

Ralf Bokermann

Adaptation of existing building stock with declining population

1. Abandoned property – a planning task

In many rural regions of Germany the number of inhabitants has dropped continually since the 1990s. The federal states in the eastern part of Germany are particularly affected since the loss of jobs after 1990 led to the outflow of many people. A further decrease in population is expected over the next few decades for structurally weak rural areas (7). A follow up of the declining population is the vacancy of buildings which are not needed anymore. Should the abandoned property be a strain factor for the municipalities in question, the rectification will become a planning task. The following is not to deal with the extensive architectural town planning, how abandoned properties are to be tackled. Instead solutions for multi-storey housing estates which have been developed in eastern federal states are to be pointed out.

Multi-storey housing estates have arisen in the start-up phase after 1950 on the outskirts of many small towns and villages. There are distinct differences between east and west federal states in the existence of multi-storey housing estates. In the west part of Germany multi-storey housing blocks were mainly built in the traditional way of construction. Since about 1960 mainly industrially pre-fabricated building parts have been used in the eastern part of the country. In small towns and larger villages types of this buildings up to six storeys are to be seen.

In the municipalities affected by the outflow of people, vacancies in multi-storey blocks of flats are relatively frequent. For the municipalities the vacancies in the blocks of flats are often associated with continuing costs as the maintenance of communal infrastructure continues. The owners of the blocks of flats – often housing cooperatives – are faced with maintenance costs on a lowest level against no returns.

2. Variants in redevelopment

Communal planning for rectification of structural abandoned property is often applied with multi-storey blocks of flats – not least due to the construction from pre-fabricated building components. Since about 2000 next to complete redevelopment, selective redevelopment is increasingly being exercised. With selective redevelopment, the upper storeys of the buildings concerned are removed. The remaining storeys are provided with roofing and as a rule modernised. How many storeys remain is according to how many flats can be rented out on a long term. The level of modernisation is determined by the expectations of future tenants.

The selective redevelopment offers, if nothing else, the possibility of urban planning design. Therefore streets with standard facade alignment can be redesigned more attractively by various levels and shaping. Through varying numbers of storeys to segmented partitioning to detached houses, a varied residential area can be attained. The quoted planning options can be made clearer due to a varied redevelopment in the village of Langenbach (south of Zwickau/Saxony). Picture 1 shows the type of building block which has been partly redeveloped on the basis of an identical type of building opposite with four storeys.



Picture 1: Building type of the redeveloped blocks of flats in Langenbach.



Picture 2: Block of flats after selective redevelopment and modernisation, designated for rented flats.



Picture 3: Segments redeveloped for use as owner-occupied flats.



Picture 4: Segments redeveloped to one-storey row houses.

A segment of the building was redeveloped to three storeys, re-modernised and can be rented (Pic. 2). A further segment is envisaged for owner-occupied flats (Pic. 3). Due to a further redevelopment of a third segment, several one-storey row houses are available (Pic. 4).

3. Costs of selective redevelopment

Selective redevelopment provides the advantage against newly constructed buildings, that both the communal as well as the present infrastructure on the building site can be further used. Additional land consumption is also avoided.

In a scientific investigation the costs for a reconstruction were determined with 75% of the costs which arise for a demolition with reconstruction at the same place (8). Own research on the investments for a selective redevelopment revealed



Picture 5: Town Leinefelde/Thüringen: Selective redevelopment to detached multi-storey blocks of flats. Source: 5.

considerable variations, according to site, level of modernisation etc. These variations are made clear in published data on arising investments. Two examples are quoted for this. At first the results of a prototype calculation, on the other hand the investments realised for large scale selective redevelopment in the small town of Leinefelde/Thuringia:

Type of investment	A. Prototype calculation Year 2000	B. Town Leinefelde, mid - building phase, 2002 – 2005
1. Redeveloped living area, m ²	1425 m ²	5666 m ²
2. Investments for selective redevelopment + re-roofing, per redeveloped living area, €/m ²	148,- €	229,- €
3. After redevelopment remained living area, m ²	1425 m ²	4192 m ²
4. Investments for remained living area, €/ m ²	395,- €	775,- €

Sources: 3; 5.

The various investments for the selective redevelopment of the examples can be due to the divergent scale. With the investments for modernisation the reasons are more open. A mean standard was accepted with the prototype calculation without elaborate facade design. The urban redevelopment of Leinefelde was designed relatively elaborately. On the other hand, spaces for detached, multi-storey residential blocks were created by a segmentally total redevelopment (comp. Pic. 5). The quoted examples illustrate: through selective redevelopment individual building solutions can be effectuated.

4. Literature (choice)

1. Analysis and Concepts Consulting Ltd, 2004: Low cost removal of unoccupied flats in the uppermost storey of pre- fabricated building parts. Manuscript print, Hamburg.
2. DLKG – German land improvement society, 2014: Village rebuilding: Villages originate in the head! Publishing line, Special volume 06, p. 44 pp. Ed.: DLKG, Munich.
3. Finance- and Business Consulting Dr. Winkler Ltd (Ed.), 2002: Comparative investigation of the economic effects of the storey- and segmentbased redevelopment. Manuscript print, Chemnitz.
4. Koch, E. and Schneider, U. (Ed.), 1997: Recycling of building area by controlled redevelopment. Publishing house Springer, Berlin Heidelberg.
5. Town of Leinefelde – Worbis, 2010: Town rebuilding – The example of Leinefelde. Internet data set www.rkw-kompetenzzentrum.de/.../2005
6. Federal statistical office, 2013: Construction and living. Internet publishing line of the Federal office, Wiesbaden.
7. Federal statistical office, 2010: Population and employment. Internet publishing line of the Federal office, Wiesbaden.
8. Strack, S., 2010: Establishing of an assessment system of redevelopment measures in unoccupied residential buildings. Publishing line Building Research No. 16. Ed.: Institute for building economy, University of Kassel.

