

Study in the Context of the Research Initiative “Zukunft BAU” (“Future Building”)

Summary Report of Research Study "Mikroflex"

Type catalog for the conversion of existing commercial buildings into micro-apartments, prepared for living appropriate for the elderly

Economic structural change, the re-urbanization and the increasing individualization of the society with simultaneous increase of the older population as well as the increase of one-person-households are all factors that increase the demand for affordable housing, especially in urban centers.

Therefore, new strategies for affordable housing in the cities are needed. There is need for small apartments in good urban areas with mixed use at acceptable prices, which are also structurally prepared for (future) living in old age and spatially adaptable.

At the center of the research study funded by the research Initiative “Zukunft Bau” (“Future Building”) of Federal Institute for Research on Building, Urban Affairs and Spatial Development is the question of how vacant office or other commercial buildings can be converted into affordable, urban living space. In this context, it should be pointed out that the buildings in question can be converted for micro-living.

As result of our research, an overarching catalog was created, classifying the commercial vacancy. The focus is on questions of the grid and its suitability for conversion into urban living. At the same time, the interests of old-age living are taken into account.

Commercial and industrial buildings of the postwar period are vacant, in particular office buildings, because their obsolete technical equipment and floor plans no longer meet today's requirements this despite a good inner city location with connection to existing infrastructure.

An obvious solution lies in the conversion of long-term vacant offices to residential spaces, easing the situation on the residential and real estate markets. Long-term vacancy is problematic, even more so with rising demand, as it can have a negative knock-on effect on the surrounding buildings and thus preclude efficient land use, especially for residential purposes. The reduction of vacancies is therefore not only in the interest of the real estate industry and the society as a whole, but also the owner.

On the basis of a market and location analysis, agglomerations were initially determined with the search grid corresponding vacancy. Since the availability of plan data proved to be problematic, objects corresponding to the type grid were also used in the course of a technical

literature search in order to be able to use digital, vectorized plans for the further investigation. The results of this empirical analysis are shown in so called index cards. In addition, typology and structural characteristics were analyzed for office buildings of the 50s to 70s.

Actual statistical analysis also shows that there is no real social trend towards smaller households at the moment, on the other hand there is certainly a growing need for small housing units evolving. Therefore it is essential to consider local conditions in detail. The rededication must also provide sufficient flexibility in floor plans in order to allow for example larger areas and units by merging floor plans.

From the analysis and definitions outlined above, a type catalog for micro-apartments was developed, also taking into account the framework conditions of “ready - prepared for housing suitable for the elderly” for seniors. It turned out that above all the bathroom and the location of the installation and supply shaft are determining factors for the usability of the floor plans.

In a simulation, the type catalog was examined on the basis of grid spacing and room depth, with typical dimensions for office buildings. In two different results, it is shown that the type catalog offers sufficient variability to record the examined combinations of dimensions, also taking into account the increased surface requirements for age- and handicapped-friendly building according “ready- prepared for housing suitable for the elderly” criteria. In addition in a morphology the type catalog is again exemplarily fitted into floor plans of real objects. Here again, the general feasibility with best utilization of the gross floor areas can be further optimized by individual customizations.

The micro-apartment thus presents itself as a central solution, because it can be integrated into the given grid as well as it fulfills a general need for this form of living, regarding the necessity for a specific verification of local circumstances.

Of particular importance is also the inclusion of concerns of the elderly living in the planning of these micro-apartments in order to convert them with a few changes in geriatric homes. On the basis of the common grid types as well as exemplary floor plans it was shown how office buildings can be converted into living space. In this conversion, there are special opportunities for a sustainable district development while satisfying an acute need.