

Number	B-AD6
Indicator name	Vegetation and gravel roofs
Area	A
Indicator definition	The indicator is determined as a point score depending on the proportion of the roof area covered by a given type of surface.
Indicator unit	Body
Key words	Vegetated roof, green roof, gravel roof, roof
Reason for tracking and usability	<p>Based on some research, it is assumed that vegetation roofs can dissipate thermal energy by 150 W/m². The heat transfer through the roof from the outside to the inside can be reduced to more than 90 % through the green vegetation roof. Measurements on summer days in recent years in Germany, for example, have shown that if the outside temperature is between 25-30 °C, the reduction in the indoor room temperature under the vegetation roof is 3-4 °C. If it is assumed as a rough estimate that all the heat accumulated and obtained through the roof structure must be eliminated by means of an air conditioning unit with a capacity of 10 Btu/h (3 W) per watt (including fan energy and loss distribution), "Of the non-vegetated roof of 307 m², the additional heat obtained from the roof structure during the monitored summer period was approximately 700 Watt-hours per day.</p> <p>Experimental determination of the reflectivity of gravel roofs (pdf): https://lnk.sk/imr0</p> <p>Experiment with 4 fractions of natural light gravel used for roofs of houses in the Mediterranean of different thickness (8-22.4 mm, 4-12.5 mm, 2-5.6 mm, 0-4 mm) and one fraction of the same thickness of 4-12.5 mm of different colour / material. Average albedo of materials 29-44 %.</p> <p>Measures proposed to be included in the indicator:</p> <ul style="list-style-type: none"> o Extensive green roof (usually covers most of the area, can be built on roofs with less load-bearing capacity, requires durable and special types) o Intensive green roof (can cover only partial parts, requires higher load-bearing capacity of the roof, retains more water due to the height of the substrate, requires irrigation) o Gravel cover (retains water, increases reflectivity)

Completeness, representativeness, validity	The influence of vegetation and gravel roofs on the cooling of buildings is the subject of expert research. The indicator is based on general conclusions about the estimated effectiveness of each of the main types of roofs. This is an indicative categorization regardless of the specific conditions of the building. The indicator does not take into account the specific composition of a particular roof, only the general type.
Description of data processing	The value of the indicator is evaluated as a point score corresponding to the share of the roof area covered by the given surface type. Area type: Extensive roof: 0 – 10 %: 0 points 10 – 25 %: 1 point 26 – 50 %: 2 points 51 – 70 %: 3 points 76 – 100 %: 4 points Intensive roof: 0 – 5 %: 0 points 5 – 20 %: 1 point 21 – 40 %: 2 points 40 – 60 %: 3 points 61 – 80 %: 4 points 81 – 100 %: 5 points Gravel surface: Under 25 %: 0 points Over 25 %: 1 point
Data source	Own owner/administrator data
Tracking frequency	One time, at change
Urban influence	The city/city district/municipality can directly invest in the installation or reconstruction of vegetation or gravel roofs owned by it, or support these measures on the buildings of other owners financially or otherwise.
Presentation method	The results will be presented in a uniform KLIMASKEN framework on a five-point scale according to the point score
Responsibility	Owner, building manager
