Research on How to diversify microrayon

A pattern language for user control facilitating urban design in large postwar estates.
The case of Pļavnieki, Rīga

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09/07/2013 P5 A.Feltins
Double Fascination

- Microrayon
  - Large post-war housing estate
  - Lived space

- Design method for regeneration

- Knowledge based design:
  - Kinds of knowledge
  - Use in design
  - Precedents
  - Transfer

- To imagine difference taking into the account many constraints
Imanta
1965-1975
10644 /49,698 inh.
(2010)
49 ha/900 ha

Plavnieki
1976-1991
11119 res/48,176 res
(2010)
57/298 ha
Microrayon
Structure of the report

1 Understanding problem
2 Urban renewal and regeneration
3 Understanding theory
4 Understanding of the user
5 Understanding what was built
6 Diagnosis
7 Pattern language
8 Design diagrams
Pattern language

So, the real work of any process of design lies in this task of making up the language, from which you can later generate the one particular design. (...) The individual buildings which you make, will live, or not, according to the depth and wholeness of the language which you use to make them with. But of course, once you have it, this language is general. If it has the power to make a single building live, it can be used a thousand times, to make a thousand buildings live.

User control

• Neighbourhood: a tool for user control
• an environmental variable (de Jong, 2012)
• evolving and changing (Lynch, 1981)
• value for its users
• subject to path dependencies and sudden change
• no holistic picture and exact predictions possible
Project goal

to design transformations, with a programmatic requirement of re-distributing control of living environment to make it safe, responsibly controlled, and congruent with needs of changing users.
Project goal

to diversify the residential environment of the microrayons, to allow user control to evolve in the future context

• Why
  – inquiry of the user

• How
  – morphological,
    structural, functional

• What
  – User control variables,
    morphology

Design study

(de Jong, 2012)
Problems of the microrayons

• Multiple problems: Structural, spatial, internal social, financial, management and organizational
• Mutually reinforcing character
• Emphasis on residential environment and spatial problems
Urban regeneration

- Physical renewal
- Residential environment
- Broader aims through morphological, structural and functional diversification

(Saskanas centrs, 2013)
Urban regeneration

- La Duchere
- Marzahn
- Dutch examples
- Morphological, structural and functional diversification

Urban regeneration

Inception 1960
- The Netherlands
- Germany
- Latvia

Early use 1970
- France
- The Netherlands
- Germany
- Latvia

Early Problems 1980
- France
- The Netherlands
- Germany
- Latvia

Early Renewal 1990
- France
- The Netherlands
- Germany
- Latvia

Regeneration 2000
- France
- The Netherlands
- Germany
- Latvia

Present 2016
- France
- The Netherlands
- Germany
- Latvia

Future 2020
- France
- The Netherlands
- Germany
- Latvia

Urban renewal policies must be better-linked to other social innovation policies, and they must better consider the resident practices and experiences.

Understanding theory

- How residential environment facilitate user control?
- Literature analysis
- Form-operation-performance
- Design by analogy

(Tzonis, 1990)
Understanding theory

City Form → Complex artefact

Performances → Operation → Form (morphology)

Consensus
External control
Co-existence
Spatial separation
Temporal separation
Territory
Communication systems
Control system and variations

Congruence
Responsibility
Certainty
Consensus
External control
Co-existence
Spatial separation
Temporal separation
Territory
Communication systems
Control system and variations

Built environment → Defensible Space

Form → Operation → Performance

Size of the units
Contain other spaces

Shape
Positive space
L-shaped inner corner

Routine
Circulation
Stay outdoors
Social contact

Territoriality
Natural surveillance
Image
Milieu

(Lynch, 1981)

Built environment → Complex artefact

Form → Operation → Performance

Territory
Edge (boundary)
Hearth
Spatial relation with neighbours

Territorial behaviour
Defence
Rivalry

Support of spatial needs
Of individual and group
security
identity
stimulation

Built environment → Complex artefact

Performance → Operation → Form

Sense of responsibility
Personal involvement
Recognizable residents and strangers

Visibility and clarity
Visibility of semi-public areas from inside
Visibility of circulation areas from outside

Perceived/actual presence of people
land-use
characteristics of routes
scale
spatial organization of public and private areas
Public lighting

Accessibility
Accessible for residents and strangers

Type of entrance
Type of access
Number of access

(Lawson, 2005)

(Newman, 1978)

(Voordt and Wegen, 1988)
Performances \(\rightarrow\) variables

- Control quality in relation to values (Lynch): congruence, responsibility and certainty
- Territory and territorial behavior (Lawson)
- Defensible space (Newman)
4. Understanding of the user

