URBAN FRAMEWORK PLAN HILLSIDES OF STUTTGART

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Abstract

The residential areas in Stuttgart's hillsides are an indispensable part of the city's unique urban landscape. The cityscape, the high quality of living conditions close to the inner city as well as the climatic and scenic functions of the green residential areas are an invaluable treasure for Stuttgart. The urban framework plan deals with Stuttgart's hillsides. Its scope covers an area of about 11 km², including the agglomerated areas at the foot of the hillsides. About 75,000 people (13 % of Stuttgart's inhabitants) live in the area under investigation, about 61,000 (10 %) in the vegetated residential areas within the climatic quality areas 1 and 2.

The framework plan sums up the technical details of the climate atlas as well as results from current climate analyses. It distinguishes between cold-air ventilation lanes, climate-relevant open land, climate-relevant building land and climatic recovery zones. Targets and acting recommendations are attached to the different categories following the objectives of keeping clear cold-air ventilation lanes in a balanced way, of preserving other climate-relevant areas and of minimizing thermal pollution on the hillsides.

Key words: Urban Heat Island, Urban Planning, Nocturnal Cold Air Flow

1. INTRODUCTION



Fig. 1: Typical Hillsides of Stuttgart

The appealing locations in the hillsides are attractive for builders and investors and there is a trend towards continuous infill development, which may lead over the years to a noticeable and irretrievable loss of existing green spaces and qualities if there is no regulation.

This is why the hillsides framework plan examines whether the designations of planning legislation suffice to preserve the precious green spaces on a permanent basis. At the same time it allows for all citizens and concerned parties to assess the importance of cold-air ventilation lanes and cohesive green spaces. The framework plan collects information for municipal decision-making and proposes specific steps for amending eleven legally binding land-use plans.

The framework plan clarifies that it makes sense to maintain the planning legislation in place, apart from the above-mentioned amendments to the eleven legally binding land-use plans. It gives scopes for individual, modern and high-quality architecture and landscaping as well as an outlook on how to deal with Stuttgart's scenic qualities and highly attractive living conditions in the hillsides in future. The Office of Urban Planning and Urban Renewal has seized the idea from the advisory councils of the five inner city districts who decided on the drawing up of a framework plan for the hillsides in April 2005 and February 2006.

The more so as they all agree on the special significance of this inner city area for the appearance of Stuttgart and for the quality of life of the 190,000 inhabitants in the five inner city districts, whose characteristics qualities must be preserved.

Prof. Dr. Juergen Baumueller, Bernsteinstrasse 150, 70619 Stuttgart, Email: juergen.baumueller@web.de Institute of Landscape Planning and Ecology, University Stuttgart The framework plan was passed unanimously by the advisory councils of the districts councils in September 2007 and by the city council on 2 October 2007 and therefore represents a guideline for the development of the hillsides.



Fig.2 : Aerial view of the city center of Stuttgart with the hillsides

It was forward-looking urban planning that formed the characteristic appearance of the hillsides. They have a high percentage of green spaces, whose distinctiveness is characteristic for Stuttgart's urban landscape.

Three components determine the structure of Stuttgart's position in the valley:

- the urban valley bottom with its prestigious public buildings, parks, alleys and green spaces and its city centre and urban residential areas
- the vegetated hillsides in country style with their vineyards, parks, cohesive green corridors, private gardens, little steps, scenic roads and vantage points
- the vast adjacent forested areas

This remarkable mixture of scenic and urban aspects makes the inhabitants cling to their surroundings and provides a high quality of life in the heart of the metropolitan region of Stuttgart. These distinctive and often contradictory characteristics make up an important part of Stuttgart's identity and appeal.

Area under investigation

The framework plan deals with Stuttgart's hillsides. Its scope covers an area of about 11 km², including the agglomerated areas at the foot of the hillsides. About 75,000 people (13 % of Stuttgart's inhabitants) live in the area under investigation, about 61,000 (10 %) in the vegetated residential areas within the quality areas 1 and 2 (see below).

