable architects, urban designers, planners and urban managers to deliver CP-UDP
  - How this is communicated (e.g. crime data, offender MOs, and/or local intelligence).

  The survey was sent to 22 experts in CP-UDP and CPTED and resulted in 11 responses.
- Further information was gained from interviews with 5 experts: 2 face-to-face, 1 by telephone and 2 via Skype. Since structured information had been gained from the survey, the interviews were more open and discursive. CCI consortium members also benefited from attendance at conference presentations, workshops and meetings on CP-UDP approaches, the CEN standard (TC 325) and European Crime Prevention Network (EUCPN), in Brussels (BE), Budapest (HU), Oslo (NO) and Tallinn (ES).
- A workshop on the state-of-the-art in CP-UDP. Held in February 2019, the Amsterdam workshop discussed results and issues raised by the research and explored different approaches to tool development and delivery relating to CP-UDP in Greater Manchester (UK) and Estonia.

3 Academic literature on CP-UDP

According to the criminologist Paul Ekblom, the benefits of good design to making environments and products safer have been recognised for hundreds of years. In his Royal Society of Arts lecture, Less Crime by Design, Ekblom (2000) highlights a number of historical examples of intelligently applied design being used to prevent crime, from the building of castles and fortifications to the design of coins and stamps. Nevertheless, the approaches to crime prevention have changed significantly over the last hundred years and continue to vary across different contexts. Crime Prevention Through Urban Design and Planning (CP-UDP) is very much inspired by approaches to studying and addressing crime that originated in the United States.

3.1 Chicago school of Sociology: social disorganisation

In the US environmental crime prevention blossomed in the long existing tradition of The Chicago School of Sociology with researchers like Clifford Shaw and Henry McKay building on the work of Ernest Burgess and Robert Park and the zonal model of urban form and the ecological theory of social disorganisation (Shaw, 1929; Shaw and McKay, 1931; Shaw and McKay 1942 and 1969).

Shaw and McKay mapped the residences of known juvenile delinquents in cities like Chicago and showed that juvenile delinquents were mainly living in the concentric zone adjacent to the central business district. The rate declined with increasing distance outwards. They also showed that within specific 'natural areas' a high delinquency rate existed together with other social problems like poverty, broken families, disease and ill health. This high delinquency rate persisted until the mid-1960s. In these deprived areas—called the ‘zone of transition’—the traditional organisations and institutions (like schools, churches and family) had lost their power to teach people appropriate and non-criminal behaviour. Social control was reduced, and social disorganisation resulted. Young people living in such neighbourhoods were socialised into criminal behaviour by their peers living in the same neighbourhood. In this way, a neighbourhood constantly ‘produced’ new generations of young people who were delinquent, many of which went on in adulthood to become offenders. Through this research, the Chicago School focused attention on offenders and the places—the local neighbourhoods—where problems of crime and incivility manifested.

3.2 Crime Prevention through Environmental Design: Brain, behaviour and environment

The concept of Crime Prevention through Environmental Design (CPTED) was first coined by C. Ray Jeffery in his 1971 book published with the same title. Jeffery was a behavioural scientist[1] and criminologist presenting a theoretical framework and new ideas that were not particularly mainstream in the criminology of those days. Jeffery criticised criminology for overstating the influence of social causes of crime, like poverty, deprivation and subculture. He argued that the prevention of crime should focus more on factors relating to the biology of crime (the brain) and reducing the environmental opportunities for crime:

> *"Crime can be controlled through urban design, wherein safety and security are designed into streets, buildings and parks. Our cities are unsafe because they present opportunities for the commission of crimes. Cities can also be designed so as to increase human contact of an intimate nature. Anomie, loneliness, and alienation need not characterise our urban life. Urban renewal can be substituted for a welfare system, and people can be put to work building an environment supportive of the biological and social development of its inhabitants."*
>
> Jeffery, 1971, pp. 224–225.

Jeffery was a strong advocate for a pro-active interdisciplinary approach in which the 'environment-individual relation' is crucial. A new mix of biology, neuroscience, urban planning, environmental design and criminology was promoted:

> *"A successful crime control model must deal with behaviour before the crime occurs, must deal directly with criminal behaviour, and must deal with environmental design, rather than the individual offender. Control over the environment necessary for crime control can come about through urban planning, science and technology, and behavioural therapy."*
>
> Jeffery, 1971, p. 278.

The behavioural therapy mentioned by Jeffery and the stronger focus on factors relating to biology of crime and the brain of offenders has been taken forward into the practice of offender-based prevention of crime and recidivism[2]. Another aspect of Jeffery's theory that has been taken forward

[1] *"A point constantly made in this book is that social policy must be based on a science of behaviour, if it is to be effective."* (Jeffery 1971/276)

[2] See for the influence of Jeffery on other disciplines, and especially on the multi-disciplinary approach: Barnes, A. R. (2013). On neuro-criminology: Glenn and Raine, 2014; and on the role of neurosciences in law enforcement and the judicial system: Penney, 2012.

into practice is the role of the urban environment in preventing criminal behaviour. This is what has become known as Crime Prevention Through Environmental Design (CPTED).

3.3 Defensible space and 'eyes on the street'

More or less at the same time as Jeffery published his book Crime Prevention through Environmental Design, the US architect and planner, Oscar Newman, published a book entitled Defensible Space (1972). Newman argued that the physical design of buildings and neighbourhoods can either increase or decrease the residents' sense of control over the environment they live in territoriality. In a second – less well known – book Newman shifted his attention from the physical to the social environment. In both books, Newman used the ideas of the well-known journalist and merciless critic of 'modern urban design', Jane Jacobs. Jacobs fought against the modernist architectural ideas of CIAM[3] and the architect and urban planning theorist Le Corbusier. Le Corbusier focussed on high-rise apartment complexes in a sea of green parks, with a segregation of the residential and business functions in a neighbourhood from traffic functions, considered polluting and unhealthy.

Newman argued that it should always be clear who has the ownership and control over a space. This way space becomes 'defensible space'. Most often this would not have to be achieved by 'hard' security measures (target hardening with locks, bolts, fences and barbed wire)—also because this type of measure often generates feelings of insecurity. But rather with more subtle 'soft' measures like the change in colour and texture of the street surface; a symbolic gate; or low hedges or stones indicating a demarcation. Newman's ideas are thus not only focussing on the physical or technical aspects (concrete, brick and mortar) but also on social and behavioural aspects of the urban space.

3.4 Situational approach

In the UK, Ronald Clarke (then working for the UK Home Office) and Pat Mayhew published studies on 'designing out crime' and 'situational crime prevention' (Clarke and Mayhew, 1980 and Clarke, 1997).

This situational approach was defined as an approach:

> *"… comprising opportunity-reducing measures that: (1) are directed at highly specific forms of crime; (2) involve the management, design or manipulation of the immediate environment in as systematic and permanent way as possible; (3) make crime more difficult and risky, or less rewarding and excusable as judged by a wide range of offenders."*
>
> Clarke, 1997, p. 4.

[3] Congrès Internationaux d'Architecture Moderne. International Congresses of Modern Architecture. An influential group of top architects and urban planners spreading the principles of modern architecture between 1928 and 1959. See Mumford, 2000 and Giedion, 2009.

In Opportunity Makes the Thief, Felson and Clarke (1998) argue that opportunity should be understood as a 'cause' of crime.

The model frequently used to explain how an offence such as burglary or robbery comes about is the Crime Triangle, or the "problem analysis triangle" (see figure 1).4 The inner layer of the triangle lists the three elements that must be present for a crime to occur. The second layer represents the interventions that may prevent crime from occurring. Such interventions may involve guardians, 'handlers' or managers. The crime triangle is used to guide investigations of crime problems and identify potential solutions.

Figure 1. The Crime Triangle

The ideas of Jeffery, Jacobs, Newman, Clarke and Mayhew have been developed to into guidelines for the design, planning and management of the urban environment. The importance of maintenance stems from 'Broken Windows' developed by Kelling and Coles (1996)—where signs of decay, vandalism, etc. invite criminal behaviour by suggesting that no-one cares about an area. The different aspects are summarised in the diagram below:

[4] https://popcenter.asu.edu/content/problem-analysis-triangle-0 (Retrieved March 17th, 2019)

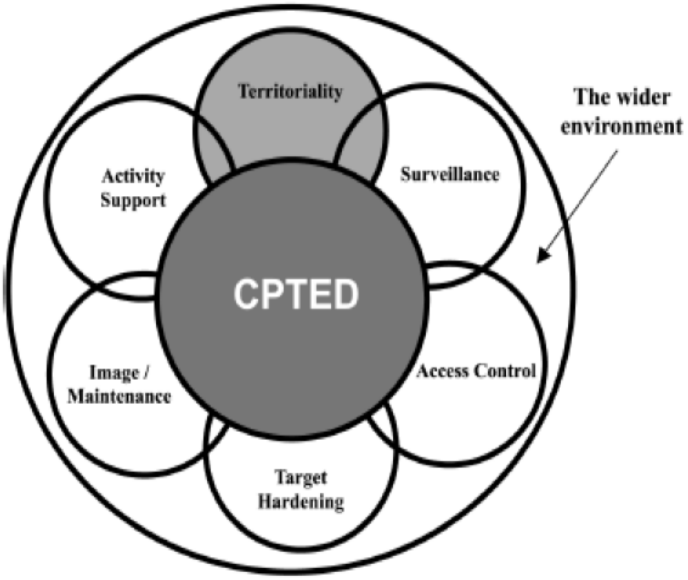

Figure 2. The Component Aspects of CPTED
(Source: Adapted from Moffat (1983) p.23)

CP-UDP approaches were developed in the 1980 and 1990s in several European countries, mainly in the Northwest European countries (for Scandinavia see Grönlund, 2013, p.3; for The Netherlands see RPD, 1985 and Soomeren, 1987).

3.5 Environmental crime prevention, Weisburd and the social context

While Jacob's and Newman's work provided valuable insight into urban design and planning, it paid less attention to 'the offender' in terms of their motivations, behaviours and thoughts. From the 1980s onwards, Paul and Patricia Brantingham developed an approach called environmental criminology. Their focus was on environmental or contextual factors that may influence criminal activity: space, time, law, offender, and target or victim. These components are considered a necessary and sufficient condition for crime to take place. For without one, the other four, even together, will not constitute a criminal incident. The result of a combination of these four components is a specific crime pattern. The Brantinghams still publish a lot of research in this tradition (Wortley and Townsley, 2017), as do others including Richard Wortley, Jerry Ratcliffe and Michael Townsley.

Related to their research is the work of David Weisburd — the 2010 winner of the 'Stockholm Prize for Criminology'. He stands in the ecological tradition of the Chicago school, when researching very detailed and place specific crime figures in Seattle USA (Weisburd et al, 2012 and Weisburd, 2015). His research bridges not only the 'social-physical gap' but also brings together other approaches, including the environmental opportunity approach of Ronald Clarke, Marcus Felson and the Brantinghams and the ecological social disorganisation approach of the Chicago school.

Weisburd and his co-researchers highlight the importance of social interventions to sustain improvements in security, stating that: “social interventions broadly focused will be needed to have long term effects on crime.” (Weisburd et al, p. 177).

3.6 Design Against Crime

The UK’s Design Against Crime programme seeks to raise awareness amongst designers of their role in crime prevention and provide practical guidance and examples to support them in their efforts to understand and improve security. Design Against Crime argues that designers must learn to ‘think thief’—to understand potential offenders' motivations, anticipate their actions, and understand the tools, knowledge and skills they employ. The aim is to out-think the offender and develop design solutions that ‘short-circuit’ potential offenders’ behaviour. By effectively preventing crime, designers protect users from harm, clients from financial loss and help create a safer, more secure society (Davey and Wootton, 2017).

