Three urban fabrics: A tool and paradigm of sustainability?

CUSP, Fremantle, 18 October 2012
Main Features of the Model

Prototype – Kuopio Model

Applications and UF-project

Paradigm Shift
The Field of the Project

- Theories
- Plans
- History
- Presence
- Challenge
- Future

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The Field of the Project
Researchers explain the past
The Field of the Project
Planners shape the future
UF Model

UF is a comprehensive tool of research, planning and communication.
UF Project
Main divisions of the survey: History – Challenge – Theory

History

Challenge

Theories
UF Project
Looking for a paradigm, which is up to date and covers the whole field
UF Project
Comprehensive dynamic model

City Models:

Target Models
- Theories
- Strategies
- Plans

Reality Models
- Analysis
- Assessment
- Implementation and use

source: draft 4.3.2009 / L. Kosonen
UF - Three Urban Fabrics

- Functions, Habits, and Cultures of the Societies
- Housing Services
- Urban Environment
- Urban Structure
- Land Use
- Traffic
- Businesses

Three Urban Fabrics

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UF Model
Three Urban Fabrics of a Transit City

source: draft 27.2.2012 / L.Kosonen
UF Model
Three Urban Fabrics of a Car City

source: draft 27.2.2012 / L.Kosonen
Main Features of the Model

Prototype – Kuopio Model

Applications and UF – project

Paradigm Shift
A Prototype
Kuopio Model since 1993

Walking City
Transit City
Car City
A Prototype
Kuopio Model since 1993

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A Prototype
New analysis and understanding

Car density 1992-2006

- Urban sprawl
- Car City
- Outer
- Walking City
- Transit City
- Walking City

Housing 2001

Walking City
Bus Transit City
Inner suburbs
Car City
A Prototype
New analysis and understanding

Carless
Modes
Shops

Bus Transit
City
Car City

Walking City
Inner suburbs
Bus Transit
Car City

Car density 1992-2006

A prototype of urban analysis:
Carless households
Modes by fabrics and groups

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A Prototype
New alternatives, goals and decisions
Finger Model 1993

Renovation of the centre and the neighbourhoods

An alternative to car city development

(Local limitations of the car city development had failed)
The Centre, the Walking City and the fingers of the Transit City (orange colour) have the major role in sustainable urban development.

The fingers balance the growth and development of the Car City (yellow colour).
A Prototype
New implementations
Walking City

New element:
Network of old alleys (10km) from parking to pedestrians
A Prototype
New implementations
Walking City

New elements:
2000 housing units with
good courtyards and
reduced parking, good
public spaces
A Prototype
New implementations
Transit City

New elements:

Renovation of the neighbourhoods,

Supplementary housing projects
A Prototype
New implementations
Transit City

New element:
TOD - a finger of 3800 inh
A Prototype
New implementations
Transit City

New element:
TOD: 1300 inh

Diversity of housing units

Square
bus stop

Shop

Bus-bridge

bus stop

bus stop

bus stop
A Prototype
New implementations
Transit City

New elements:
Bus street, bus bridge
A Prototype
New implementations
Transit City

New elements:
Active bus use
A Prototype
New implementations
Transit City

New elements:

Steet of Islands
TOD 8000 inh
Symbiosis with car city
fabric 6000 inh
A Prototype
New implementations
Transit City
Street of Islands
Landscape street
Active travel and slow driving
A Prototype
New implementations
Transit City
TOD 8000 inh
A Prototype
New implementations
Transit City

New elements:
Compact small pedestrian centre,
New public spaces

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Symbiosis of Transit- and Car City fabrics:

- Bus-oriented neighbourhood
  - 8000 inh

- Car City fabric
  - 6000 inh

A Prototype
New implementations
Transit City

District of Islands
A Prototype
New implementations
Transit City

Alt 0+ / Car City
Alt 1 / Transit City

Symbiosis of Transit- and Car City fabrics:

50 % reduction of costs and gas house emissions of transportation in 50 years

District of Islands

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A Prototype
New implementations
CBD / Pedestrian centre

Combination of Walking-Transit- and Car City Fabrics

Pedestrian street
Bus street
Shared street
Underground parking
Drive into parking
Parking street
Parking garages

3000 parking spaces
250 m

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A Prototype
New implementations
CBD / Pedestrian centre

Winter City: underground shopping corridors, parking spaces for 1300 cars, easy access
A Prototype
Conflicting - negative - mainstream
Car City

The investments in the Car City fabric are still huge and the fabric is still growing. This growth is not sustainable.
Dynamics of urban development
Implementation / Fields of choices

Kuopio-Model has been oriented towards sustainable alternatives

source: draft 27.11.2002 / L.Kosonen
Main Features of the Model

Prototype – Kuopio Model

Applications and UF -project

Paradigm Shift
KaRa - A national network of professionals of six cities and several research institutes - has used the model since 2006.

