

The Gap Between Knowledge and Action: Obstacles, Restraints and Deficits During the Execution of Refurbishments

Tobias Woll (towo@fct.unl.pt), IET, Faculty of Science and Technology (FCT), New University of Lisbon (UNL)

Abstract

This article outlines the initial draft of a PhD project which investigates refurbishment or rehabilitation projects in two German cities. The study focuses on obstacles, restraints and deficits as well as factors of success, which can be identified during the execution of the refurbishments. Moreover the study examines the process of the refurbishment itself, the general conditions under which the refurbishments are being executed as well as the implementation of sustainability criteria. First the article gives a short summary of the theoretical considerations of the study. In this respect it shortly outlines the global conditions of urban development and conducting challenges for cities in the 21st century, guiding principles of a sustainable urban development as well as goals of sustainable refurbishments. Finally the article shortly describes the case studies and presents the initial results of the empirical work.

Introduction

Aim of this article is the presentation of the initial draft of a PhD project which investigates the processes of refurbishment or rehabilitation projects in two German cities. Four residential areas in the cities of Ludwigshafen and Cologne were analysed, which have been already refurbished or are being refurbished at present. Of particular interest are obstacles, restraints, deficits and factors of success, which can be identified during the execution of the refurbishments as well as the process of refurbishment itself. Moreover the implementation of sustainability criteria was examined. The project is supervised by Prof. Dr. Bernd Hamm of the Department for Sociology of Settlement, Environment and Planning of the University of Trier.

Theoretical considerations

Global conditions of urban development

Urban development is crucially affected by global processes. The general global conditions of urban development can be described with the following keywords:

- Population growth in the less developed countries. As a result poverty as well as inner migration and international migration arise.
- Population decrease and so called "shrinking cities" in many regions of the industrial countries.
- Global-economic restructuring (globalisation); changes in production modes and work organisation (replacement of the Fordist production mode).

All these issues have impacts on the development of cities and urban spaces. Urban development is never autonomous, it is always affected by macro-economic processes. The transformation of industrial society also causes changes of the spatial organisation and spatial structure of society. Cities and urban spaces are changing. The modification of macro-economic conditions is influencing the way people live and work as well as the image of cities and residential areas. For example: If many of the major factories shut down or move abroad, unemployment will arise and residential areas could change dramatically. Urban spaces affected by these problems should be stabilised and redeveloped. Refurbishments are, roughly speaking, a reaction of the change of global conditions of urban development and the spatial implications of that process. Considering that, the study integrates approaches of urban sociology with those of industrial sociology.

Challenges for cities in the 21st century

According to the generalised global conditions of urban development, the following challenges for cities and urban spaces can be stated:

- *Progressive urbanisation; increase in land-consumption; increase in the traffic volume:* despite population decrease and shrinking cities in many regions and cities of the industrial countries in recent years, progressive urbanisation of land in the outskirts of cities is the predominant pattern of urban development in industrial countries.
- *Ecological capacity of cities:* increase in energy consumption, increase in material consumption, increase of land consumption and waste accumulation.
- *Social-economic capacity of cities:* unemployment, increasing poverty, ageing of society, precarious financial situation of local authorities, governability of cities.

Sustainable urban development

The sketched global trends and challenges show the sustainability deficits in the area of urban development. The current development of cities and urban areas is not sustainable. Experts agree that there is a need to work against these negative trends. Therefore various guiding principles and goals of a sustainable urban development have emerged in the political and scientific debate on sustainability in urban areas. These guiding principles and goals of a sustainable urban development can be summarised as follows:

- *Reduction of resource consumption:* adequate measures are e.g. reducing the preparation of new land for building, the re-use of existing buildings, the re-use of waste land and the re-use of building materials and the optimisation of domestic technical installations.
- *Changes of spatial structures:* urban density and functional mix between habitation, work and leisure time.
- *Improvement of socio-economic conditions:* heterogeneous social structures in residential areas; flexible floor plans; consideration of the needs of families and elderly people in spatial planning; integration of immigrants and the protection of green space.
- *Improvement of spatial planning:* spatial planning, which integrates all relevant departments of the municipality; improved civic participation.

The debate on sustainable refurbishments

The need of refurbishments results particularly from the outlined impacts and challenges for cities as well as the mentioned sustainability deficits in the field of construction and habitation.

The first refurbishments in Germany began in the 1960s after finishing the huge residential areas of social housing and after a revision of building law. The refurbishments started with the aim to restore, modify or adapt the existing buildings in the city centres. These functional refurbishments were undertaken irrespective of residents' needs and notwithstanding constructional and social structures. The initial aim was to clear space for traffic and commerce. Many buildings were demolished and a large proportion of historical buildings were lost. In the 1980s the redevelopment of the city centres began and is almost finished yet. Presently the residential areas dating from the 1950s and 1960s are in need of refurbishment. The houses and dwellings were constructed very quickly and under the conditions of scarce building material to meet the urgent need for dwellings. Since that time the buildings have deteriorated and there has been little refurbishment in the residential areas. The present problems of these residential areas are construction defects and simple ageing of the buildings as well as social nuisances. Most of the residents left in these buildings are elderly people since many moved into the buildings in the 1950s, 1960s and 1970s. Social structure and infrastructure, for example local supply of basic necessities, has decreased due to ageing.