2. CLIMATIC CONDITIONS

The framework plan sums up the technical details of the climate atlas as well as results from current climate analyses. It distinguishes between cold-air ventilation lanes, climate-relevant open land, climate-relevant building land and climatic recovery zones. Targets and acting recommendations are attached to the above-mentioned categories following the objectives of keeping clear cold-air ventilation lanes in a balanced way, of preserving other climate-relevant areas and of minimizing thermal pollution on the hillsides.

The main subjects of the hillsides framework plan are the preservation of cohesive green corridors and partly built-up areas with characteristic open land (residential green corridors) as well as the limits of development which must be set for the public good and for the preservation of the overall quality of the hillsides. As the demand for building grounds is still high, it is necessary to lay the foundations for preserving the special qualities of this location at an early stage and to realize a sustainable modernization of the existing buildings in order to even improve these qualities



Fig. 3: Climate analyse map (Climate Atlas, 2008)

2.1 Green spaces and development

We can assume that the environmental qualities are affected by a reduction of the green spaces among individual sites, inner block zones and cohesive green corridors as well as by a fragmentation of the green spaces. Planning legislation must primarily guarantee a green space percentage of about 70 % of the whole plot area as well as a spatial framework for a green space structure in order to preserve the quality of the hillsides.

2.2 Planning legislation

Studies in the context of the framework plan have shown that, from a present-day perspective and provided that the general plot structure remains clustered, there is no reason to correct the basic historical structure of urban development and to replace it by a new structure. On the contrary: The current urban development structure is useful and sustainable if you

consider present-day findings and values and is fully entitled to be in place. It is therefore inappropriate to claim that the structure is obsolete and worthless.



Fig. 4: Scheme of the nocturnal cold air flow in Stuttgart

3. QUALITY AREAS

On the basis of information on environmental protection (soil, climate, free spaces, local recreation opportunities, landscape) the framework plan determines areas consisting of a combination of coldair ventilation lanes and cohesive green spaces and therefore represent important environmental qualities of the hillsides. The expression "quality areas" covers climatic and ecological arguments. Quality areas are areas with a high environmental sensitivity which must

be largely or completely protected from additional infill development. The arguments of urban design are considered in the concept of the cityscape areas and the close relation to the quality areas are taken into account. Requirements and measures assigned to the different quality areas are described below:

Quality area 1

New building projects and structural expansions in quality area 1 must meet particularly high requirements in the context of air quality, the greening of the hillsides and the integration into the cityscape. It must be examined in a given case whether the plan must be amended in order to preserve open land or whether the legislation in place suffices to reach this goal.

Amendments to legally binding land-use plans within quality area 1 improving the environmental quality must be made at an early stage. In the drawing up of legally binding land-use plans the hillsides framework plan is to be considered as other city planning measures pursuant to § 1 para. 6 No. 11 of the Federal Building Code



Fig. 5: Typical hillside situation in Stuttgart

Quality area 2

New building projects and structural expansions in quality area 2 must meet high requirements in the context of air quality, the greening of the hillsides and the integration into the cityscape. Building projects can usually be realized within the planning legislation in place.

Amendments to legally binding land-use plans shall contribute to improving the environmental quality. In the drawing up of legally binding land-use plans the hillsides framework plan is to be considered as other city planning measures pursuant to § 1 para. 6 No. 11 of the Federal Building Code.

Targets for the hillsides

existing values in all their individual form

- The existing planning legislation has predominantly proved itself and is to be preserved.
- Vegetated residential areas with their cohesive green corridors are to be preserved as a framework and backed by the master plan. Undeveloped sites and even portions of sites shall remain unbuilt. Especially open land within quality area 1 is to be backed by the master plan.
- Favourable conditions for a low total energy consumption shall be created. The position of the buildings must allow for an optimal passive and active use of solar energy. At the same time shadowing by neighbouring buildings shall be kept to a minimum.
- The hillsides are to serve predominantly as high-quality living space. The buildings' architecture shall be
 designed in an individual and ambitious manner and express the modern way of urban life but blend in
 harmoniously with the streets, the cityscape and the landscape at the same time.
- The line of sight at scenic roads and vantage points must not be disturbed by development or vegetation.
 The green of the hillsides is so characteristic and unique that it is crucial to preserve, tend and cultivate the
- <figure>

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