source: KaRa-Syke
The model is tested in Stockholm.
34 Finnish cities have been analysed with the same model by SYKE

source: UZ-Urban Zone Syke 2011
Applications
Urban Zone 2011

source: UZ-Urban Zone Syke 2011
<table>
<thead>
<tr>
<th>Cities, towns and regions</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki</td>
<td>(19)</td>
</tr>
<tr>
<td>Tampere and Turku</td>
<td>(25)</td>
</tr>
<tr>
<td>Oulu, Jyväskylä, Kuopio and Lahti</td>
<td>(32)</td>
</tr>
<tr>
<td>45 000 - 80 000 inh regions</td>
<td>(44)</td>
</tr>
<tr>
<td>20 000 - 45 000 inh regions</td>
<td>(104)</td>
</tr>
<tr>
<td>&lt; 20 000 inh regions</td>
<td>(176)</td>
</tr>
</tbody>
</table>
UF project
Four Cities 1975
Transit Cities
UF project
Four Cities 1990
Car- and Transit Cities

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UF project

Four Cities 2005

Car- Transit- and Walking Cities

Car- Transit- and Walking City
Jyväskylä 2005
UF Urban Fabrics

Car- Transit- and Walking City
Kuopio 2005
UF Urban Fabrics

Car- Transit- and Walking City
Lahti 2005
UF Urban Fabrics

Car- Transit- and Walking City
Oulu 2005
UF Urban Fabrics

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Analysis of Public Spaces
Transit city 2012

Car-Transit and Walking City

Car-Transit and Walking City

Car-Transit and Walking City

Car-Transit and Walking City

Car-Transit and Walking City

Car-Transit and Walking City

Car-Transit and Walking City
Test and Development of Methods
Urban Zone and Urban Fabrics

Kuopio 2005
UF Urban Fabrics

source: UZ-Urban Zone Syke 2011

13.8.2012 UF Leo Kosonen
Test and Development of Methods
Urban Zone and Urban Fabrics

Kuopio 2005
UF Urban Fabrics

Draft 09/08/2012 / LK

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Assessment of the Strategies and Plans
Case Study Cities 2030

Assessment will be based on studies of the theories and challenges at national and international levels (CUSP)

Fig. 5.2. Principles of public transport planning

Source: Barton et al. (55), p. 124
Main Features of the Model

Prototype – Kuopio Model

Applications and UF-project

Paradigm Shift
Existence of three city types is evident
Existence of three city types is evident

Car density of several countries since 300 cars /1000 inh

Existence of fabrics and zones is evident

Combination of the fabrics of the Walking- and the Transit City

Walking- Transit- and Car City as stages of development
Existence of three city types is evident

**SUSTAINABLE INNER ZONES:**
The urban fabric of diversity and alternatives – one car is enough
- the Inner City (the Walking City)
- the suburbs with good public transport (the Transit City and parts of the Car City)

**CAR DEPENDENT ZONE:**
The urban fabric of only one option - Car dependent parts of the Car City – two or more cars

source: draft 24.9.2007 / L.Kosonen

18.10.2012
Existence of three city types is evident

**SUSTAINABLE INNER ZONES:**
The urban fabric of diversity and alternatives – one car is enough
- the Inner City (the Walking City)
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**CAR DEPENDENT ZONE:**
The urban fabric of only one option - Car dependent parts of the Car City – two or more cars

One car less
The need for new main categories is evident
Main categories of the Modern City need to be replaced.
Need for Paradigm Shifts are evident

Sustainable and Healthy City

Balance of Three Fabrics

Walking- Transit- and Car City

Modern City

Traditional City

The idea of the Modern City is not valid any more

- Living (Housing areas)
- Working (Working areas)
- Moving about (traffic)
- Cultivating the body and mind (Recreational areas)
## Kuopio

### Healthy objectives

28.8.2006 / Leo Kosonen

<table>
<thead>
<tr>
<th>Inner City / Walking City</th>
<th>Urban fingers / Transit City</th>
<th>Urban sprawl / Car City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>• opportunity for healthy exercise</strong></td>
<td>good</td>
<td>excellent</td>
</tr>
<tr>
<td><strong>• social cohesion</strong></td>
<td>fair</td>
<td>fair</td>
</tr>
<tr>
<td><strong>• equity</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>• access to employment and facilities</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td><strong>• road safety</strong></td>
<td>fair</td>
<td>good</td>
</tr>
<tr>
<td><strong>• an attractive environment</strong></td>
<td>good</td>
<td>good</td>
</tr>
<tr>
<td>acceptable noise levels</td>
<td>fair</td>
<td>good</td>
</tr>
<tr>
<td>good air quality</td>
<td>fair</td>
<td>good</td>
</tr>
<tr>
<td><strong>• climate stability.</strong></td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

**source: draft 28.8.2006 / L.Kosonen**
This netbook is a tool of compilation, documentation and communication of the project. Present pages are preliminary drafts, including notes, drafts and documents, which are mainly in Finnish. The pages will be written in English before June 2013 and the book will be completed before December 2013. The pages are written and maintained by Leo Kosonen, leo.kosonen@urbanfabrics.fi.

http://www.urbanfabrics.fi/