Design Against Crime began in 1999 as a programme of UK Design Council work funded through the Home Office Crime Reduction Programme and developed in partnership with the then UK Department of Trade and Industry5. The research was conducted by the University of Salford, Sheffield Hallam and Judge Institute of Management Studies. The Home Office later funded the Design Council to develop a range of activities and resources to raise awareness of crime issues amongst design professionals and education, including case studies, teaching materials, a design competition and a professional development programme (Design Council, 2003, 2011). In 2001, the UK criminologist Ken Pease wrote the Design Council policy document ‘Cracking Crime Through Design’. This policy paper was one of a series that aimed to promote the use of design to deliver solutions to issues of concern to society. In 2003, the Design Council published ‘Think thief: A Designer’s Guide to Designing Out Crime’. In 2011, a second guidance document was published by the Design Council entitled ‘Designing out crime: A designers' guide’.

The UK Government and Design Council provided some funding for Design Against Crime work at Central Saint Martins the University of the Arts London. This was used to deliver practice-led research and exhibitions in Milan and Barcelona, as well as to support development of products integrating crime prevention features within their design (see www.designagainstcrime.com) and led to the founding of the Design Against Crime Research Centre (DACRC) at the institution.

Early in 2005, the Design Against Crime Solution Centre was established at the University of Salford — a unique partnership with Greater Manchester Police (UK) and DSP-groep (NL). The Solution Centre highlights the importance of embedding crime prevention within the early stages of the design

[5] The Department of Trade and Industry was replaced by Department for Innovation, Universities and Skills and Department for Business, Enterprise and Regulatory Reform in 2007.

process. Early stage integration is more preferable to 'retrofitting' potentially unsympathetic security devices after a design is complete — and is also cheaper (Davey and Wootton, 2016; Davey and Wootton, 2017). Through its leading and participating in EU-funded projects and networks, the Solution Centre has been able to explore different approaches to CP-UDP across Europe (Davey and Wootton, 2008; Davey & Jongejan, 2002; COST Action TU1203; Town et al, 2003; Stummvoll, 2004).

4 Implementation & operation of CP-UDP in Europe

Drawing on CPTED principles, Designing Out Crime has been applied extensively across the UK. Environmental crime prevention principles are embedded into urban design accreditation schemes in a number of European countries, and also integrated into urban planning processes in some parts of Europe. These are discussed in the following sections.

4.1 Secured by Design in the United Kingdom

In 1989, the Association of Chief Police Officers (ACPO) established a crime prevention accreditation scheme named Secured by Design (see www.securedbydesign.com). Focusing on the design of homes and commercial buildings, the scheme promotes Crime Prevention Through Environmental Design (CPTED) principles, and the use of building products that conform to security standards. Secured by Design is delivered by police Architectural Liaison Officers in each police force area who identify crime risks relating to a development, provide design advice and review compliance of the final design with the standard.

The UK Secured by Design scheme remains voluntary and relies on developers choosing to apply for accreditation. It is up to the client to specify to the designer that their new or refurbished development should comply with the Secured by Design Standard. However, there are factors driving the uptake of accreditation. In the UK, local authorities are under pressure to consider crime and feelings of insecurity. This began at the end of the 1990s, with Section 17 of the 1998 Crime and Disorder Act (Great Britain, 1998). This states that:

> *"It is the duty of the authority to exercise its various functions with due regard to the likely effect of the exercise on crime and disorder in its area, and the need to do all that it reasonably can to prevent crime and disorder in its area."*
>
> 1998 Crime and Disorder Act (Great Britain, 1998)

While the wording is relatively vague, the result was that local authorities and providers of public services were all made aware of their responsibility to prevent crime and disorder. Following on from the Act, measures were taken to support consideration of crime and insecurity through multi-agency collaboration. Crime and Disorder Reduction Partnerships (CDRP) were established. These brought together police, local authorities (including planners and city managers), fire services, health authorities, public transport services, registered social landlords (such as housing associations), the voluntary sector, businesses and local residents. Through the Partnerships, different stakeholders worked together collaboratively to tackle problems of crime and anti-social behaviour within a specific

area like a neighbourhood, city or region. In 2010, Crime and Disorder Reduction Partnerships (CDRPs) were renamed Community Safety Partnerships (Home Office, 2010).

Over the same period, police performance has come to be increasingly judged on public confidence. This has contributed to an increased focus on fear of crime and feelings of insecurity (Barker & Crawford, 2006–2009), which can be linked to concerns over low-level crime such as anti-social behaviour.

The focus on anti-social behaviour in the UK was supported by the 1998 legislation (The 1998 Crime and Disorder Act, Great Britain). Anti-social Behaviour Orders (ASBOs) were introduced to prohibit certain acts or access to certain places and are issued against individuals identified as causing alarm or distress to others. Anti-social behaviour covers a whole range of acts — from substance misuse to kerb crawling, excess noise, drinking on the street and behaviour that is rowdy and inconsiderate (UK Home Office, 2004). Under the Anti-Social Behaviour, Crime and Policing Act 2014, ASBOs were superseded by the 'Injunction' and the 'Criminal Behaviour Order'.

Local authorities are expected to consider the prevention of crime and disorder as an objective in the planning process. In general, crime prevention is considered when awarding 'planning permission' (i.e. as part of development control). Developments judged vulnerable to crime may be required to implement design changes or be denied planning permission. In 2004, the Office of the Deputy Prime Minister (ODPM) published the guide 'Safer Places: The Planning System and Crime Prevention'. This document outlined clear policy statements that placed "…crime prevention at the heart of the planning process" (p. 45). Safer Places drew attention to the importance of designing out crime and designing in community safety.

There is scientific evidence that Secured by Design accreditation reduces crime, anti-social behaviour and fear of crime (Armitage, 2000; Pascoe, 1999). Properties built to the Secured by Design standard experience lower levels of crime, and their residents' lower levels of fear of crime, than properties that do not meet the standard (Armitage, 2000, 2004). A study of two estates in West Yorkshire which had been refurbished to meet the Secured by Design standard found reductions in crime of 55 per cent (Armitage, 2004, p. 215). In relation to new build, the number of crime incidents per total number of properties (the incidence rate) for burglary and for total crime were lower for dwellings designed to the standard. For the sample of properties that did not meet the standard, the study found that the total crime rate was 34 per cent higher and the burglary rate 71 per cent higher (Armitage, 2004, p. 216).

In the UK, the police have historically played a key role in providing advice on crime prevention to both planners and designers. Advice on crime prevention in urban design and planning has been delivered by police Architectural Liaison Officers (ALOs). Indeed, all 43 police forces in England and Wales have traditionally employed ALOs to provide design-led crime prevention advice.

'The ALO is a specialist in security and crime risk management who will prepare a site specific risk analysis and recommend appropriate measures to design out crime'

SBD website: www.securedbydesign.com

However, the ALO role is usually delivered by a police officer as just one of a number of police duties. This can cause workload problems for ALOs. At the outset, Architectural Liaison Officers offered advice on large schemes, and were mainly advising local planning authorities. It is probably fair to say that it was not a very 'sophisticated' service, and that planners were not very responsive. In the mid-1990s, new regulations, in the form of the 5/94 Government Planning Circular, resulted in crime becoming a 'material' planning consideration. This meant that crime must be taken into account when deciding whether to award planning permission to a development. As a result of this, designs for new developments began to include features and strategies to 'design out crime' (Wootton et al, 2009; Davey and Wootton, 2017).

In 2008, the Design Against Crime Solution Centre at the University of Salford conducted a survey of ALOs in all 43 police forces in England and Wales, which received a 78 per cent response rate. In terms of the amount of time allocated to the ALO role, the survey showed that only 14 percent of ALOs were dedicated solely to ALO duties, and that 86 percent of were utilised for other, non-ALO duties. Furthermore, the amount of time dedicated to ALO activity was often relatively small, with 60 percent of ALOs spending less than half their time on ALO activities. The survey also examined the issue of early stage consultation on designs, asking for the approximate percentage of planning applications the ALO was consulted on before the planning application was submitted. The majority of ALOs (64 per cent) stated that they were rarely consulted at an early stage, and that early consultation took place in less than 10 percent of cases. The survey clearly demonstrated that the ALO was not fulfilling the role of a consultant to the design process but was more often simply commenting on finished designs. As a result, any requests for amendments would likely be strongly resisted due to the cost of implementing design changes at such a late stage (Wootton et al, 2009).

The 2008 survey also revealed that not all police forces in England and Wales were taking the same approach to delivering the ALO function. One of the main departures from the norm was the service developed by Greater Manchester Police (GMP). The roots of this difference dated back to the establishment of the ALO service in GMP in the early 1990s.

4.2 GMP's Design for Security service in Greater Manchester

In 1991, GMP appointed an architect as its first Architectural Liaison Officer. The reasons behind the decision to appoint an architect rather than a serving police officer — the practice in other police forces — are unfortunately lost in the mists of time, but this soon became the accepted force strategy. As the ALO service at GMP expanded, the practice of appointing to ALO roles candidates from the development industry (architects, surveyors, planners, etc.) continued. This strategy was to become the foundation for the development of an ALO service that is unique in the UK.

By the late 1990s, GMP had an established Architectural Liaison Unit (ALU) staffed by an architect and two surveyors. By the mid-2000s (2004 to 2005), four ALOs were in post — all with a professional background in the development industry. By this stage, the GMP ALOs were annually reviewing over 2,000 applications at the planning committee phase from across the ten local authorities in the Greater Manchester metropolitan area (Davey and Wootton, 2017).

In 2005, Manchester City Council, the biggest local authority in Greater Manchester — and so the source of most ALO work — implemented a local planning condition for Secured by Design. This stipulated that all plans should meet the standard of the UK accreditation scheme. This action revealed a gap in GMP's ability to deliver on the Secured by Design condition, as it resulted in a large increase in workload for the Architectural Liaison Unit. At the same time, GMP did not have the resources to increase the number of ALOs in the Unit. At this point, there was a "coming together of minds" between: (i) the Assistant Chief Constable of GMP, (ii) the Head of Architectural Liaison Unit at GMP; and (iii) the Head of Planning at Manchester City Council. A new vision for the Architectural Liaison Unit was articulated:

> *"To establish an innovative Architectural Liaison Unit that increases the use and effectiveness of design-led crime prevention across Greater Manchester and becomes a focus for innovation and best practice in the Northwest."*
>
> Mike Hodge, Greater Manchester Police, 2009

As well as there being more work than the current Architectural Liaison Unit could reasonably deliver, there was also a realisation of the need to:

- Influence designers much earlier in the design process
- Formally integrate CPTED advice within the planning process
- Generate funding to employ additional staff to cope with growing demands on the service

This resulted in the innovation of the Crime Impact Statement (CIS). The CIS fitted with the 'Impact Statement' model common for considering issues in the building development industry (such as the 'Environmental Impact Statement' and 'Traffic Impact Statement'). The CIS was designed to enable crime prevention to be considered at a much earlier stage in a development project. Furthermore, by saving the developer money, delivery of the CIS would become something for which the developer would pay a consultation fee. This income could then support the extra staffing required by GMP to deliver a more professional Architectural Liaison service (Davey and Wootton, 2017).

So how does the CIS work? In simple terms, the design process for the development of a building can be conceptualised as comprising three stages (i) briefing; (ii) conceptual design; and (iii) detailed design. These three stages may take anything from six months to several years to be completed, but generally the design process is finished prior to the application for final planning permission being submitted. If this planning application is granted approval, construction can begin. Unfortunately, the majority of UK police ALOs do not get to review design proposals until a development reaches the

planning application stage. In theory, ALOs should be invited by the local planning authority to comment on behalf of the police. However, this practice is far from universal. For example, while one local authority might specify that the police ALO review plans for projects it considers to be 'major developments', another may not involve an ALO at all (Davey and Wootton, 2017).

