

# Change of the Urban Periphery: Indicators of Restructuring Existing Spatial Structures

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The urban development in the last fifty years in Western Europe is characterized by the period of postwar growth, which has provoked the sub- and disurbanisation. The present agglomeration is the result of these processes. This newly developed urban creation is now consolidating and at the same time a process of renewal has begun. This become visible in the increasing need of change, which for example is represented in the growing rate of fallows, costs of renewal for the owners of the buildings but also shown in a more and more small scale and differentiating change of the social structure. In the building investment balance-sheets of Switzerland, in 1989 the costs for urban renewal has forced up the costs for new construction (Wüest and others 1990). But most of these renewal projects take a planless course, in the way for example of facade renovations, modernisations of the ground plans and therefore only short time superficial improvement is produced. Still the demolition rate is less than 0.5 per mille (Wüest and others 1990). And still the urban sprawl of the agglomeration is faster than the population growth. The existing potentials to limit the growth were used inadequately.

For the understanding of the growth processes and the slowly starting restructuring of «the urban» there has to be developed a deeper knowledge of the reasons. The period of urban growth was a result of the fordism, which had its dominant period between 1950 and 1975. The need for land for industrial use in the booming branches and residential areas for the employees exploded the borders of the traditional cities. The urban development moved more and more into the environment, the periphery, deep into the urban hinterland. The following period of structural

change from fordism to a system of flexible accumulation, again led to a changing organisation of work. A growing need for office space is also served with evacuation of town center premises and establishment of new floor space uses in the periphery. The arised urban conglomerate, the agglomeration, is distinguished more and more by the specialized fragmentation of the built and economical structures. Next to each other you find shopping malls, industrial and residential areas, fragments of recreation zones and a space-intensive labyrinth of highways, streets and rails (cf. Krätke 1991)

In the period of consolidation of our towns, the spatial growth of the agglomerations could not be decelerated as much as possible with the existing planning strategies and instruments. This project started on the thesis, that the lack of success of the ongoing planning is last but not least based on the insufficient interpretation of the urban change. Important processes of change run independent of planning interventions (e.g. through the change of economical structures, life-style or technologies). Regarding particularly the areas built up in the period between 1970 and 1990, one could recognize distinct dimensions of change in the existing urban structure. There seems to be different renewal speeds and percentages characterizing the urban change. It could be supposed, that there are territories with higher and lower stability for the change of their built and spatial structures. Therefore a successful planning has to exploit the potentials for urban change.

### ***Goals***

With this project a contribution to the knowledge of urban change is supposed to be achieved. The focus of the field studies is urban stucture from 1940 to 1970. The need for change in these structures could not be compared with the traditional renewal of inner city areas in the 1970s and 1980s. A high percentage of the built structure from this postwar period already (after a short period of time) shows construction defects, an overcapacitance in some fields of infrastructure, etc. The urban change should not only aim at keeping the values in the existing structures, but also, providing new ideas for the urban future. An ongoing search for new identities on the local and communal scale simultaneously leed to regional and global effects for the society and the economical structures, which requires an advance estimation of possible development potentials.

In order to be able to predict the future change, certain factors like the prices of land, owner structure, age structure of the buildings has to be recognized. Through these limited number of indicators, potentials for urban change are to be located immediately. In this survey the impact of single indicators as well as the interaction between different indicators has to be considered.

As a basis for the practical use of the knowledge about the urban change, the application and use of the indicators of urban change as a part of existing planning instruments is to be evaluated.

### ***Relevance for planning knowledge***

With such an understanding of urban change, not only a single desirable condition could be characterized, but also strategies for the process to reach this situation could be set. The need of research was demonstrated in the research project SYNOIKOS (Baccini und Oswald 1998) at the ETH Zurich. The chapter of "Changing habits - a guide to the restructuring scenario for the activity to reside" (Kytzia, Friedrich, v. Fischer 1998) shows potentials, which resulted in the long term process of restructuring. The evidence have shown, that it is possible to save energy of 35% per person in 2020, compared to the maintenance costs of the buildings in 1990, without an economical loss for the tenant and the owner. In order to achieve this energy-saving, measures have to be taken. New structural relations in different scales are to compensate for the economical loss of tenants and owners. The project does not propose solutions, but tries to show strategies in form of scenarios and "rules of the game" that structure the transformation process to a sustainable urban future. This enable more flexibility according to the alteration of the political, economical and social preconditions.

Considering the restructuring process not only as a combination of small scale and independent implementation of the redevelopment projects, to keep the value of the existing buildings, but also as a process, which restructures in the next two generations about 70% of the existing buildings. According to this process, the total urban network and the consumption of resources is mainly influenced. We have to improve an empirical and methodological fundamental knowledge for the planning practice about the change of existing urban structures. The existing knowledge of indicators, which concentrates on the renewal of the traditional city (nucleus of the city and

"Gründerzeitviertel") and urban models to explain city development are consulted as basic information (see Jacobs 1977, Vernon 1966, Nijkamp/Schubert 1965). The elaborate and descriptive analysis or complex mathematical models often explain only individual aspects of the town development or the models are not operational for the planning practice. The agglomeration as urban network is influenced by global effects as well as by a multiplicity of specific decisions and spatial conditions. For that reason, a quality oriented analysis and an evaluation is selected to find a praxis oriented restructuring strategy.

Present planning instruments consider the process of urban change only inadequately. The approach with indicators could be a first step of a new definition and extension of existing instruments, which give more free space for future development and is more flexible to react to the changing conditions.

### ***Research methodology***

Processes of change could be shown through the land (policies and prices), buildings, infrastructures, patterns of urban use, different types of owners and the functional-spatial relations. With this hypothesis, this project is organised in four methodological steps:

**1. step:** A selection of indicators is chosen to describe the processes presented above. The methods are literature research and interviews with the experts.

**2. step:** On the basis of case studies of urban change in Zurich, analysis are made with the help of the indicators (or urban change). A typology of the relevant survey territories will be proposed according to the land-use structure, the location and the socio-economic structure as a basis for the indicator analysis. In comparison with the theoretical outcome of the first step with a qualitative estimation of the significance and the interaction of the indicators, and their relevance for urban change, are studied. The data basis is built on historical maps, digitalized spatial data from the census and the building statistics concerning renovation periods, social structure, age of the buildings and commuter network patterns.

**3. step:** Possible development strategies for the reconstruction of the urban network are designed for the case studies.

**4. step:** Existing planning instruments are questioned whether they are appropriate for handling urban change or to support the development strategies. In order to support the existing planning instruments, with this new approach, interconnecting states are observed.

### **State of research**

The project extends over a period of three years. It is divided in four working periods (registration of the PhD project at the ETH Zürich, Department of Architecture in October 1998) In the first period the disciplinary topics are evaluated. The case study research in Zurich is going to be prepared and implemented. The preparation and realisation of the second case study in Stuttgart will be based on the first one. The elaboration and finishing of the results from the Zurich example, will be part of the second period. The third period is concentrated on the elaboration of the different parts of the project and the design of the strategies. In the last phase the selected strategies for urban development are examined according to the existing planning instruments. Half of this period is reserved to produce the thesis.

Because of the short period of work until now, there are no concrete results. A first typological grouping of areas in Zurich is started. In the topic of land and building economics, the literature research is nearly finished and a group of indicators is specified. At the presentation in July, the first results will be displayed.

The advisor of this work is Prof. Franz Oswald, Chair of architecture and urban design on the ORL-Institute, ETH-Zurich the Co-advisor is Prof. Dr. Johann Jessen, University of Stuttgart, Institute for urban design.

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