

International Green Roof City Network

Case Study Karlsruhe, Germany



1) City Data

Location:

Karlsruhe, the former state capital of Baden, is located in the southwest of Germany, on the west border of the German state of Baden-Württemberg. The city lies on the East bank of the Rhine river, bordering the German state of Rhineland-Palatinate (Rheinland-Pfalz) to the north west and France to the West. The city centre (Marktplatz) is 114.9 metres above sea level. The lowest point in the city is where the Rhine enters the oil terminal which is exactly 100 metres above sea level. The highest point above sea level is the animal park in the Grünwettersbach area of Karlsruhe (322.7 metres).

Area

173.46 km²

Population

296,033

Other Information

Karlsruhe is famous for its pleasant climate. Its location in the broad Rhine valley, sheltered by nearby low mountains, means that Karlsruhe enjoys average temperatures of 20°C (68°F) in the summer, making it the second warmest city in Germany. Along with nearby Freiburg, the famous fan-shaped city of Karlsruhe is blessed by the most days' sunshine per year (approx. 140). The southern European atmosphere in Karlsruhe is underscored by its unique parks and open areas: nigh on 60% of Karlsruhe is a park or grassy area.

2) Description of the local Green Roof Policy Initiative

2.1 Start

The Green Roof policy in Karlsruhe already started in 1982

2.2 Expected environmental benefits

- Stormwater management
- Biodiversity
- Urban Heat Island Effect
- Air Quality
- Climate Change
- Energy Savings
- Beautification of the City

2.3 Environmental benefit that is the carrier of the green roof initiative

The improvement of the city climate in combination with the reduction of the heat stress during summer

2.4 Support instruments that are used by the municipality to promote green roofs

- Building, landscape, energy, or other code or policy (e.g. land-use plan, green roof bylaw, zoning code, green factor, design regulations, etc.)
- Reduced stormwater fee
- Financial Incentives
- Tax Credits
- Favourable Credit Terms
- Density Bonus
- Demonstration Projects
- Ecological Labels
- Press, Internet
- Education and Information (e.g. seminars, conferences, green roof tours, etc.)
- Research
- Local Green Roof Guidelines
- Consultancy offer for constructors, investors, building owner
- Other instruments

Description of support instruments

Building, landscape, energy, or other code or policy: In Karlsruhe Green Roofs are made mandatory in land-use plans. In addition they are accepted as compensation measures within the frame of the impact regulation under nature protection and building law.

Reduced stormwater fee: The graduation in the calculation of the stormwater fee is as follows.
Extensive Green Roofs < 80 mm height -> no reduction
Extensive Green Roofs 80 mm – 300 mm height -> 50 % reduction
Intensive Green Roofs > 300 mm height -> 100 % reduction

Financial Incentives: In special districts of the city, private initiatives can receive a financial support for the installation of Green Roofs (Incentive programme: “Greening of Courtyards,

Roofs and Facades”). The subsidy rates are as follows:

Extensive Green Roofs (80 mm - 300 mm substrate thickness): 25.00 Euro / m² net

Intensive Green Roofs / Roof Gardens (> 300 mm substrate thickness): 41.66 Euro / m² net

Density Bonus: This instrument is not used very often. Therefore the application follows a case-by-case decision.

Press, Internet: Information about green roofs is published in the regional press. Special activities like the Karlsruhe “Green Courtyard Competition” are presented in detail in the press and internet.

Consultancy offer for constructors, investors, building owner: All citizens of Karlsruhe can seek advice about Green Roofs free of charge and without obligation from the Garden and Parks Department

3) Number and area of green roofs

The total number of green roofs in Karlsruhe is unknown. The following data from the Garden and Parks Department represent only a small portion of all green roofs:

	Number of Roofs	m ²
Projects supported by financial incentives	126	4,540
Green Roofs on municipal buildings which are maintained by the Garden and Parks Department	52	46,994

4) Challenges and future prospects

The following points need special attention:

- Enforcement and monitoring of the Green Roof requirements in land-use plans (planning and implementation on site)
- Securing of high technical and ecological standards (e.g. height, substrate quality, plant selection, drainage, irrigation)
- Compatibility of solar power systems and Green Roofs.
- Profiling the advantages of Green Roofs in comparison to cool roofs / albedo roofs

5) Contact persons

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6) Internet resources

www.karlsruhe.de/b3/freizeit/gruenflaechen/hdf.de

www.karlsruhe.de/b3/bauen/tiefbau/entwaesserung/entwaesserungsgebuehr

(in German language)