At this late stage in the process, however, any design recommendations made by an ALO will likely cause significant extra costs to the developer. These may stem from the cost of changing previously completed design proposals, the cost of delaying the construction phase, or both. Consequently, an ALO process resulting in requests for 'late changes' is both unlikely to be well received by designers and developers, and unlikely to be able to make significant design changes. This is a critical barrier to effective design-led crime prevention.

The goal for GMP was to integrate with the design process at an earlier stage in the development, at a point where practical crime prevention advice could be effectively integrated into the design. To enable this, GMP worked with the Design Against Crime Solution Centre at the University of Salford to develop a new service model that met the needs of developers, architects and planners—their potential clients (Davey and Wootton, 2017).

A service design project was undertaken by the Solution Centre that resulted in an improved means of engagement with the design development process. One finding from research undertaken on the project was that while the police used the word 'crime', planners, developers and architects tended to talk about 'security'. This insight ultimately led to the rebranding of the rather militaristic-sounding Architectural Liaison Unit as the 'Design for Security' consultancy, and the development of communication materials that eschewed police stereotypes to project a more professional, design-oriented image (see www.designforsecurity.org). The ALO role was redesigned as a 'Design for Security Consultant', thereby aligning with the language used in development projects (Davey and Wootton, 2017).

GMP Design for Security consultants are able more often to engage with developments at the concept design stage through the mechanism of the Crime Impact Statement (CIS). Such early involvement lessens the risk of unexpected delays at planning approval stage due to objections by the police. Consequently, Design for Security have been able to develop the CIS into an income generating service, whereby developers commission the CIS. Developers pay for a timely and professional advice service, benefiting from fewer 'last-minute surprises' and costly planning delays, while GMP reinvests the income in expanding the service to meet increased workload. Experience delivering the CIS to date has shown that once the requirement to consider crime and security is understood, most architects will rise to the challenge.

The need for developments to submit a CIS with their planning application was embedded within the local planning requirements. Initially only in the Manchester City Council area, but then widening out to all 10 local authorities in Greater Manchester, the CIS was included in the 'Validation checklist' of documents needed to be submitted as part of an application for planning permission. The CIS document merely acts as the physical endpoint to a process of consultation that takes place with the

designers through the development process. The Design for Security Consultant provides a critique of design proposals from a security, crime and fear of crime perspective, and acts as a 'critical friend' to the design team. As well enabling a much more professional, customer-focused 'consultancy' approach to police crime prevention, the CIS has funded the expansion of the service, improved training and has increased crime prevention research and evaluation opportunities (Davey and Wootton, 2017).

Similar crime prevention services that check development designs when they are submitted for planning approval exist in a number of cities (e.g. Vienna) and countries (e.g. France — discussed in section 4.4; and the Netherlands – discussed in the next section).

4.3 The accreditation scheme in the Netherlands

The Police Label Safe and Secure Housing (Politie Keurmerk Veilig Wonen®[6]) is a Dutch crime prevention instrument aiming to reduce crime and fear of crime through environmental design, architectural measures and target hardening[7]. The Dutch police label is awarded to new as well as existing dwellings, estates and neighbourhoods that are fully built in line with the guidelines for Safe and Secure Housing. The label stands for a safe and secure house in a safe and secure neighbourhood.

Several studies have demonstrated that application of the label reduces the risk of residential burglary by 80 per cent – 90 per cent on the level of the individual household. Application of the label clearly also has a positive effect on the residents' feelings of safety, their satisfaction with the safety situation in their neighbourhood and their crime preventive awareness and behaviour (Lopez et al, 2010).

To compile the requirements for the label about 40 patterns of design elements that could have possible crime preventative and fear reducing effects were derived from Alexander's pattern language (Alexander et al., 1977). Crime and the fear of crime are not isolated acts. Instead they can be seen as a consequence of a series of spatial patterns and the requirements/patterns summarised in the Police Label manuals—one for new and one for existing housing/neighbourhoods have been arranged for all levels of the process of building a new estate (from macro to micro) and all labels important for existing houses and neighbourhoods. Secure living is more than just living in a secure house. It includes being able to move in the neighbourhood, to arrive by car, by bicycle, on foot or by public transport. It also includes putting the bicycle away, parking the car, playing in the street, shopping, going to school, walking in the park, and so on.

[6] The Dutch word 'veilig' is somewhere in between the English words safe and secure. Compare the French Sûreté and securité. In translation the Dutch police label is sometimes called 'safe housing' and sometimes 'secure housing'. Just to be sure we use the wording 'safe and secure housing'. The requirements of the police label refer to crime, anti-social behaviour, incivilities but also to fire safety

[7] This tool has a separate website (in Dutch): https://www.politiekeurmerk.nl/

The approach followed in the manual could be compared to the view when making a parachute jump: in the beginning one has a wide view of the overall area, later on more details are revealed. In the manual, patterns are divided into categories: Urban Planning and Design, Public Areas, Layout, Buildings and Dwellings/houses (Jongejan and Woldendorp, 2013).

While assessing the macro and micro design of the proposed development, the (certified) Building Plan Advisors can use the manual as a safety device to guarantee that they consider safety and security at an early stage in the design process. Acting too late in the process, when it is only possible to check target hardening of the dwelling, makes it impossible to gather enough points to award the Label.

In January 2005, the Police Label Secure Housing scheme entered a new phase. The previous year, the Dutch Police Force and the Ministry of the Interior decided that the Police Label Secure Housing scheme was sufficiently developed for use by the local authorities. The new approach stated that local authorities must work with Building Plan Advisors throughout the design and management of housing and public space. The ownership of Police Label Secure Housing was transferred from the Ministry of Interior to the Dutch Centre of Crime Prevention and Safety (CCV).The CVV is responsible for the quality of the Police Label Secure Housing, and now manages the Label and the list of requirements for its two application areas—new estates and the existing houses (Jongejan & Woldendorp, 2013).

Developing quality, accessibility and standards for the creation a safe and secured environment is a challenge for the Dutch local authorities and the CCV. This is in part due to the potential fragmentation in approach (Jongejan and Woldendorp, 2013), as there are 355 municipalities in the Netherlands (January 2019) responsible for planning, building and developing new and existing housing (Jongejan & Woldendorp, 2013).

Nowadays about 10 percent of all houses in the Netherlands have a Label. The problem is that there is hardly any growth in that number and even a bigger problem is that every label has to be renewed after five years but this is hardly ever done[8]. It proves extremely difficult to contact (new) residents because the registration is dependent on the person/resident. An evaluation by DSP-groep recommends significantly changing the system and to start working with registration of houses (not the inhabitants)—such an approach is adopted in relation to sustainability approaches for houses (Nauta *et al*, 2018).

[8] Number of houses in The Netherlands: 7,787,732. Number of houses holding a label: 702,289. Of which holding an up-to-date label: 429,392. Of which the label is officially outdated: 272,897 (figures 2015; more recent data not available)

4.4 The French legislation system for urban planning

The emphasis on environmental crime prevention through design was taken forward in 1995, when the LOPS (Loi d'Orientation et de Programmation de la Sécurité) was enacted. In 1994, France started to participate in the CEN standardisation work (see below) and from 2004 France actually became the main advocate of the CEN work involving two French ministries (Intérieur and l'Équipement) (Benbouzid, 2011, chapter 5). The LOPS 1995 legislation made it compulsory for large construction projects to conduct an analysis of a proposed development's impact on crime: The ESSP (Etude Sécurité et Sûreté Publique (Corbillé, 2014). Funded by the Ministry of the Interior, the Institut des Hautes Études sur la sécurité Intèrieure (IHESI) was asked to provide a commercial service to deliver these security assessments. However, the institute was unable to meet the huge increase in demand. The requirement for developers to conduct a security assessment of crime and fear of crime resulted in consultancies being established to measure geographical distribution of crime, crime trends and fear of crime. In 2000, two large consultancies performed two thirds of the total number of crime and security assessments—termed DLS audits (Roché, 2002, pp. 227–8).

COST Action TU1203 found that in France (Corbillé, 2014), the French Ministry of Sustainable Development has published two brochures on urban safety:

- User Safety and Urban Design – This publication (in French) reviews the principles than can guide the integration of crime prevention in urban design.
- The contribution of safety reports to urban quality – These four case studies (in French) show how safety reports have been implemented since 2007 and what contributes to their efficiency. Collected by the "Club Ville Aménagement", the "Plan Urbanism Construction Architecture (PUCA)", the "Point d'appui national sûreté et sécurité urbaine" these case studies focus on several questions: What is the convenient moment to introduce safety reflections into the urban project? What are the minimum conditions for successful measures? How could local authorities, architects, urban planners and police work with the subject?

4.5 CP-UDP in Germany and the federal state of Lower Saxony

Crime prevention has been considered in German planning procedures for three decades. In the beginning of the 1990s, eight state prevention councils and about 2,000 municipal prevention bodies were founded in Germany. The municipal prevention councils support networking between the professional actors in the district, and facilitate knowledge and information transfer between science and practice at the local level (Herbert et al, 2019).

Since early 2000, planning regulations have required that development plans consider requirements for healthy living and working conditions, as well as the safety of the residential and working population. The regulations support preventive urban design that positively influences human behaviour and prevents negative events or behaviours. Particular attention is paid to sight lines,

natural surveillance, social control and resident engagement, as well as mixed use and avoidance of large-scale, monolithic buildings. In Germany, with its long tradition of "social policy", social prevention is prioritised. There are various programmes to engage and support at risk groups and a strong emphasis on multi-agency working with municipal authorities and housing management associations (Herbert et al, 2019)

In a progress report commission by the Schleswig-Holstein Ministry of Interior, the "Red Thread", it was found that preventive strategy seems to be to institutionalise cooperation between police and urban planning, as well as activate citizens' responsibility in preventive councils established across Germany.

Initiatives to implement CP-UDP in Germany are based primarily on the federal states and municipalities. Consequently, different approaches to crime prevention have been developed across the 16 federal states.

- Baden-Württemberg developed a checklist for urban crime prevention in 2000. The federal state implemented crime prevention into urban planning and housing crime prevention by for instance, establishing contact persons for urban crime prevention, supporting social city projects and developing training.
- In 2000, the State Office of Criminal Investigation in North Rhine-Westphalia drew up a manual "Urban Crime Prevention" for police inspections. In five cities, model projects for the cooperation of municipalities, housing companies and police are carried out in urban development projects. In 46 district police authorities, there were direct contacts for crime prevention.
- In Rhineland-Palatinate, the guideline "Urban Planning and Crime Prevention" was distributed to all municipalities. In 2005, the State Criminal Police Office organised a seminar to familiarise the police and crime inspectorates with the model of preventive urban design and to prepare them for cooperation with the housing industry and municipal departments for urban planning.
- In Hamburg, a working group was set up in 2006 to initiate the systematic involvement of the police in traffic and urban planning prevention. In 2005, cooperation between the planning authority, the housing industry and the police was initiated.
- In Schleswig-Holstein, two information events were held on urban planning and prevention in 2004 and 2005.

In Germany, considerable progress in CP-UDP has been made in the federal state of Lower Saxony. In 2002, Lower Saxony published guidelines "Safe living quarters – Good neighbourhood", which has become the basis of the model project "Safe living can be planned". The State Office of Criminal Investigation (LKA NI) developed a practice-oriented procedure for the consideration of crime prevention aspects in urban planning. The project was accompanied by a Steering Group comprising the relevant state ministries, academics and representatives of the housing industry, the police and

the participating municipalities. The implementation took place from 2004 to 2006 in selected construction and planning projects related to three cities in Lower Saxony (Herbert et al, 2019).

