CRIME PREVENTION THROUGH URBAN DESIGN AND PLANNING
A Practioners View on CP-UDP

Conference on Urban Security and Urban Development
Faculty of Architecture, University of Belgrade, 21. June 2017

Bo Grönlund, architect, urban planner maa, msa, emeritus, bgron@kadk.dk

member of:
The Danish Crime Prevention Council, DKR
BoTryggt2030, Safer Sweden
The International CPTED Association, ICA, board
CPTED – CP-UDP anti-urban vs. urban

1972 Oscar Newman
Defensible space
to improve modernist
districts based on
territorial thinking.
Original CPTED version
Difficult task here!

1960 Jane Jacobs
Social control through city
life – not to be destroyed by
modern planning.
Continental Europe CP-UDP,
eg. 2007 CEN 14383:2,
US Safescape (APA 2005)
CP-UDP and the law in Europe

• In the Netherlands 3-minutes burglary protection is demanded by law in all new housing since 2001. This means 26% burglary reduction and no net displacement of crime. PKVW certification (voluntary) gives up to 90% crime reduction.

• In France since the 1990s all new large developments have to be analysed for crime issues before construction. Here a large remodelling of a modernist district in Lyon into more urban streets and blocks.

• In the UK planning for safer spaces are also promoted by law, but in a more unclear way. Safer Places is a government guide from 2005. There is also voluntary certification "Secured by Design". The Greater Manchester region has an approval system of its own.
CPTED – CP-UDP
- at the crossroads

Wellfare societies

CP-UDP in SE & DK
reduce real risks
reduce fear of crime

CP-UDP in NL, FR, DE

Urban

Anti-urban

CPTED UK

CP-UDP UK

2nd gen CPTED US

1st gen CPTED US

SafeScape US

Non-wellfare societies

Gated Communities
The spread of CPTED/ CP-UDP in Europe

The CPTED / CP-UDP Wave an interpretation attempt:

- starting in the US in 1960s
- coming to UK in the 1970s
- to NL and DK in the 1980s
- to CEN, NO, SE, DE, BL, FR, CH, AT, CZ, and HU in the 1990s
- to PL, PT, ES, IT, SI, RS, BG and IE in the 2000s
- to LT in the 2010s and may be more..
CP-UDP Europe – from norms to place solutions

1990s: **Norms** (mainly general how to build advice), e.g. Danish Standards 1990 on the prevention of violence and vandalism in the built environment (urban approach)


2012/2017: **Place specific solutions** based on GIS crime data added. Weisburd et al "The Criminology of Place". EU COST TU 1203 "GIS Mapping". Place studies in e.g. Stockholm and Danish cities.

Crime/km² varies in DK from 6000 to zero /year. Socio-economic factors can’t explain the great variation in crime/km²
CPTED 1- gen. vs. CP-UDP Sweden 2017 (BoTryggt2030)

CP-UDP Sweden starts from most people being empathic towards others, also to strangers, and using golden rule ethics if treated fairly.

CPTED starts from human beings as territorial animals that have to defend their space.

Source: Adapted from Moffat (1983, p. 23)
Thresholds of urban life

Crowding: Less than 2 sq. meters / person

Urban centrality: at least 1000 persons / hour (a place to hang out)

Urbanity basic level: at least 3 persons visible within 100 meters – or at least 100 persons/hour

Pedestrians vary from 10,000/hour to 0/hour
CP-UDP – 7 steps to professional place solutions

1. Tailored to the specific location/place
2. Increased research and more useful research findings
3. Evolving CPTED/CP-UDP professionalism
4. Backed by government and other crime prevention agents
5. Taught to planners, architects, etc.
6. Integrated into urban planning, urban design and building design
7. Access to relevant data

4 Scandinavian examples – an introduction

Location of the 4 examples on income maps of Stockholm, Aarhus and Copenhagen (the maps are not to scale).

In Stockholm violet district are the richest, light blue the poorest. In the Danish cities dark read districts are the richest, dark green the poorest.

The Stockholm example, Hammarby Sjöstad is a new development built 1998-2015 for middle class and upper middle class people mostly.

The Danish examples are all low income remodelling cases. All three are on the official Danish Ghetto list. About 70-80% of the residents here are Muslim immigrants.

I have been involved personally in all 4 cases, so I am one of many responsible.
Hammarby Sjöstad, Stockholm

Built 1999-2015 - ’Builds the city inwards’ on ‘brown-fields’ at the edge of the inner city. Hammarby Sjöstad in the south east is also an important ecological sustainability project.

It is new, non-gated and rather dense. It contains basic features of CP-UDP.

Even if relatively affluent, the difference from Stockholm averages are rather small concerning housing composition, income and education.

• A new ‘Light Rail City’ with streets and blocks
• Functional mix – in the right locations
• 8000 dwellings, 15.000-20.000 residents, 8000 places of work
• Populated streets and walks, rich in services and recreational places
• Also contemporary modern: Green and open
Hammarby Sjöstad evaluated according to norms

Hammarby Sjöstad is Swedish New Urbanism. A city district of streets and blocks plus green and city-, water-, and nature views and promenades.


My research 2010-2012 showed that the CP-UDP guidelines were fulfilled to a large degree, except for parking of cars and bikes.