- How users evaluate control of their residential environment?
- Inquiry (Zeisel, 1984): direct and indirect observation
- focused interviews and behavioural traces
- Seven focused interviews in two cases
Fieldwork maps
“elephant paths”
Parking patterns
Social spaces
Places of weak controls
Planted trees
Fences, self-made barriers
Coded interviews
Coding:
Causes of control problems
Form, operation and performance
Performances → misfits

<table>
<thead>
<tr>
<th>Performances</th>
<th>Operations</th>
<th>Form (morphology)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains adjective or judgement</td>
<td>Contains verb or derivation from</td>
<td>Contains noun</td>
</tr>
<tr>
<td>1 careless attitude</td>
<td>1 walks with the dogs, through rubbish from the window</td>
<td>1 paths and spaces to walk, apartment and outside</td>
</tr>
<tr>
<td>2 traffic not safe</td>
<td>2 drive (like crazy) congested traffic</td>
<td>2 roads</td>
</tr>
<tr>
<td>3 feelings of insecurity</td>
<td>3 presence of (bad people, Russians, criminals, homeless and drunk, offence in the staircase, )</td>
<td>3 spaces</td>
</tr>
<tr>
<td>4 vehicular police control not effective</td>
<td>4 drive on roads only</td>
<td>4 roads and their relations to the spaces</td>
</tr>
<tr>
<td>5 Lack of safe space</td>
<td>5 people not present, illumination</td>
<td>5 spaces, roads, places</td>
</tr>
<tr>
<td>6 environment is not legible</td>
<td>6 go everywhere</td>
<td>6 houses and their position</td>
</tr>
<tr>
<td>7 Lack of clarity of situation</td>
<td>7 presence of unknown people</td>
<td>7 Spaces, places</td>
</tr>
<tr>
<td>8 street is anonymous</td>
<td>8 presence of unknown people</td>
<td>8 spaces, places</td>
</tr>
</tbody>
</table>
Understanding what was built

(Habraken, 1988)
Understanding what was built

(According to Newman, 1978)
Level of the district
Level of the microrayon
Level of the building ensemble
Neighbourhood boundary

Field
A kind of vacancy

Waterways
A kind of entrances
Neighbourhood boundary
Neighbourhood boundary
Common

Scale

Supermarket

School

Blocks

Common

Bus
Common

Supermarket
Blocks
Common
S-bahn
Common
Research conclusions

- Causal or Conditional?
- Function or content?
- Research and study?
- Evaluated or designed

Fig. 4 Intention \(\supset\) function \(\supset\) structure \(\supset\) form \(\supset\) content

Fig. 5 Dynamic equivalents

\(F(M) - O - P\)

(de Jong, 2012)

(Guney, 2012)

(Stolk, 2012)
6. Diagnosis

- How control variables are distributed in Pļavnieki?
- Alexander, C. (1975) «masterplan shows what is right for the future, diagnosis shows what is wrong in the present»
- Revised theory: formulation of control variables (de Jong 2012)

(Alexander, 1975)


residential environment has:
  - quality of control
  - wasteland...oppression
  - something in the middle is desirable

  territory
  - simple...complex
  - either values are appropriate

  defensible space
  - stigmatizing...enhancing
  - enhancing is desirable
Pļavnieki
11,119 inhabitants
Area 57 ha
Built 1976–1989
Representative for latest microrayons
Some social problems surfaced recently
Diagnosis

- Landuse plan as a base
- Streetscape
- Pedestrian realms
- Parking problem
- Divided ownership problem
Diagnosis: Streets
Diagnosis: Streets
Diagnosis: Pedestrian realms
Pedestrian realms
Parking problem
Divided ownership problem
Pattern language

- Patterns as an exact set of variables
- Context, problems, configuration
- Variables $\rightarrow$ Interlocking sets
- Road to unambiguity
- Research $\rightarrow$ patterns
- Patterns $\rightarrow$ design
- Design $\rightarrow$ patterns
Structure of the language

Residential environment has:
- Quality of control
- Wasteland...oppression
- Something in the middle is desirable
- Territory
- Simple...complex
- Either values are appropriate
- Defensible space
- Stigmatizing...enhancing
- Enhancing is desirable