Presently the central question is about refurbishments and redevelopment measures in the face of global-economic restructuring, decreasing population, ageing society and socially disadvantaged districts. In response, Germany has established many political programmes, for example, "Stadtumbau Ost" and "Stadtumbau West", which are programmes for urban redevelopment in Western and Eastern Germany. Another programme is "Soziale Stadt" which is a redevelopment

programme for disadvantaged districts. Within those programmes refurbishment measures are of high priority and extremely relevant.

Sustainable refurbishments will integrate ecological, economical and social aspects. Sustainable refurbishments are seen as a chance to reduce energy consumption and to lower CO₂-emissions in the area of construction and housing. Furthermore sustainable refurbishment measures can reduce segregation and social-spatial polarisation. Another main objective of sustainable refurbishments is to strengthen the attractiveness of the city and inner residential areas so that out-migration can be stopped or reduced. If the inner districts are attractive, people will stay in the city and decide to live in the existing buildings. With this stability, the preparation of new land for building can be reduced. Refurbishments can strengthen the city as a site for living and reduce vacancies in buildings and dwellings.

The main goals of sustainable refurbishments can be summarised as follows:

- Energy saving and lowering of CO₂-emissions by means of heat insulation, optimisation of heating installation, new forms of energy supplies or the use of modern sanitary engineering.
- Improvement of the attractiveness of residential areas.
- Functional mix between habitation, work and leisure facilities.
- Prevention of vacancy.
- Improvement of self-esteem of the residents.
- Promotion of new forms of habitation, such as assisted living, disabled entrances/entrances without barriers, co-habitation of young and old and modifications of floor plans.
- Heterogeneous social structures; reduction of out-migration.
- Healthy habitation (e.g. noise protection; removal of noxious building materials, like asbestos, lacquer, paint or synthetic materials).
- Conservation of historical housing stock.
- Economic efficiency.
- Job Creation (capital expenditures in the existing housing stock are expected to support the creation of new jobs in the field of the crisis-ridden building construction industry and in the field of the craft).

Goals of the study

As already mentioned, the development in the area of construction and habitation is not sustainable. There is a broad consensus on the negative trends in the political and scientific community as well as on the necessity to work against these negative trends. The sketched guiding principles of sustainable urban development can be found in various municipal guidelines, political declarations of intent and scientific studies. The scientific and political community agrees on these guidelines. In principle they know how to develop cities more sustainable. However, the negative trends are predominant. A gap between knowledge and action can be identified. The study is dealing with that gap. Goal of the study is to identify deficits, restraints, obstacles and barriers that can be identified during the execution of refurbishment measures. Furthermore the study wants to determine which structural, institutional and political conditions motivate and support successful refurbishment initiatives.

Case studies

Four case studies have been carried out in the study:

- (1) Ludwigshafen Brunckviertel (owned by Luwoge, housing company of BASF).
- (2) Ludwigshafen Ebertsiedlung (owned by GAG, Ludwigshafen, municipal housing company).
- (3) Cologne Zollstock; refurbishment of a residential area exclusively occupied by elderly people (owned by Kölner Gartensiedlung e.G., private housing company).
- (4) Cologne Vingst (owned by GAG, Köln, municipal housing company).

The examined cases are residential areas built in the 1920s, 1950s and 1970s. The refurbishments in the four cases started because of the following problems:

- construction defects, deteriorating of buildings and simple ageing of the buildings.
- vacancies as a result of out-migration of inhabitants.
- social nuisances, social problems and social downgrading.
- energy intensive heating, such as oil stoves or coal burning stoves.

Ludwigshafen is a traditional industrial site in Western Germany. The city, which has about 167.000 inhabitants, is the headquarters of the BASF-group, a leading global player in chemical industry. Cologne is the fourth biggest city in Germany and has about one million inhabitants.

The following goals are central in the examined case studies:

- Reducing energy consumption; lowering of CO₂-emissions.
- Removing constructional nuisances.
- Improving of the attractiveness of residential areas.
- Social stabilisation.
- Improving the attractiveness of the habitation environment.

The following survey methods were used to work out the cases: information was obtained through semi-structured interviews and through document analysis.

Initial results

This section presents the initial results of the empirical analysis. The article can not address all suggested goals of sustainable refurbishments, because the review of the case studies is not finished and the results are not finally systematised and structured until now. Therefore the article will focus on four goals of a sustainable urban development:

(1) Energy saving and lowering of CO₂ emissions

The developed case studies show that refurbishments contribute to this goal. The housing companies of all examined cases have taken adequate measures, such as energy optimisation, heat insulation or optimisation of heating installations. The housing companies pointed out, to have significantly improved the energy balance of their buildings.