In 2005, a "Security Partnership in Urban Planning in Lower Saxony" (Sicherheitspartnerschaft im Städtebau in Niedersachsen, SIPA) was signed between the ministries involved, the police authorities, the state prevention council, relevant professional associations and planning associations, and research and education institutions (Schubert and Schnittger, 2005). As part of this, a quality audit scheme for secure living (QSN) has been established (SIPA, accessed 30.4.19). The implementation of crime prevention through urban design and planning approaches is being promoted by the German police organisation in Lower Saxony—Landeskriminalamt (LKA) Niedersachsen. The LKA in Lower Saxony employs staff with a background in the development industry, rather than relying solely on police expertise. The wider application of the approach is being supported by research projects, including Planning Urban Security (PLuS, 2008), Transit (2014) (www.transit-online.org) and DiverCity (2018).

In particular German federal states, significant progress has been made regarding CP-UDP due in part to the actions of key stakeholders, including LEAs. The LKA in Lower Saxony has benefited from collaboration with organisations across Europe and from participation in EU-funded projects. The federal state structure makes it more difficult to roll out regional programmes and Germany has not been involved in the development of the European Standard.

4.6 New accreditation scheme in Estonia

Estonia became interested in CPTED around the year 2000 and participated in the CEN standardisation approach (see section 4.7, below). The draft of the European pre-standard CEN/ENV 14383-2:2003 was translated into Estonian, but the approach never really took off because a key individual, an important advocate of a multi-agency public private partnership approach from the private security industry, sadly suddenly died. A few years later these ideas were elaborated upon in the form of multi-disciplinary training funded by the EU (ISEC9) in which the police and border guard participated but also NGOs, local authorities, the national neighbourhood watch umbrella organisation and others.

The training resulted in a manual: “CPTED manual: Crime prevention through urban design”. The manual was meant to help a wider audience of users of community police officers, local authorities and city design officials. The basis intervention strategy was formulated as:

[9] *Süütegude ennetusmeetodite arendamine ning uute kasutuselevõtt läbi turvalise elukeskkonna, sh teede ja tänavate kujundamise ja planeerimise.* In English: Development of existing urban design, planning and crime prevention methods and introduction of new ones to improve living environment safety. The acronym was simply: CPTED. This training received positive feedback and was awarded EU funding in 2013

"Rather than the police officers or local authority officials detecting some aspects that could possibly lead to a criminal act, cooperation is required, and possible threats need to be eliminated."

After the first training and the resulting manual was published, more training sessions were delivered to the police officers and local municipalities officials to improve their knowledge and cooperation in relation to urban design[10].

Following the first training Estonia also started to work on a scheme resembling the UK Secured by Design scheme and the Dutch Police Label. Thus far only a few houses have been officially labelled.

4.7 The European CEN standard and CEN documents

The European Committee for Standardisation (CEN) is an association that brings together the National Standardisation Bodies of 34 European countries[11]. CEN is responsible for developing and defining voluntary standards at European level and provides a platform for the development of European Standards (EN's) and other technical documents in relation to various kinds of products, materials, services and processes. European Standards (ENs) and CEN reference documents are based on a consensus, which reflects the economic and social interests of 34 CEN Member countries channelled through their National Standardisation Organisations. Most standards are initiated by industry. Other standardisation projects can come from consumers, small and medium-sized enterprises (SMEs) or their associations, or even European legislators. Besides European Standards, CEN produces other reference documents, which can be developed quickly and easily: Technical Specifications (TS), Technical Reports (TR) and Workshop Agreements (WA).

Following a Danish initiative in 1994 work started to draft a European pre-standard (ENV) on 'The Prevention of Crime through Urban Planning and Design' (CP-UDP)[12]. Reaching consensus in Europe is

[10] Sources: Master thesis (Kuritegevuse ennetamine keskkonna planeerimise kaudu: protsessi kasutusvõimalused avalikus ruumis Tallinna näitel) https://www.kriminaalpoliitika.ee/sites/krimipoliitika/files/elfinder/dokumendid/katrin_lipp_kuritegevuse_ennetamine_planeerimise_kaudu.pdf

Crime prevention through environmental design: the use of process in public spaces, example of Tallinn (not official translation to Estonian version)

[11] CEN's National Members are the National Standardization Bodies (NSBs) of the 27 European Union countries, the UK, the Former Yugoslav Republic of North Macedonia, Serbia and Turkey plus three countries of the European Free Trade Association (Iceland, Norway and Switzerland). There is one member per country. See https://www.cencenelec.eu/

[12] More information on this standard – The only Crime prevention Standard in Europe since the Roman Empire – is available in Grönlund et al 2014. See also (in French) Benbouzid, 2011, chapter 5

an extremely slow process but in 2003 such a pre-standard was accepted with a formal vote of all CEN members. The 'name' of this European pre-standard was CEN/ENV 14383–2:2003 (see here).

The idea of an ENV (a pre-EN) was that, after a few years of testing, this ENV could either become an EN or a technical document which is a kind of guideline still following the process of finding consensus with all national stakeholders (van Soomeren, 2007). Since the 'testing years' showed that not only the content of the CP-UDP approaches taken in Europe were different, but also the processes in urban planning and crime prevention were different, the decision was taken to slightly re-edit the existing text and publish it (in 2007) as a Technical Report (TR): CEN/TR 14383-2:2007.

In this version a 'Preliminary declaration' was added stating the importance of inclusion, diversity and freedom and opposing exclusion, discrimination and inaccessible public spaces:

> *"We should contribute to an interdependent urban development and not generate privilege yet isolated areas, which by way of consequence could become exclusion area. The buildings should be integrated in the city and urban fabric. We should ban any approach that take into account the security of property and not of persons, because this approach tends to generate security to the profit of groups and not of the population as a whole. Indeed, solutions based on the development of safer areas within and opposed to the outer world perceived as a source of insecurity will lead to exclusion and enclosure. Social life, respect for public freedom, exchange and friendliness are not taken into account. These solutions most of the time involve discrimination through money and through investment and operation costs that are not accessible to everybody."*
>
> Technical Report (TR): CEN/TR 14383-2:2007, page 5.

Of course, the inclusion of this disclaimer in the TR cannot control how CPTED or CP-UDP is adopted or implemented in different contexts.

This CEN technical document on the "Prevention of crime through Urban planning and building design" (CP-UDP) is one in a series (the 14383 series) which also comprises documents on Definitions of specific terms (EN 14383-1:2006), Dwellings (TS 14383-3:2005), Shops and Offices (TS 14383-4:2006), Petrol Stations (TR 14383-5:2010), Facilities for Public Transport (TR 14383-7:2009) and a document on ram-raiding (Protection of buildings and sites against criminal attacks with vehicles, TR 14383-8:2009). Work on schools and medical facilities is still in progress.

An implementation handbook — *Safepolis* (2008) — was also created, to make working with the TR 14383-2 document easier. The manual can be downloaded in four languages (English, French, Italian and Spanish) from http://costtu1203.eu/downloads/other-documents/.

The Technical Document 14383-2 and manual proved to be a sound basis for local authorities, politicians, groups of residents and business organisations looking to ensure that towns and cities are safe and secure. Key stakeholders (including planners, architects, police officers, residents' associations and teachers) could follow this CEN/TR 14383-2 as a guideline. The CEN standards are

readily available from every national standardisation institute and can be bought online. However, it appears that cost (more than 400 euros for the whole series) may be a barrier to usage. The CEN standards are also not widely promoted (Grönlund *et al*, 2014)

Furthermore, it appears that stakeholders responsible for the design, planning and management of the urban environment prefer to adopt an approach specific to their city, regional or national context. The concept of a standardised approach applicable to all countries in Europe has not been embraced. However, the opportunity to draw on theories and practices from other countries is clearly welcomed.

Since 2018, the Czech standardisation institute UNMZ started working on an update of some of the documents in the CEN 14383 series. A process that took a few years and that is still not finished. In 2022 a new version of TR 14383-2 will be published as CEN TS 14383-2:2022. This new European standard on CP-UDP/CPTED combines the Risk management approach from the ISO 31000:2018 standard with the existing CEN 14383-2:2007. It should be combined with the CEN standard EN 14383-1 containing all terminology and definitions. A standard that is also in the process of re-editing and re-issuing. Both documents will supersede the older documents.

From CEN to ISO: a worldwide standard on CPTED

In January 2021, the International Organization for Standardization (ISO) published a worldwide standard on CPTED: ISO 22341:2021. ISO is a worldwide federation of national standards bodies (ISO member bodies). The ISO standard on CPTED is a useful tool when looking for common ground to ask and answer questions such as 'What is CPTED?', 'Which principles and elements can be distinguished and which approaches, strategies and processes are available?'. While the ISO standard is not legally binding, it promotes best practice and voluntary compliance that can benefit all the parties involved.

ISO 22341 was developed by ISO technical committee ISO/TC 292, Security and resilience, whose secretariat is held by SIS, the ISO member for Sweden. It is available from every national standardisation institute in the world (ISO member) or the ISO Store. Although the new European standard CEN TS 14383-2:2022 has been designed for European countries and cities, the ISO standard is a very useful document for all countries as it may help the significantly disparate implementation of CP-UDP worldwide.

4.8 COST Action TU1203 Crime Prevention Through Urban Design & Planning

CP-UDP, mainly in the form of CPTED principles, has been promoted worldwide since the 1970s, resulting a large collection of books, articles and guidelines.

- A bibliography from 1975 to 2010 by Sean E. Michael (Utah State University), Gregory Saville (Alter Nation Consulting and founder of the International CPTED Association) and Joel W.

Warren (Utah State University) comprises around 1,000 sources. A further bibliography was published by Michael (2005).

- There are websites available with sources containing CP-UDP and CPTED, including: www.e-doca.eu, www.costtu1203.eu, www.cpted.net, https://popcenter.asu.edu/pop-guides.

In the framework of a European COST Action (Cooperation in Science and Technology; www.costtu1203.eu) a set of national bibliographies has been compiled for 22 European countries and a ranked international bibliography with input from 20 countries. The national bibliographies reveal a richer picture of CP-UDP in Europe than was apparent to Action members previously. The research conducted with experts across Europe revealed that 19 European countries have either CP-UDP guidelines or policy documents—or both. In the majority of cases, these documents refer to CPTED. Analysis of the biographies suggests that CP-UDP, in the form of CPTED, started in the UK in the 1970s, reaching the Southern and Eastern parts of Europe around 2000 or later (COST 2014)

The international bibliography shows that the members of the Action share a certain amount of knowledge in common. For example, publications by Newman, Crowe, Jacobs, Jeffery, Kitchen, Colquhoun, Kelling and others. At least 38 publications can be considered to be 'common knowledge' to some degree. (COST, 2014)

The role of LEAs in CP-UDP varies across different European contexts. In some countries, such as the UK, LEAs lead on CP-UDP. In the Netherlands, LEAs were leading, but responsibility has shifted to the local authorities. In some contexts (e.g. Vienna in Austria), LEAs play only a minor role in CP-UDP.

5 Interviews with leaders in the field of CP-UDP

As a result of all this knowledge, it has become much clearer regarding 'what' needs to be done. The question of 'how' remains open. In particular, how will we be able to implement — in partnership — an effective CP-UDP approach in a particular country, region, city or neighbourhood.

The questionnaire and interview findings conducted for CCI suggested that there is no universal source of information for many countries, resulting in the information on CP-UDP being distributed amongst multiple agencies. Note that these interviews were conducted prior to the introduction of the worldwide ISO standard 22341 on CPTED in 2021 (see chapter 4 above).

