



ZinCo Press Release

Urban rooftop farming

The concept of “urban farming”, i.e. farming in the city, is not new. Set against the backdrop of the New York skyline, urban farming has even made it into the Deutsche Bahn customer magazine. The idea has actually been around a long time, even in Germany. There are plenty of possible large and small vegetable plots at ground level, be it in unused back yards or brownfield sites. However, the numerous flat roofs available provide an almost greater potential. The sophisticated and well-engineered ZinCo systems provide a permanent reliable basis, even for rooftop farming.

The number of densely populated urban centres continues to increase and now more than half of the world’s population lives in towns or cities. According to the Federal Ministry for Building and Regional Planning and the Federal Ministry for the Environment, 50 percent of the land used for human settlement and infrastructure in Germany is already covered. About 110 hectares are added to this on a daily basis, resulting in the loss of farmland. Offsetting this, green roofs have made the breakthrough in densely populated areas. It comes as no surprise, therefore, that green roofs are used to grow vegetables, fruit and herbs as the benefits here are considerable both in environmental and economic terms.



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Growing benefits

In this “Age of Less” and of the “Slow Food Movement”, local and seasonal produce are more popular than ever before. A representative survey carried out by the Forsa Institute in 2010 on behalf of the Federal Department of Agriculture showed that, when purchasing groceries, 65% of consumers usually or always ensure that the produce is sourced regionally. The market desires regionality.

Long supply routes and consequently costs and emissions are minimized as the produce is produced close to the consumer. Produce can be sold when very fresh and is, therefore, marketable for a longer period of time. Besides, freshly-harvested agricultural produce is much richer in vitamins and is tastier.

Thinking in terms of the circular economy that incorporates urban vegetable production is lucrative, as rooftop farming uses local resources: rain water and filtered waste water from the households; solar energy and the heat generated by the building. Conversely, the urban garden can be of benefit to the building, as the plants provide cooling in the summer and thermal insulation in the winter: it’s good for the building climate and just as good for the roof waterproof membrane, which is then exposed to less severe temperature fluctuations. In addition, plants help to improve the urban climate.



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Technology for a fruitful harvest

In order for market gardening to work in an extreme location such as a rooftop, however, all relevant factors must be taken into consideration. For this reason, ZinCo has created the permanent reliable system build-up “Urban Rooftop Farming”. The drainage element Floradrain® FD 40 is at the heart of this build-up. With about 20 cm of ZinCo system substrate, this build-up is suitable for growing many different types of vegetable and fruit for example lettuce, onions, herbs, courgettes, aubergines, pumpkins, cabbage, melons and strawberries. A somewhat deeper substrate layer (28 to 40 cm) is required for tomatoes, French beans, raspberries, blackberries, currants and the like. The level of irrigation and fertilisation required will depend on the vegetables to be grown and local climate conditions.

Generally speaking, pathways are useful in a vegetable garden. The ZinCo system build-up “Urban Rooftop Farming” provides for drainage throughout the entire green roof, even where there is a combination of surfaces, with the result that roof run-offs can be situated in places where they are least disruptive.

The specific requirements of a rooftop location (for example in terms of wind, structural requirements, water run-off) must be taken into consideration during the planning phase. As is the case with all roofs that are going to be used by people, fall-protection measures must be included. ZinCo provides suitable systems and rail solutions, all of which can be



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installed without penetrating the roof membrane. In any case, it is important to ensure safe access to and on the roof area.

Developments in Germany and worldwide

In urban farming you can basically differentiate between private and commercial use of the vegetable garden. The latter is carried out on rooftops either in the open or under glass.

In the international arena, large cities in the USA and Central America are forging ahead with urban farming. In Brooklyn, lettuce is grown across an area of 1,500 m². Commercial projects are already underway in Los Angeles, Dubai and Shanghai. The example of a large supermarket chain is pointing in the same direction: in 2012, production is starting up in rooftop glasshouses in three different locations in the USA where fruit, vegetables and lettuce will be supplied directly from the roof to the point of sale.

In Germany, there are already numerous different examples of urban farming, mainly private projects. Private roof gardens in Karlsruhe and Wendlingen (see photos) show that urban farming can be very successful even with limited space. Larger plots are available on the roof of the Technoseum in Mannheim. This rooftop allotment, about 600 m² in size, is part of a permanent exhibition showing visitors how people lived and fed themselves in former times. In Radebeul, near Dresden we have an



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example of commercial use: some of the vines at the state winery, Schloss Wackerbarth, are grown on the roof, promising a full-bodied taste.

Roofs of the future

What may initially appear to be futuristic can become reality if the correct technical expertise is applied – growing vegetables on a roof. Urban roofs are providing new fields of activity - as farmland or gardens where we can experience nature at first hand or social areas where the community can come together. Whether it's on a small or a grand scale, for private or commercial use, there are many benefits to urban farming. It is also a way of addressing the lack of resources and farmland that has resulted from increasing urbanization.

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Life on Roofs

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Photos

Please quote "ZinCo" as source.



File name: DD-Radebeul_Schloss
Wackerbarth-48.jpg

Photo caption:

Some of the vines at the state winery,
Schloss Wackerbarth, grow on the roof.



File name: 31.tif

Photo caption:

For the owners of this private roof garden
in Wendlingen, fresh tomatoes are brought
straight from the vegetable patch to the
table.



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File name: Techno_019.jpg

Photo caption:

This allotment on the roof of the Technoseum in Mannheim is part of a permanent exhibition showing how people worked and fed themselves in former times.



File name: Techno_055.jpg

Photo caption:

Gardening, watering, maintaining and harvesting provide are valuable tasks that many people never get to experience. This can be remedied on the roofs of kindergartens, nursing homes or hotels.



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File name photo left: CIMG5762.jpg
File name photo below: CIMG5782.jpg

Photo caption:

Harvest time in this kitchen garden in Karlsruhe: in addition to rosy apples, there are all types of vegetable from cabbage to cauliflower.



File name: North Harringay3.jpg

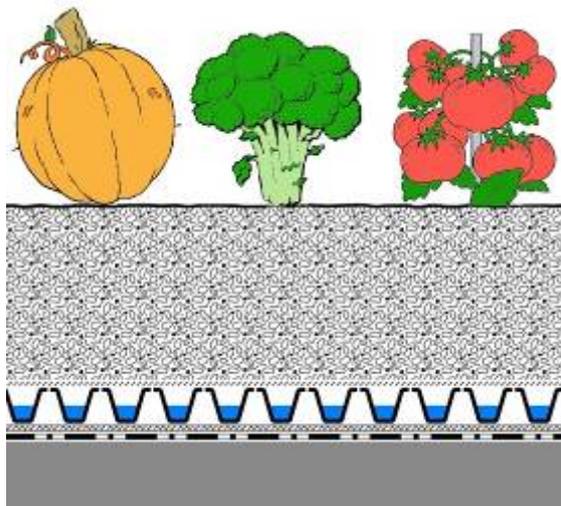
Photo caption:

In addition to creating mounds or stepped substrate beds, plant beds are used to create the required substrate depth, depending on the plants.

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File name: Systemaufbau_Urban_farming.jpg

Photo caption:

System build-up "Urban Rooftop Farming" with Floradrain® FD 40

Drawing text:

System substrate "Lawn", 20 – 40 cm

Filter Sheet TG

Floradrain® FD 40

Protection Mat ISM 50

Roof build-up with root resistant waterproofing membrane