(2) Improvement of the attractiveness of residential areas and prevention of vacancy

The assessment of this goal is quite difficult, because most of the refurbishments are not finished and such a process (to improve attractiveness and to stop out-migration) takes time before trends can be measured. The future will show in which way the residential areas will redevelop, but the interpretation of the interviews with residents and persons in charge for the refurbishment project indicates that attractive appearance will hold residents in this area. These refurbishments could stabilise residential areas and stop out-migration. Furthermore there is a probability that vacancy can be reduced by refurbishments. This is shown in two cases: After refurbishment all dwellings were rented. In fact there is now an excess of demand for the refurbished dwellings. But in another case, the percent of vacancy was also reduced by demolition of buildings which have fallen into disuse.

(3) Promotion of new forms of habitation

Facing the demographic change – particularly the ageing population – new forms of habitation are needed. Refurbishments are providing an opportunity to realise new forms of habitation, such as disabled entrances or entrances without barriers, in the existing buildings.

But the cases show, that such measures were realised predominantly in new buildings. For example: In one case an old building was knocked down and on the cleared site a new building was constructed, in which new forms of living space for elderly people are available now. The housing company argued that new forms of habitation are easier to do in new buildings. How far the costs for such measures play a decisive role is very speculative. Cost is likely to be a factor.

(4) Conservation of historical housing stock

In one case the high number of demolitions has been criticised by many. The municipality of the city regarded that so many of the old buildings were demolished. They said, that it is not right to characterise this case as an intrinsic refurbishment measure. The municipality regarded that some of the buildings should be preserved regardless of constructional nuisances, bad equipment, unattractive floor plans and high costs for refurbishments.

Which obstacles, restraints and deficits as well as factors of success were found in the study?

Funding is a factor of success as well as a significant obstacle. Two cases show, that the refurbishment process started because of the received funding from communal support programmes. In these cases funding plays a major role in the execution of the refurbishments. That means also, that funding is an effective steering and control instrument of the state or the local authorities to support and to push the realisation of refurbishments. Another case shows that funding just as well can be an obstacle during the execution of the refurbishment measures, especially when funding is inadequate. One housing company receives only 1 Million Euro from the

redevelopment programme "Soziale Stadt". An expert in charge for the refurbishment mentioned, that this amount is at best adequate for smaller projects within the refurbishment process, such as public relation measures. But the amount is not adequate for constructional measures. The housing company has to pay most of the charges for the refurbishment measures. In this respect money and funding can be obstacles.

The Brunckviertel case is a very special case. The housing company Luwoge, owner of the residential area, has to pay any charges for the refurbishment. But Luwoge is a subsidiary company of BASF chemical works and BASF is interested to place its established products for refurbishments, such as insulating windows, special insulation materials and fuel cells, on the international future market for refurbishments. Factor of success in the Brunckviertel case is surely the strong actor Luwoge respective the global player BASF, which have the money and the know how to invest in future technologies and in refurbishment measures.

Other obstacles are:

- Lack of experience with respect to refurbishment of whole residential areas (with up to 1.500 dwellings) and with respect to residents' needs during the execution of the refurbishment process.
- Information deficits regarding the concept of sustainable development.

References

- Coenen, R.; Grunwald, A. (2003), Nachhaltigkeitsprobleme in Deutschland, Analyse und Lösungsstrategien. Reihe Global zukunftsfähige Entwicklung – Perspektiven für Deutschland, Vol. 5, Berlin, Edition Sigma
- Hall, P.; Pfeiffer, U. (2000), Urban 21. Der Expertenbericht zur Zukunft der Städte, Stuttgart, Deutsche Verlags-Anstalt
- Hamm, B.; Neumann, I. (1996), Siedlungs-, Umwelt- und Planungssoziologie. Ökologische Soziologie, Vol. 2, Opladen, Leske und Budrich
- Häußermann, H.; Siebel, W. (1987), Neue Urbanität, Frankfurt am Main, Suhrkamp
- Jörissen, J.; Coenen, R.; Stelzer, V. (2004), Nachhaltigkeitsprobleme im Bereich Wohnen und Bauen und strategische Ansätze zu ihrer Bewältigung, in: Nachrichten – Forschungszentrum Karlsruhe, Vol. 36 (2004), Nr. 4, pp. 198-205
- Krätke, S. (1990), Städte im Umbruch. Städtische Hierarchien und Raumgefüge im Prozess gesellschaftlicher Restrukturierung, in: Borst, R.; Krätke, S.; Mayer, M.; Roth, R.; Schmoll, F. (Eds.): Das neue Gesicht der Städte. Theoretische Ansätze und empirische Befunde aus der internationalen Debatte, Stadtforschung aktuell, Vol. 29, ed. by Hellmut Wollmann und Gerd-Michael Hellstern, Basel/Boston/Berlin, Birkhäuser, pp. 7 – 38
- Projektverbund Nachhaltiges Sanieren im Bestand (2001), Nachhaltiges Sanieren im Bestand – Leitfaden für die Wohnungswirtschaft. Berlin/Darmstadt/Frankfurt am Main/Freiburg
- Schultz; I.; Buchert, M.; Ankele, K.; Fürst, H. (2001), Nachhaltiges Sanieren im Bestand. Ergebnisse eines transdisziplinären Forschungsprojekts. Studentexte des Instituts für sozial-ökologische Forschung, Vol. 10, Frankfurt am Main