Implementation of CP-UDP varies significantly internationally. Regarding the involvement of LEAs in design and planning procedures, and consideration of CPTED principles, CCI found that:

- Respondents from the US reported little or no requirement from LEAs to comply with CPTED principles, except in some zoning plans. It was suggested that officials are not interested in CPTED integration within design and planning procedures.
- Honduras and Mexico integrate CPTED into their design and planning procedures. These countries also support the implementation of CPTED guidelines through training courses and workshops for planners, architects and other professionals. Such courses are delivered by LEAs or local authorities.
- Developments in Latin America (Mexico, Honduras, Chili) are interesting because they focus on street violence, participation of residents (including an important role for children/schools) and the 'normal urban design features' which are still kind of special in some of these countries: lighting pedestrian routes, design buildings/houses with windows facing the streets/public space, paving roads and the pedestrian zones, etc.

In terms of CP-UDP, LEAs are expected to provide input to professionals regarding crime and delinquency in a given area through crime analyses or hot spot analyses, etc. LEAs inform themselves and others about crime risk and other problems using police data, official statistics from the central statistics bureau and planning offices and scientific research. However, it seems that LEAs are not fully integrated into design, planning and management procedures in many countries. LEAs are either not contributing to the design and planning process, or their role is restricted to giving CPTED training courses and developing guidelines.

In the UK, Netherlands and Germany, LEAs have played an important role in CP-UDP. However, there have been changes to their role. In the Netherlands, responsibility for the Police Label shifted from

LEAs to local authorities. LEAs still provide design, planning and urban management professionals with information and guidelines through training courses, workshops and even online information and education sources. But they are not providing information about crime risk specific to a development. As a result, information from police hotspot analysis, predictive policing tools or victimisation studies are not informing the practice of designers, architects and planners. We know nowadays that crime is not evenly distributed. Crime concentrates at specific places and times (hot spots/places and hot times), but also among offenders and victims (Weisburd et al. 2012; Weisburd, 2015; Lee, YongJei et al. 2017; Martinez et al., 2017; Soo Hyun et al., 2017). This knowledge on the 'where', 'when' and 'who' of crime incident clustering / concentration, is crime science expertise that is mainly concentrated and stored within the systems of LEAs, criminologists and crime experts. The connections between these variables may be tacit knowledge of crime experts, however it is not knowledge widely knowns outside these groups — and also not embedded within the practice of designers, architects and planners. For effective evidence-based CP-UDP there is a need for effective collaboration between crime experts, urban designers and planners.

6 The success of design and security approaches

The benefits of design and security approaches across Europe—and indeed worldwide—are increasingly recognised as the evidence-base grows. Evidence from victimisation surveys challenges the view that offending behaviour is 'caused' solely by poverty and deprivation, and therefore declines as a society becomes wealthier. According to the award-winning criminologist Jan J.M. van Dijk (Stockholm Prize in Criminology 2012; see his lecture "Closing the doors"), wealth has been one of the main drivers for the crime epidemic that plagued most Western countries up until the mid-1990s. This is because wealth often generates more opportunities to steal goods such as telephones, laptops, cars and credit cards.

The international decrease in crime — the 'crime drop' — can be observed for property crimes as well as crimes of violence, such as sexual offences. This drop-in crime is evident in statistical information from separate national victim surveys, the International Crime Victims Survey, and registered crime trends from the police. The period in which crime drops varies across different countries. It started in the United States and Canada in the 1990s. A large number of Western countries then followed approximately five years later. The level at which crime has decreased in various countries shows great similarities. During a period of 20 years or more, the total level of crime in many countries decreased on average by 30 to 50 percent. The variety in the number of sources and the large number of countries where crime has decreased means that the chance is extremely small that this is a coincidence. Also, in relation to crime reported to the police, the picture in many EU countries shows a decrease in reported property crimes, as well as a decrease in the number of violent crimes (van Dijk et al, 2007; 2012).

What explains this almost universal drop in crime? In the literature several explanations can be found, but probably the most complete summary of the hypotheses available at the present time concerning the explanation for the crime drop can be found in a meta-evaluation by Graham Farrell, Nick Tilley and Andromachi Tseloni. The authors test seventeen hypotheses, including demographics, policing, imprisonment, drug markets, and lead poisoning. It appears that one 'solid' unequivocal explanation for the decreasing trend in crime cannot be given, but the 'security hypothesis' appears to be the most promising explanation.

> *"...There is strong evidence that vehicle theft fell because of more and better security, and mounting evidence that improved security was critical in reducing burglary and other acquisitive crime. Many crime types are interrelated, while most criminal careers are dominated by property crime, so removing these volume crimes might be expected to reduce violence"*
>
> Abstract, Farrell *et al*, 2014.

Many of the measures are applied on a large scale, which means that the scope is often very great indeed. That applies particularly in the case of car theft (the obligatory inbuilt immobilisers following EU regulations) and also in the case of house break-ins (certification, secured by design accreditation and/or building codes). There has also been a significant decrease in shoplifting from department stores and retailers (due to CCTV, no cash, anti-theft strips, private security, sensors, alarms, dummy packaging).

Indeed, the EU came to the same conclusion in 2001 when the Justice and Home Affairs Council of the European Union (meeting 15-03-2001) reached a political agreement on the conclusion of the EU experts' Conference 'Towards a knowledge- based strategy to prevent crime' (Sundsvall, Sweden, 2001):

> *"Crime Prevention through Environmental Design, or Designing out Crime (CPTED/DOC), has proven to be a useful, effective, very concrete and feasible strategy to prevent crime and feelings of insecurity, integrated in a multidisciplinary approach. Best practices regarding CPTED/DOC should be collected, evaluated and made accessible for stakeholders. This process should utilise a common framework of concepts and processes, and transferable principles should be identified."*

On the basis of what has been stated above, Jaap de Waard (former director EUCPN and nowadays working with the Dutch ministry of Justice and Security), member of the CCI advisory board, concludes:

- There is a general increase, both nationally and internationally, in the willingness for prevention, the quality and financial investment in crime prevention by the public at large, governments, the business community and manufacturers
- The security hypothesis is principally applicable to the explanation for the reduction in property crimes (in particular car thefts, shoplifting and house break-ins). Situational crime prevention measures and CPTED have proven successful. In a large number of countries, the application of these types of measure has led to a significant decrease in crime. Relocation/displacement of crime occurs much less frequently than is often supposed. The reverse effect is also apparent, whereby the scope of the measures is estimated to be much greater by offenders and potential offenders.

De Waard also suggests that further research into and consideration of how young people get initiated into crime would be useful:

> *"The so-called 'debut crime hypothesis' — the assumption that it is becoming increasingly difficult for juveniles to commit a preliminary crime due to measures limiting opportunity — deserves further investigation."*

Van Dijk explains the crime drop in the following simple sequence: in response to the increased risk, fear of crime increases, citizens and businesses start to protect themselves better and government invests more in crime prevention. This leads to a decrease in crime and as mentioned above this 'crime drop' is happening now in most industrialised countries (van Dijk, 2012). However, crime patterns vary over time, victim target groups change, offenders alter their behaviour and new modus operandi are invented (for instance, new crimes appear in the digital world). The danger is that new opportunities for crime emerge, which if not addressed, give rise to new crime waves and feelings of insecurity. If this crime 'rise and fall' is to be addressed, it would be of the utmost importance to create a sustainable European crime prevention policy and to develop structures to support its implementation across Europe.

7 Lessons Learned

In their 1997 book, *Realistic Evaluation*, Ray Pawson and Nick Tilley state that realist evaluation seeks to answer the question 'What works for whom, in what circumstances and why?'.

In answering this question, the authors introduce the 'Context-Mechanism-Outcome' (CMO) configuration as the main structure for realist analysis: *"context + mechanism = outcome"* (Pawson & Tilley, 1997, p. XV). While the analytic process is not necessarily sequential, it should result in a set of 'context-mechanism-outcome' (CMO) statements:

> *"In this context, that particular mechanism fired for these actors, generating those outcomes. In that context, this other mechanism fired, generating these different outcomes."*
>
> Pawson & Tilley, 1997, p. XV

Structuring the discussion and analysis of the state of the art and lessons learned using this CMO scheme, the following lessons emerge from this review of Crime Prevention through Urban Design and Planning (CP-UDP).

7.1 Mechanisms

Turning first to the mechanisms used in CP-UDP, we have seen overwhelming evidence in this review that crime — as well as feelings of insecurity — is prevented or tackled (the O of Outcome) in specific contexts. In short, CP-UDP works.

There are, however, a few important prerequisites to this outcome, as we have seen. Three principles would appear prerequisite for success :

- CP-UDP should be crime specific. Violent crimes often differ in root causes and approaches from property crimes — for example, burglary is different to robbery.
- CP-UDP should be focused. Crime incidents are not evenly distributed but form clusters and are concentrated in specific localities. There are specific places (hot spots), days of the week and times of the day (hot times). In addition, a small percentage of offenders is responsible for a substantial amount of all crime: so-called 'repeat' or 'prolific offenders'. The same follows for victims — specific types (demographic; socio-economic status; residential location) of victims carry a disproportional burden of crime. For example, a burgled dwelling has a higher chance of becoming a repeat victim of burglary.
- Any approach should be ethically sound. The European CEN standard on CP-UDP identifies inclusion, diversity and freedom as essential, stating that urban planning and design must prevent exclusion, discrimination and inaccessible public spaces (Cozens and Love, 2017).

In summary, Crime Prevention through Urban Design and Planning must be crime-specific, focused and ethical in approach.

There is another important prerequisite and that brings us to the Context: Implementation. Any approach only works when it is effectively implemented.

7.2 Context

This review of CP-UDP has shown that context is vital but can be completely different. It might be:

- A European context — see EU regulations to reduce car crime (7.1) and the CEN Standards (4.7).
- A national context — like the Dutch building code regulations; the French ESSP-laws; and national crime prevention labels (e.g. *Secured by Design* in the UK and *Politie Keurmerk Veilig Wonen®* in The Netherlands).
- A specific local or regional context — see, for example, the Manchester, UK, *Crime Impact Statement* (CIS) and the German approaches mentioned in section 4.5.

In different contexts, the organisation and governance of CP-UDP necessarily differs, impacting the CP-UDP action that can be taken.

We have learned that the effective delivery of CP-UDP requires partnership or multi-agency working in which often — but not always — the LEAs participate alongside local authorities, municipalities and other stakeholders. The police – as crime experts – play a vital role in this partnership because they can input knowledge on offender *modus operandi* (MO), crime hot spot and hot time data and victimisation information. In addition to this strategic intelligence, the police can, of course, employ reactive (repressive / punitive) law enforcement. However, the role of LEAs in CP-UDP as crime experts is vital. LEAs have context-specific knowledge on crime, while designers and planners have the capability to use that knowledge to inform their urban designs. CP-UDP requires the action-oriented combination of crime expertise with design and planning expertise.

We have learned that CP-UDP should involve a combination of a physical/technical and social/human measures. Too often CP-UDP is seen as a simple physical/technical security approach: locks; fences; barriers — what in the USA is referred to as 1st generation CPTED. CP-UDP is by definition an approach that routinely takes into account social aspects of the context, and every CP-UDP approach can be considered socio-technical — what in USA is referred to as 2nd generation CPTED. The precise combination of the social and the technical may differ, however. In some circumstances, there may be more focus on social issues and the social environment, in others more on technical issues and the physical environment.