Most streets have a necessary flow for informal social control. No real central places except at a corner at rush hours. No crowding except in tram and ferry boat.
CRIME/1000 INHABITANTS IN HAMMARBY SJÖSTAD (top)

In comparison with Skarpnäck district (to the south of Hammarby Sjöstad), the average for the city of Stockholm and for Sweden. Source: Stockholm Police headquarters (2010).

FEAR OF CRIME, 2010, HAMMARBY SJÖSTAD (bottom)

In comparison with Södermalm district (of which Hammarby Sjöstad is a part), the Skarpnäck district (to the south of Hammarby Sjöstad), the Södermalm district (mainly to the north of Hammarby Sjöstad), and the average of City of Stockholm. Source: Roth and Sandal, 2010.

Light Blue is Hammarby Sjöstad. Crime is low, except car related. Fear of crime is also low.

Read more:

Chapter 12
Is Hammarby Sjöstad a Model Case? Crime Prevention Through Environmental Design in Stockholm, Sweden

Bo Grönblad
Gellerup, Aarhus, Denmark

Gellerup-Tøveshøj in the city of Aarhus. Planned in the 1960s, built around 1970. Traffic separation. Poor contact to the rest of the city. Bottom left – the yellow lines are pedestrian and bicycle routes – often with very few people. People count shows 6 til 84 persons/hour – nowhere above 100/hour which is necessary for natural surveillance.

In 2007 a restructuring process got started with new real streets, and light rail. Residents voted yes to the destruction of some of their own dwellings in order to make the plan work. The new main street connects two shopping malls.
Gellerup, Aarhus before and after

Football is the social activity most in focus – the district has a proud team of their own.....

Top left: The main north-south path in 2014.

Middle left: Along the same line the new boulevard is under construction in 2016.

Bottom left: The new boulevard around 2030. Note the light rail in the lower right corner.
In 2013-2014 there was an architectural competition for the future of the central green areas. For the first time in Danish history CP-UDP was included in both the program and in the evaluation of the proposals. The program contained place specific CP-UDP analyses and guidance. None of the proposals was CP-UDP perfect in the first stage of the competition, but the one that won in the end adapted the design to better fit the CP-UDP aspects.

Competition program for a better and safer central park (below left). I was part of the program and specialist team for the jury.

Below middle: My desire lines for pedestrian and bike flow diagonally through the park – NB! this was in the program!
Bispehaven, Aarhus – removal of below deck parking and more

2016 competition with 5 teams in a 3 step process. I was advisor helping the Social Housing Company
Bispehaven, Aarhus – highway to street-park & culture house

A much too wide highway runs through the housing area in a kind of valley. Almost nobody is to be seen here either.

As part of the plan the highway is transformed into a street with a useful green park and in the southern end is a new cultural house for the whole district, not just for the housing area.

The light rail to Gellerup will run by here, but the route of the rail lines will be decided in 2019.
Bispehaven, Aarhus – destinations & flows

Pedestrian and bike movement / hour an early afternoon on a weekday in August. Only at two major crossings with bus stops and at a short part in the south the flow was large enough for informal social control. This map was not in the competition program as I had not been part of that. 1st phase delivery showed the teams did not understand the destinations and the flows.
Tingbjerg – Husum North, Copenhagen 2015
Connecting an isolated enclave & more

Tingbjerg and Husum North are 1950s city districts. The urban strategy plan was made by a team of architects and engineers for the City of Copenhagen and 2 social housing companies. Lots of social projects already.
Space Syntax Analyses
Point Depth Maps 2015 – red defines the district

From Ruten

From Frederikssundsvej

Existing (left) and proposed infrastructure (right) - integration (n) values
Blind facades (red) – Shutters (blue)
Lack of facades along movement lines (black) = lack of reflected light and dark areas to the side.

Build more along some of them!

Unsafe areas in Tingbjerg and Husum North - conclusion: Besides infrastructure changes, a development program was launched for the Tingbjerg main street "Ruten" as well as new housing in the south west.

Tingbjerg and Husum North, Copenhagen – more analyses and conclusion
Tingbjerg – Husum North, Copenhagen 2015
Connecting an isolated enclave & more

In the strategic plan I got almost all the CP-UDP I wanted – but now let us see what happens in reality.......
... but it is a priority in the City budget.....
Integrated Urban Planning, Urban Design and Buildings

- CP-UDP should be an integrated part of urban planning, urban design and building design - together with expertise on other aspects of the complete solution of the task in question.

- This is possible in principle, but difficult in reality
- The most complex tasks are long term developments – in Gellerup already 10 years and at least 13 more
- There is a very large number of different stakeholders involved
- The task is divided into many small pieces put up for biddings and competitions by private consultants and firms, with a lack of continuity and possible loss of knowledge in the process
- The integration and continuity therefore depends on an efficient municipal organisation covering several election periods for the municipal council
- Municipal staff changes through long processes
- You can't do anything today without involving the residents and the citizens

I have collected 14 planning documents 2007-2014 relating to Gellerup – only the top of an iceberg:

Municipal strategy plans, Overall municipal plans, Social plans, Urban district plans, Traffic plans, Architectural Policy, Detailed plans (e.g. for a park), Legally binding Local Plans, etc.
Thanks for the attention

Bo Grönlund,
architect maa, sa, emeritus KADK, bo.gronlund@kadk.dk

Some recent publications below – in Danish, Swedish and English (if you copy the internet links to your browser, they will work):


City of Copenhagen Place Based Reports (with place methodology)  
http://costtu1203.eu/downloads/cost-tu1203s-results/