Summary

Analysis of ecological requirements for new residential areas
Potential consequences for the cost and use of structures

- **Ecological requirements and cost –**

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The purpose of the research project should be to make a contribution to the ecological requirement level in the building scheme and to cut the related cost on the basis of the findings made. The rationalization of the building process will also be improved if the research supports a feasible and reasonable implementation of the requirements from the angle of building planning and design.

As a first step under the research project, 23 selected projects were analyzed for the type and frequency of ecological requirements they contained. Based on this stock analysis, the cost implications of the different requirements were studied both at the level of individual measures and also for the cost of the structure and the outdoor facilities as a whole. On the basis of the data obtained, inferences can be made as to where the cost-saving or cost-increasing potentials of the ecological requirements are sited in order to use them more purposefully and effectively in future planning.

Of the 23 building schemes studied, more than 2 in 3 of B schemes specified ecological measures such as soil sealing, planting offers, roof greening, seeping, greening of road space, passive noise protection, carbon dioxide reduction, minimum traffic area and traffic area function mix.

The extra cost of individual measures 1-2 % per one square meter of living area. It is possible, however, that certain measures can add up. As many as 6 building-related measures/requirements are specified for 2/3 of B schemes. Therefore, using the absolute figures in €/m² living area from the tables and relating them to a typical single-family home or apartment house, an estimate can be made of what financial burden can be tolerable. Where soil conditions are favorable, ecological measures such as rainwater seepage can act as direct cost cutters, for example, because sewer connection is not necessary.

The tables and evaluations presented should assist planners in selecting the correct cost and use-related ecological requirements for a building scheme. The assessment of the ecological benefit is weighted qualitatively and may vary on the background of different local conditions. The tool can be modified easily for municipal use and allows the evaluation of requirement versions at an early stage.