Thus, we can see that the context of CP-UDP (the mechanism) influences the approach adopted:

- The scale level of action — EU; national; regional/local,

- The agencies and stakeholders involved — number; type of partners; capabilities
- The mix of social / human-centred and technical / physical considerations.

In short, the implementation of every CP-UDP mechanism is heavily influenced by these context variables. Context is everything (Bate, 2014).

7.3 Outcome

Last but not least, the final goal Pawson and Tilley mention is Outcome. In business, outcome is defined as that which the business wishes or needs (for its commercial survival) to achieve. The word 'outcome' is often confused with 'output', this being the actions, activities, investments that contribute to achieving an outcome. To clarify, 'outcomes' are the result, and 'outputs' are the activities that support the desired results. For an LEA, the outcome might be defined as *"a safer community"* or, more concretely, *"X% less High Impact Crimes (like A, B and C) in the following year + lower citizen feelings of insecurity"*.

However, this outcome must be achieved within specific constraints — for example, not violating human rights, respecting democratic values, etc. For example:

> *"Europe must consolidate a security model, based on the principles and values of the Union: respect for human rights and fundamental freedoms, the rule of law, democracy, dialogue, tolerance, transparency and solidarity."*
>
> EU, 2010 p. 10.

Crime Prevention through Urban Design and Planning (CP-UDP) can have positive and rewarding outcomes (i.e. it works). However, this will only be the case if CP-UDP approaches — the mechanisms — are crime specific, appropriately focused (i.e. on hot spots / places; hot times; hot (prolific) offenders; and hot (targeted) victims) and ethically sound.

8 Conclusions and discussion

The benefits of CP-UDP across Europe—and indeed worldwide—are increasingly recognised as the evidence-base grows. CP-UDP combines a number of different approaches, and its implementation differs significantly across different countries.

8.1 Implementation: Local, national and European approaches

Many national agencies and practitioners continue to support the development of CEN standards and to benefit from sharing practice with colleagues in other EU countries. Participation in CEN standards may also support practitioners looking to introduce CP-UDP in their own region or country.

It is also evident that changes to regulation at an EU level can help prevent crime in relation to products, services and environments. A study into the impact of regulation observes that the automotive industry has reduced thefts of vehicles in part through compliance with European rules and regulations. Since EU regulation in 1998, the incorporation of immobilisers into vehicles has significantly reduced theft of cars.

> *"Regulation made application of the electronic engine immobiliser mandatory for all new cars sold within the European Union. The device reduced car theft by an estimated 40%, accounting for both the protective effect on cars with the device and the displacement effect on cars without the device."*
>
> van Ours and Vollaard, 2014.

The Netherlands has also benefited from changes in their national building code that improved the security of all new dwellings — i.e. not just ones considered at high risk. A robust empirical evaluation showed that:

> *"...regulation of built-in security in homes is highly effective in reducing victimisation from burglary. Through the application of better burglary-proof windows and doors, the burglary risk in new-built homes has been reduced by 26% compared with homes built in the years prior to the regulatory change."*
>
> van Ours and Vollaard, 2011, p. 503.

The introduction of the Building Code does not seem to have had a negative effect on burglary rates in Dutch homes built before the regulatory change. The evaluators also found no evidence for displacement of burglary to other property crimes (van Ours and Vollaard, 2011, p. 503)

The UK has also seen changes to the Building Code. Manufacturers' products, such as doors and windows, have to pass physical tests to gain PAS 24 or equivalent to meet the requirements of Part Q (Security – Dwellings) of the Building Regulations in England. The new requirement Q1, states that

reasonable provision must be made to resist unauthorised access to any dwelling and any part of a building from giving access to an apartment (PBC Today, 2017). This new requirement applies to new dwellings—but not existing dwellings, even if undergoing renovation (PBC Today, 2016).

The advantage of integrating crime prevention into a national Building Code is that it ensures compliance with standards across a country, including in areas where there is a lack of resource and skills within police forces or local planning authorities to support CP-UDP.

8.2 Multi-agency partnerships

We can see that CP-UDP needs a multidisciplinary approach — or partnership approach — but also a clever synchronising of action at the neighbourhood level, the city level, the national and even European level. So there is a horizontal cooperation needed (multi-agency) but also a vertical one (neighbourhood, city, nation, continent).

In terms of measures to improve implementation of CP-UDP, attention should be focused on: (a) the points in the system where most benefit can be achieved, (b) the stakeholders most able to bring about change in a given context; and (c) the role of LEAs.

In the UK, Secured by Design (SBD) certainly plays a significant crime prevention role in the planning process, helping to design out crime across a wide range of building sectors. The scheme reports having achieved one million homes built to SBD standards with reductions in crime of up to 87 per cent (SBD website, accessed 3 May 2019). Its role in supporting testing and accreditation of security-related products is also important for product development, as well as supporting the security industry.

Secured by Design works closely with regulatory bodies, along with other organisations concerned with professional practice and quality:

> *"Secured by Design (SBD) works closely with UK Police Forces and a wide range of other organisations, including National and Local Government, British and European Standards authorities, the construction industry, trade associations and manufacturers, to achieve sustainable reductions in crime."*
>
> PBC Today, 2017.

However, the UK Secured by Design scheme has undergone significant changes in management and its ability to deliver the scheme must be diminished by cuts in police resources. Police forces across England and Wales reduced staffing, particularly amongst older employees, civilian staff and non-frontline officers (HMIC, 2011). Architectural Liaison Officer (ALO) resources have been diminished by cuts in public spending on policing. The impact on police crime prevention services is currently being explored by the Design Against Crime Solution Centre. We do know that GMP's Design for Security service has been protected to some extent by its self-funding consultancy model.

In the Netherlands, Police Label has changed significantly, and research is being undertaken into the renewal of Police Labels awarded five years ago.

8.3 The knowledge base: Holistic framework and diversity

There have been a number of comprehensive reviews of the literature conducted over the last decade — all extremely valuable for understanding developments in CP-UDP (Ekblom, 2011; Gibson, 2013; and Armitage & Ekblom, 2019). Based on a meta-analysis of about 200 CPTED books and documents Victoria Gibson and Derek Johnson (Security Journal May 2013/16) stress the importance of one common language, or an 'holistic framework' as this is often called. According to academics like Paul Ekblom this is a heavy burden. In conclusion to an evaluation of the Manchester *Design for Security* approach Armitage and Ekblom note:

> *"Again, this chapter reminds us that CPTED and its implementation is far from standardised, with such differing models of delivery, even within one country (in this case England), that it renders generalisation of effectiveness hugely problematic."*
>
> Armitage & Ekblom, 2019, p. 251.

Though some authors are still looking for the grail of one generic theory, we may agree that the current state of CP-UDP looks extremely diverse. However, this might also be seen as an indicator for the success of CP-UDP since each approach, scheme, initiative and project has had to adapt to the national context and consider the local situation. Each country has specific types of crime problems, specific groups of offenders, particular types of victims, along with its own building codes, social approaches and laws. Each local situation — each neighbourhood — comprises different stakeholder groups, processes, situations and crime problems (remember the double crime triangle of figure 1). While there is general agreement on some principles related to CP-UDP, there may be ongoing debate regarding the safety and security of particular urban forms. For example, while the dangers of high-rise residential dwellings were explored by Jacobs and Newman, such building forms continue to be developed for deprived communities — especially in some countries (Soomeren *et al*, 2014)

These differing models of delivery of CP-UDP might be a sound theoretical basis for appreciating differences all over the world in delivering CP-UDP. Some aspects of the approach can nevertheless be standardised. For example, technical 'target hardening' measures such as locks, bolts, fences, lighting can be prescribed as fixed requirements. In short, the simple or more technical requirements. As we saw earlier, this is sometimes done in the Building Code of a country. As soon as more sophisticated social situational approaches are needed, relating to a neighbourhood or community, the CPTED approach is an adaptive and organic one. When it comes to integrating crime prevention into design and planning procedures, the approach must be suited to the specific context.

8.4 Social, building and technological interventions

There has been debate about the extent to which CP-UDP approaches should promote technological interventions (such as CCTV) while ensuring enough attention is paid to supporting social aspects. In relation to CPTED, there has been some criticism of how it is defined, presented and implemented—particularly in the US. Greg Saville and Gerry Cleveland suggest that CPTED has traditionally adopted a physical design focus, and that it should include a stronger 'social component'.

Greg Saville and Gerry Cleveland discuss the rather 'physical design focussed' definition from Tim Crowe (a US ex-policeman), who defined CPTED in 1991 as:

> *"…The proper design and effective use of the built environment can lead to a reduction in the fear of crime and the incidence of crime, and to an improvement in the quality of life."*
>
> Crowe, 1991, p. 1; Crowe and Fennely, 2013, p. 280.

Second- and Third-Generation CPTED

In 2008, Saville and Cleveland suggested adding a strong 'social component' and proposed calling it "*2nd generation CPTED*":

> *"We are suggesting that 2nd generation CPTED is a new form of ecological, sustainable development. This ecological and sustainable development must, of course, use traditional CPTED design principles. But the problem with limiting CPTED to the rational offender model is that it is too narrow and offender centred. Ultimately, in the next millennium, it is not sustainable as a model. As a narrow preventive tool, we can make proper use of it, but we should never see it as a model for future development. For starters, we need to expand our efforts into the realm of residents' responsibility, residents' participation, youth activities, urban meeting places, and human scale neighbourhoods."*

The authors suggest that in (1st generation) CPTED, the focus is on changing the physical environment, such as through better sight lines for visibility, better lighting, symbolic or real barriers and better maintained areas. In 2nd generation CPTED, there should be greater attention paid to the social environment. Examples of social interventions include making passive bystanders more active guardians; encouraging residents to become active; and increasing community interest and engagement. The proposal for 2nd Generation CPTED was not widely accepted by European audiences simply because these social aspects are already routinely considered and promoted in most EU contexts.

In 2019, Mihinjac and Saville introduced a holistic and integrated crime prevention theory called *Third-Generation CPTED*:

> *"Our position in this paper is that Third-Generation CPTED should build on Jeffery's original directions for CPTED and adopt a more holistic theoretical approach for expanding both First- and Second-Generation CPTED."*
>
> (Mihinjac and Saville, 2019, p.4).

And:

> *"We use Third-Generation CPTED to expand both the situational focus of traditional CPTED and the social ecology/neighbourhood focus of Second-Generation CPTED, by creating a new theory that integrates human motivation and aspirations within a neighbourhood Liveability Hierarchy. Central to our theory is the planning concept of liveability and, because safety from crime, fear, and victimization is such an integral part of quality of life, we present two underlying themes on which liveability depends: public health and sustainability. (…..). Our contention is that a holistic and integrative Third-Generation CPTED elevates liveability from the role of basic infrastructure and habitat to providing residents with opportunities to enhance their own personal aspirations and improve their quality of life."*
>
> Mihinjac and Saville, 2019, p. 1.

The Third-Generation CPTED theory builds on Maslov's pyramid of human needs: *"The contention in Third-Generation CPTED is that neighbourhood-based, pro-social activities that produce caring eyes on the street are, if designed accordingly, a form of self-fulfilment and a goal within themselves"* (Mihinjac and Saville, 2019, p. 16).

However, *"The Third-Generation CPTED (…) theory is still under development and open to empirical testing and further contributions by the CPTED community."* (personal communication with one of the authors (PvS mail 04-04-2022).