Diagram:
- Social space
  - Sunny place
  - 3+ activities in one place
  - Place hidden from windows
- Defensible space
  - Explicit presence
  - Paths between goals
  - Symmetrical street
  - Stroll trajectories
- Circulation realms
  - Neighbourhood transition
  - Small parking lots
  - Star nodes
- Urban context
  - Global-local place
- Shape of open space
  - Long
  - Half-closed corners
- Secondary territories
  - Building ensemble
  - Common interest shared problems
- Governance
  - Wasteland

Date: 09/07/2013
Road to unambiguity

(de Jong, Rosemann n.d.)
Narratives for patterns

- Social patterns: «human dimension», quality of use
- Diagnosis patterns: resultant properties, control of space
- Design principles: «rules of thumb» for building, site layout, street scape
- Assymetrical relationship
**Pattern internal structure**

Pattern name as a misfit
Pattern type
Double statement
Theoretical reflection

<table>
<thead>
<tr>
<th>Physical structure</th>
<th>Interface</th>
<th>Territorial structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pattern name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pattern type</td>
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Relevance to the problem of user control

- **Problem**
  - Context statement $\rightarrow$ Conflicting forces $\rightarrow$ Configuration

- **Solution**
  - Context statement $\rightarrow$ Conflicting forces $\rightarrow$ Configuration

Research references

- Primary data about site
- Theoretical reflections
- Precedents
Social patterns
Paths between goals; global local place; 3+ activities in one place; sunny place; common interest shared problems; stroll trajectories

Movement networks → inequality in use → paths

Lynch 1961
Portugali 2011
Social patterns

Paths between goals; global local place; 3+ activities in one place; sunny place; common interest shared problems; stroll trajectories

Movement networks → inequality in use → paths
Diagnosis patterns

long sightlines; half-closed corners, wasteland, place hidden from windows, explicit presence

Long sightlines:
Non-convex spaces, Compositional approach → visual cues → pedestrian shortcuts
Design principles

Free standing building; building ensemble; small parking lots; symmetrical streets; star nodes; neighbourhood transition

These patterns are revised in design.

Spatial context → territoriality → edge and the hearth
What design interventions are possible to enhance performance of user control in Pļavnieki?

- Diagrams: three story lines linking patterns
- Principles: generic solutions
- Projects: specific responses to multiple problems
Diagrams

“thick edge”

“neighbourhood transition”

“connected pedestrian realms”
Principles

“thick edge”

Possible interventions to facilitate territoriality

“neighbourhood transition”

Planning tools in response to the urban context

“connected pedestrian realms”

Possibilities to restructure pedestrian realm
Masterplan
Seven projects

1. School site
2. Courts of J. Grestes street
3. New local centrality
4. Suburban edge
5. J. Grestes street
6. Tīnužu courts
7. Tīnužu entrance
Thick edge
Thick edge
Thick edge
Thick edge
Symbolic boundaries
**School site**

Principle: thick edge

Patterns: wastelands, long sightlines, 3+ activities in one place; stroll trajectories

Design: building ensemble, symmetrical street,
School site

Before and after
School site

edges
J. Grestes street courtyards

Principle: thick edge

Patterns: wastelands, explicit presence, sunny place

Design: building ensemble, symmetrical street
J. Grestes street courtyards

Before and after
Building ensemble
Neighbourhood transition
Neighbourhood transition
Urban edge. New local centrality

Principle: neighbourhood transition

Patterns: global-local place, paths between goals,

Design: building ensemble, symmetrical street
Urban edge. New local centrality

Principle: neighbourhood transition

Patterns: global-local place, paths between goals,

Design: symmetrical street, building ensemble
Suburban edge

Principle: neighbourhood transition

Patterns: neighbourhood transition, explicit presence

Design:
neighbourhood transition, building ensemble,
Suburban edge

Reference: Ballersdorf, Potsdam, DE
Connected pedestrian realms
Connected pedestrian realms
Connected pedestrian realms
Connected pedestrian realms
Connected pedestrian realms
Connected pedestrian realms
Connected pedestrian realms
**J. Grestes street**

Principle: connected pedestrian realms

Patterns: paths between goals,

Design:
Symmetrical street
J. Grestes street

Principle: connected pedestrian realms

Patterns: paths between goals,

Design:
Symmetrical street
Tīnužu courts

Principle: connected pedestrian realms and thick edge

Patterns: paths between goals, wastelands

Design:
Small parking lots
Tīnužu street entrance

Principle: connected pedestrian realms, neighbourhood transition

Patterns: paths between goals, neighbourhood transition

Design:
Building ensemble
Reflection

- Patterns proved to be useful.
- Drawing is a limitation and constraint.
- Great potential for communication: researchers, policy makers, residents.
The end.

THANK YOU!