The Third-Generation CPTED theory bridges the strict social/physical distinction that still existed in the 1st and 2nd generation CPTED distinction in the USA. From a completely other direction this physical/technical versus social/human distinction was attacked and seen as artificial by the philosopher Latour in 1994. According to Bruno Latour (1994), this dualism does not exist in real life:

> *"The mistake of the dualist paradigm was its definition of humanity. Even the shape of humans, our very body, is composed in large part of sociotechnical negotiations and artefacts. To conceive humanity and technology as polar is to wish away humanity: we are sociotechnical animals, and each human interaction is sociotechnical. We are never limited to social ties. We are never faced with objects. (…). At the very least, I hope to have convinced you that, if our challenge is to be met, it will not be met by considering artefacts as things. They deserve better. They deserve to be housed in our intellectual culture as full-fledged social actors. They mediate our actions? No, they are us."*
>
> (Latour, 1994, p.64).

Latour's best-known example is that of the gunman, in which Latour states that a man (social/human) and a gun (physical/technical) form a new third entity when they are connected: the gunman. Closer to CP-UDP we may introduce the 'lock-resident': the physical/technical lock in itself does not prevent a burglary, we need a motivated resident willing and able to turn the key to a lock in a burglary resistant door, or considering Third-Generation CPTED: a resident that will step outside that door and be willing

to take part in street life and pro-social activities. Following this line of thinking, we would suggest that our human-designed and human-used physical/technical environments are necessarily loaded with social and cultural meaning. Thus, our cities, towns and neighbourhoods are social actors — "they are us".

9 References

Alexander, C., Ishikawa, S. and Silverstein, M. (1977) *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press.

Armitage, R. (2000) *An Evaluation of Secured by Design Housing Within West Yorkshire*. Home Office Briefing Note 7/00.

Armitage, R. (2013) *Crime prevention through Housing Design: Policy and Practice.* Basingstoke: Palgrave Macmillan.

Armitage, R. and Ekblom, P. (2019) *Rebuilding Crime prevention through Environmental Design.* Routledge, Crime Science Series.

Barker, A. and Crawford, A. (2006–2009) "Fear of Crime and Insecurity in Europe". *CrimPrev: Assessing Deviance, Crime and Prevention in Europe, Report WP4*, Coordination Action, Framework Programme 6 (FP6), http://lodel.irevues.inist.fr/crimprev/index.php?id=330.

Barosso, I., Cardia, C. Nicolini, U, and Wellhoff, F. (2014) *Milan: Crime Prevention through Urban Design.* Academic research and training. See: http://costtu1203.eu/downloads/cost-tu1203s-results/

Barnes, A. R. (2013). Chapter on: Clarence Ray Jeffery. In Miller, J. M., & Wright, R. A. (2013). *Encyclopedia of criminology*. Routledge.

Bate, P. (2014) Context is everything. In: Perspectives on context; A selection of essays considering the role of context in successful quality improvement. The Health Foundation, London

Benbouzid, B. (2011) "La prevention situationnelle"; *Genese et developpement d'une science pratique*. Université Lumière Lyon

CEN; European Committee for Standardization. (2003 until the present day) All documents CP-UDP in the CEN 14383 series

Central Saint Martins, Design Against Crime, managed by Professor Lorraine Gamman: http://www.designagainstcrime.com/about-us/background-history/.

Clarke, R.V. (ed) (1997) *Situational Crime Prevention* (Successful Case Studies). Second edition New York: Harrows and Heston Publishers

Clarke, R.V. and Mayhew, P. (Eds.) (1980) *Designing out crime*. London: Her Majesty's Stationery Office.

Corbillé, M.A. (2014, November 13) *Publications on Urban Safety in French*. Retrieved from: http://costtu1203.eu/publications-on-urban-safety-in-french/

COST (Cooperation in Science and Technology). COST action TU 1203. See www.costtu1203.eu

COST Action TU1203, Crime Prevention Through Urban Design and Planning. Information about the Action available from: http://www.cost.eu/domains_actions/tud/Actions/TU1203

Cost Action TU1203, Crime prevention through Urban Design and Planning (2017, December 24). *Relation between Quality of life and Safety in high-rise housing – Łódź*. Retrieved from http://www.costtu1203.eu/relation-between-quality-of-life-and-safety-in-high-rise-housing_lodz-poland/

Cost Action TU1203. (2014) *Review of CEN 14383: The death and life of great European standards and manuals – Development and implementation of the CEN 14383 standards*. Retrieved from: http://www.costtu1203.eu/wp-content/uploads/2014/10/03.-Review-of-CEN-14383-The-death-and-life-of-geat-European-standards-and-manuals.pdf

Cost Action 1203. (2014) *Publications on CP-UDP – A European bibliographic overview across the language barriers* – including some questions on terminology

Cozens, P. M. (2014) *Think crime! Using evidence, theory and crime prevention through environmental design (CPTED) for planning safer cities.* Australia: Praxis Education.

Cozens, P. M., and T. Love (2017) The Dark Side of Crime Prevention Through Environmental Design (CPTED). In: Oxford Research Encyclopedia of Criminology and Criminal Justice. Oxford University Press

Cozens, P. M., G. Saville and D. Hillier (2005) "Crime Prevention Through Environmental Design (CPTED): A Review and Modern Bibliography". *Property Management* 23 (5): 328–356.

Crowe, T.D. (1991 and second edition 2000). *Crime prevention through Environmental Design*, Butterworth-Heinemann. Third revised edition by Crowe, T.D. and Fennely, L. 2013 Buttersworth-Heinemann: Elsevier.

Davey, C. L. (2008) *"Design Against Crime Exchange Tool: Guidance for Designing Against Crime across Europe".* University of Salford: Salford, UK.

Davey, C. L. & A. Jongejan (2002) *Police Label Secure Housing: Design Against Crime Case Studies*, Hippokrates 2001 project, University of Salford.

Davey, C.L. & Wootton, A.B., (2018) *Design for Security – A police crime prevention consultancy service integrated within the design and planning process*. Case Study Resource. COST Action TU1203

Davey, C.L. & Wootton A.B. (2016) "Integrating crime prevention into urban design and planning – From European procedures to local delivery methods". *Journal of Place management and Development, Vol. 9, No. 2* pp. 153–165

Design Council (2011) *Designing Out Crime: A Designer's Guide*. Design Council: London, UK. Original research conducted by the Design Against Crime Solution Centre, University of Salford. Download

from:
https://www.designcouncil.org.uk/sites/default/files/asset/document/designersGuide_digital_0_0.pdf

Design Council (2003) *Think Thief: A Designer's Guide to Designing Out Crime*. UK Design Council and Design Policy Partnership (based on Design Against Crime: Support material for Design Professionals written by Cooper, Davey, et al). UK Design Council: London.

de Waard, J. (2015) *Daling van (geregistreerde) criminaliteit: Trends en mogelijke verklaringen*. Den Haag: Ministerie van Veiligheid en Justitie, Directie Rechtshandhaving en Criminaliteitsbestrijding (available from: j.de.waard@minvenj.nl)

Ekblom, P. (2000) *Less Crime, by Design.* Presentation at Royal Society of Arts, London, UK, 11th October 2000.

Ekblom, P. (2011). "Deconstructing CPTED… and Reconstructing it for Practice, Knowledge Management and Research". *European Journal on Criminal Policy and Research*, Volume 17, Issue 1, pp. 7-28.

Ekblom, P. (Guest Ed) (2012), "Design Against Crime. Crime Proofing Everyday Products". *Crime Prevention Series*, Vol. 27, Ronald.V. Clarke, (Series Editor).

EU (2010) Internal security strategy for the European Union Towards a European security model. Text, adopted by the Justice and Home Affairs Council at its meeting on 25 and 26 February 2010 and approved by the European Council on 25 and 26 March 2010.

European Committee for Standardization: see CEN

Farrell, Graham, Tilley, Nick and Tseloi, Andromachi (2014) "Why the Crime Drop?" *Crime and Justice,* Vol 43, issue 1, pp. 421-490, available at:
https://www.journals.uchicago.edu/doi/abs/10.1086/678081?mobileUi=0&journalCode=cj

Felson, M. and Clarke, R. (1998) *Opportunity Makes the Thief: Practical theory for crime prevention*, Home Office Police Research Series, Paper 98. Policing and Reducing Crime Unit Research

Gibbon, Sian (13 October 2014). *"Anti-social Behaviour, Crime and Policing Act 2014 - All Change?"* www.ashfords.co.uk. Ashfords LLP. Archived from the original on 8 December 2015. Retrieved 27 November 2015.

Gibson, V. and Johnson, D. (2013) "CPTED, but not as we know it: Investigating the conflict of frameworks and terminology in crime prevention through environmental design". *Security Journal*, May 2013, p. 1-20.

Giedion, S. (2009) *Space, Time and Architecture – The Growth of a New Tradition*, Cambridge Mass. 5th edition, part 6.

Glenn, A. L., & Raine, A. (2014). "Neurocriminology: implications for the punishment, prediction and prevention of criminal behaviour". *Nature Reviews Neuroscience*, 15(1), 54.

Great Britain (1998) *Crime and Disorder Act 1998*, Section 17. London: HMSO

Grönlund, B. (2013) "Scandinavian CPTED: A Dilemma of Happy Welfare States – or a More General One?" 2013 ICA International Conference, *Creating Safer Communities*, Calgary, Canada July 3–4, 2013 (http://www.cpted.net/Resources/Documents/ICAConf/2013/Scandinavian%20CPTED_revised19-08-2013.pdf)

Grönlund, B., Korthals Altes, H.J., Soomeren, P. van and Stummvoll, G. (2014) *Review of Cen 14383; The death and life of great European standards and manuals – Development and implementation of the CEN 14383 standards.* COST Action TU1203: Working Group 2, Crime Prevention through Urban Design & Planning. See: http://costtu1203.eu

HMIC (2011) *Adapting to Austerity*, Her Majesty's Inspectorate of Constabulary (HMIC): London, UK. p.23. Available from www.hmic.gov.uk

Hodge, M. (2009) "Delivering Crime Prevention: The Manchester Model". Manchester Study Visit, delivered on 27th April as part of the EU Commission-funded project (Prevention of Fight Against Crime) *Designing Safer Communities: Crime Prevention Through Environmental Design*, led by An Garda Síochána.

Jacobs, J. (1961) *The Death and Life of Great American Cities*. Modern Library (hardcover) ed.). New York: Random House. February 1993 [1961].

Jeffery, R. C. (1971) *Crime Prevention through Environmental Design*. Beverly Hills: Sage Publications.

Jongejan, A. and Woldendorp, T. (2013) "A Successful CPTED Approach: The Dutch 'Police Label Secure Housing'". *Built Environment*, Volume 39, Number 1, March 2013 , pp. 31-48(18).Download from: http://www.veilig-ontwerp-beheer.nl/publicaties/a-successful-cpted-approach-the-dutch-2018police-label-secure-housing2019

Justice and Home Affairs Council of the European Union (meeting 15-03-2001). Agreement on the conclusion of the EU experts' Conference 'Towards a knowledge- based strategy to prevent crime' (Sundsvall, Sweden, 2001):

Kelling, G. L and Coles, C.M. (1996) *Fixing Broken Windows: Restoring Order and Reducing Crime in Our Communities*. New York, Touchstone Books.

Lee, YongJei et al. (2017). How concentrated is crime at places? A systematic review from 1970 to 2015. Crime Science, vol. 6, pp. 1-16. https://crimesciencejournal.springeropen.com/track/pdf/10.1186/s40163-017-0069-x?site=crimesciencejournal.springeropen.com

López, M.J.J. Veenstra, C. Van der Eijk, E. and Seuren, E. (2010) *Een veilige wijk, een veilig gevoel? Onderzoek naar de veiligheidsbeleving van bewoners van PKVW gecertificeerde nieuwbouwwijken.* This report contains a short summary in English https://hetccv.nl/fileadmin/Bestanden/Onderwerpen/Veiligheidsbeleving/veilige_wijk_veilig_gevoel.pdf

Macintyre, S. and Ellaway, A. (2003) "Neighbourhoods and Health: An Overview" In: Kawachi, I. and Berkman, L.F. (ed) pp. 39. *Neighbourhoods and Health*. Oxford University Press

Martinez, Nathalie et al. (2017). Ravenous wolves revisited: a systematic review of offending concentration. Crime Science, vol. 6, 16 pp. https://crimesciencejournal.springeropen.com/track/pdf/10.1186/s40163-017-0072-2?site=crimesciencejournal.springeropen.com

Michael, S.E., Saville, G. and Warren, J.W. (2012) "A CPTED bibliography: Publications related to urban space, planning, architecture, and crime prevention through environmental design, 1975–2010". *Landscape Architecture and Environmental Planning Faculty Publications.* Paper 65. http://digitalcommons.usu.edu/laep_facpub/65

Michael, P. Saville, g. and Hillier, D. (2005) *Crime prevention through environmental design (CPTED). A review and modern bibliography.* Bingley (UK): Emerald Group Publishing Limited. Retrieved from:

Mihinjac, M and Saville, G. (2019) Third-Generation Crime Prevention Through Environmental Design (CPTED). In: Social Sciences 2019, 8, 182. https://www.researchgate.net/deref/http%3A%2F%2Fwww.mdpi.com%2Fjournal%2Fsocsci

Mumford, E. (2000) *The CIAM Discourse on Urbanism – 1928–1960*, Cambridge Mass. and London. (Foreword by Kenneth Frampton).

Nauta, O., Soomeren, P. van, Vincent de Goeij, V. de and Özgül, P. (2018) *Politiekeurmerk Veilig Wonen onder de loep.* DSP-groep for the ministry of Justice and Security June 2018 (in print)

ODPM (2004) *Safer Places. The Planning System and Crime Prevention*. Office of the Deputy Prime Minister. Thomas Telford Ltd: Tonbridge, UK.

Pascoe, T. (1999) *Evaluation of Secured by Design in Public Sector Housing*. Building Research Establishment.

Pawson, R. and Tilley, N. (1997) *Realistic Evaluation*. SAGE Publications, London.

PBCToday (2017) “Complying with the building regulations for security”, *Planning and Construction News*, 2 August 2017, available at: https://www.pbctoday.co.uk/news/building-control-news/complying-building-regulations-security/34391/

PBC Today (2016) "How to meet the security requirements in Approved Document Q", *Planning and Construction News*, 6 July 2016, available at: https://www.pbctoday.co.uk/news/building-control-news/meet-security-requirements-approved-document-q/26099/

Pease, K. (2001) *Cracking Crime Through Design*. UK Design Council: London. p. 27.

Penney, S. (2012). "Impulse control and criminal responsibility: Lessons from neuroscience". *International journal of law and psychiatry*, 35(2), 99-103.

PLuS (2009–2012) Reports (in English, German and polish) from the EU-funded research project, *'Planning Urban Security'* (PLuS), are available from: from:http://www.lka.polizei-nds.de/praevention/vorbeugung_themen_und_tipps/staedtebau/staedtebau-152.html

Politecnico di Milano (2010) *Planning Urban Design and Management for Crime Prevention Handbook*. Politecnico di Milano, Laboratorio Qualita Urbana e Sicurezza's SAFEPOLIS project.

Roché, S. (2002a) "Towards a New Governance of Crime and Insecurity in France", in A. Crawford (ed.) *Crime and Insecurity: The Governance of Safety in Europe*, pp. 213–33. Cullompton: Willan Publishing.

Rouse, W.B. (1991) *Design for Success. A Human-centred Approach to Designing Successful Products and Systems*. John Wiley and Sons: New York.

RPD (Rijks Planologische Dienst; National Bureau of Urban Planning and Design) (1985) *Maakt de gelegenheid de dader?* Staatsuitgeverij, The Hague.

Saville, Greg & Cleveland, Gerry. (1998) *2nd Generation CPTED: An Antidote to the Social Y2K Virus of Urban Design*. School of Criminology and Criminal Justice, Florida State University and Toronto District School Board. Retrieved from http://www.veilig-ontwerp-beheer.nl/publicaties/2nd-generation-cpted-an-antidote-to-the-social-y2k-virus-of-urban-design/view?searchterm=saville

SooHyun, O , Martinez, N.N., YongJei Lee and Eck, J.E (2017) How concentrated is crime among victims? A systematic review from 1977 to 2014. Crime Science, vol. 6, 16 pp. https://crimesciencejournal.springeropen.com/track/pdf/10.1186/s40163-017-0071-3?site=crimesciencejournal.springeropen.com

SBD (2019) *Secured By Design* website, accessed 3 May 2019, available at: https://www.securedbydesign.com/about-us/news/we-are-very-much-looking-forward-to-working-alongside-the-sbd-team-as-well-as-the-doco-s-and-cpo-s-that-work-so-hard-to-keep-us-all-safe

Schubert, H. and Schnittger, A. (2005) *Sicheres Wohnquartier Gute Nachbarschaft. Handreichung zur Förderung der Kriminalprävention im Städtebau und in der Wohnungsbewirtschaftung*. (2-Auflage) Niedersächsischen Innenministerium: Hannover, Germany.

Schubert, H., Spieckermann, H. and Veil, K. (accessed 30.04.19) *Sicherheit durch präventive Stadtgestaltung, Bundeszentrale für politischen Bildung*, Available at: http://www.bpb.de/die-bpb/

Schubert, H., Soomeren, P. van, Idrovo, D., Persov, E., Bloeme R. and Saraiva, M. (2017, September 9) *Cooperation in Partnerships and Process of CP-UDP*. Retrieved from http://www.costtu1203.eu/cooperation-in-partnerships-and-process-of-cp-udp/

Shaw, C. R. (1929) *Delinquency Areas*. University of Chicago Press, Chicago.

Shaw, C. R. and H.O. McKay (1931). *Social Factors in Juvenile Delinquency*. Government Printing Office, Washington D.C.

Shaw, C. R., & H. O. McKay (1942/1969, revised edition) *Juvenile Delinquency and Urban Areas*. University of Chicago Press, Chicago.

Sherman, L.W., Gottfredson, D., MacKenzie,D., Eck, J., Reuter, P. and Bushway, S. (1997) *Preventing crime: What works, what doesn't, what's promising.* A report to the US-Congress prepared for the National Institute of Justice by Department of Criminology and Criminal Justice, University of Maryland

SIPA (accessed 30.04.19) *Sicherheitspartnerschaft im Städtebau in Niedersachsen*, SIPA. Available at: http://www.sipa-niedersachsen.de

Stummvoll, G. (2004) "Design Against Crime in Vienna: A Feminist Approach". *Crime Prevention and Community Safety: An International Journal*, Vol. 6, no. 4., pp.71 – 82.

Stummvoll, G., Aquilué Junyent, I., Corbille, M., Cardia, C., Soomeren, P. van and Galdon Clavell, G. (2014) *BARCELONA, Bellvitge: Unexpected Success – Against all Odds*

The Economist (2013) 'The Curious Case of the Fall in Crime'. Leaders, The Economist, 20th July 2013. Download from: http://www.economist.com/news/leaders/21582004-crime-plunging-rich-world-keep-it-down-governments-should-focus-prevention-not

Town, S., Davey, C.L. and Wootton (2003) *Design Against Crime: Guidance for the design of residential areas*. University of Salford. Second Edition. ISDN 0 902 896520.

Transit (2014) Information about nationally funded project about the security of residential areas in Germany, Transit, can be found at: http://www.transit-online.info/home.html

UK Design Council, *Designing Out Crime*, www.designcouncil.org.

van Dijk, J., van Kesteren, J. and Smit, P (2007) *"Criminal Victimisation in International Perspective. Key findings from the 2004–2005 ICVS and EU ICS"*. WODC: Den Haag, Netherlands.

van Dijk, J., van Soomeren, P. and de Waard, J., (2017) *Crime prevention; international perspectives, issues, and trends.* Winterdyk, J. (ed.). Boca Raton: CRC Press, p. 477-502

van Dijk, Jan J.M., Tseloni, Andromachi, and Farrell, Graham (Eds.). (2012) *The International Crime Drop: New Directions in Research*. Palgrave Macmillan. http://www.palgrave.com/page/detail/?sf1=id_product&st1=502193

van Ours, J.C. and Vollaard B.A. (2011) "Does regulation of built-in security reduce crime? Evidence from a natural experiment". *Economic Journal*, Volume 121, Issue number 552, page 485–504

van Ours, J.C. & Vollaard, B. (2014). The Engine Immobiliser: A Non-starter for Car Thieves. The Economic Journal, Volume 126/593, June 2016, pp.1264-1291. https://doi.org/10.1111/ecoj.12196

van Soomeren, P. (1987) *Criminaliteit en Gebouwde Omgeving*. Ministry of Housing, Planning and Environment (Ministerie van Volkshuisvesting Ruimtelijke Ordening en Milieubeheer), The Hague

van Soomeren, P. (2007) "Annex 15 – The European Standard for the Reduction of Crime and Fear of Crime by Urban Planning and Building Design: ENV 14383–2", Technical Report CEN/TR 14383–2, October 2007.

van Soomeren, P. van, Kleuver, J. de and Klundert, W. van de (2014) *High-rise in trouble. The Bijlmermeer in Amsterdam.* COST Action TU1203: Crime Prevention through Urban Design & Planning http://costtu1203.eu

van Soomeren, P., Klundert, W. van de, Aquilué, I. and Kleuver, J. de (2016) "High-rise in trouble? Learning from Europe". *Journal of Place Management and Development, Vol. 9 No. 2*, pp. 224-240. Htpps://doi-org/http://dx.doi.org/10.1108/JPMD-12-2015-0058

Weisburd, D., Groff, E.R. and Yang, S.M (2012) *The Criminology of Place* (street segments and our understanding of crime problems). Oxford University Press.

Weisburd, D. (2015) The Law of Crime Concentration and the Criminology of Place (the 2014 Sutherland Address) . Criminology Volume 53 Number 2, page 133–157. American Society of Criminology

Wilson, J. Q. and Kelling, G. (1982) "Broken Windows", *Atlantic Monthly*, 249 (3), pp.29–38.

Wootton, A. B. and Davey, C.L. (2003) *Crime Life-Cycle. Guidance for Generating Design Against Crime Ideas*. University of Salford: Salford, UK.

Wootton, A.B. & Davey, C.L. (2012) "Embedding Crime Prevention within Design", in Ekblom, P. (Guest Ed), 'Design Against Crime. Crime Proofing Everyday Products'. *Crime Prevention Series*, Vol. 27, Ronald.V. Clarke, (Series Editor).

Wootton, A.B., Marselle, M., Davey, C.L., Armitage, R. and Monchuk, L. (2009) *National Police Crime Prevention Service. Implementation Planning Research Project*. DAC Solution Centre: Salford, UK. Available from: www.npcps.org

Wortley, R. and Townsley, M. (2017) Environmental Criminology and Crime Analysis, Routledge/Taylor & Francis, New York.

CCi

CUTTING CRIME IMPACT

University of Salford MANCHESTER

DSP

university of groningen

POLITIE

Greater Manchester POLICE

Estonian Police and Border Guard Board

POLÍCIA MUNICIPAL LISBOA

LANDESKRIMINALAMT NIEDERSACHSEN

Generalitat de Catalunya Departament d'Interior

DPT-i Institut für angewandte Präventionsforschung

European Forum for Urban Security

LOBA CUSTOMER EXPERIENCE DESIGN

www.cuttingcrimeimpact.eu

Contact Us . info@cuttingcrimeimpact.eu

This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No 787100