

ROOFTOP FARMING THE FUTURE OF FARMING

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Rooftop Farming is a the perform of cultivating food on the rooftop of buildings it is sometimes referred to as Rooftop garden. Rooftop farming is generally done using the green roof, Hydroponics, Aeroponics or Air-dynaponics systems or container gardens. Also provides architectural enhancement, habitats or corridors for wildlife, recreational opportunities, and in large scale it may even have ecological benefits.

WHY A ROOFTOP FARMING?

It Reduce the “urban heat island effect” Reduce amount of greenhouse gas. Grow your own vegetables and fruits, Reduce and clean storm water runoff, Reduce energy consumption, A thing of beauty Give back to your environment A boon for your health.

BENEFITS OF ROOFTOP FARMING?

1. Economic sustainability through rooftop farming means the increase in local food production and sale
2. Increase in food security and property value
3. Improvement of roof durability,
4. Reduction in building cooling load and energy costs
5. It converts CO₂ emissions.



6. It produces oxygen.
7. It reduces ambient temperature.
8. It captures and harvests rainwater.
9. It reduces storm water runoff and discharge.

TYPES OF ROOF FARMING

A. Extensive Roof Farming System

B. Intensive Roof Farming System

CHARACTERISTIC ROOF FARMING SYSTEM

A. Extensive Roof Farming System

- Growing Medium Depth 150mm or less
- Accessibility Often inaccessible
- Fully saturated weight Low 48.8-170kg/m²
- Plant diversity Low
- Cost Low
- Maintenance Minimal

B. Intensive Roof Farming System

- Growing Medium Depth >150mm
- Accessibility Usually accessible
- Fully saturated weight High 244-1500 kg/m²
- Plant diversity Greatest
- Cost Varies, but is generally high

A) EXTENSIVE ROOF GARDEN/ FARMING SYSTEM

1. Shallow (Ultra Extensive) Depth Roof Garden/Farming System:

Shallow Roof Garden System (growth media depth 2.5” to 4”) is ideally suited for areas likely to receive little maintenance. Recommended plants include sedums, herbs and grasses. The anticipated weight above the membrane assembly is generally between 4.8 and 6 pounds per square foot, per inch of system depth, in a saturated state

2. Medium Depth Roof Garden/Farming System :

Medium Depth Roof Garden System (growth media depth of 5” to 8”) includes plants such as sedums, herbs, grasses and other vegetation, which can grow in this depth of media. Un-irrigated systems can be provided without difficulty; however, drip, mist or spray irrigation systems may be required to support more diverse plant types or for installations in semi-arid climates. The anticipated saturated weight above the membrane assembly is less than 50 pounds per square foot.



B) INTENSIVE ROOF FARMING SYSTEM

The intensive green roof uses planting mediums that have greater depth than the extensive green roof. Deeper soil allows intensive roofs to accommodate large plants and dramatic plant groupings. Another term for these green roofs is “rooftop garden”. The planting medium in intensive green roofs starts at 6 inches. This system typically requires a structural concrete roof deck to support the larger dead load. An irrigation system should be utilized in these assemblies. The anticipated weight above the membrane assembly is generally greater than 50 pounds per square foot.

Rooftop farming can be a viable option for urban agriculture on account of decreasing agricultural land, especially in Indian cities. It can play a significant role in urban environmental management and enhance the continuously deteriorating quality of air while offering organic and fertilizer-free produce. The best crops for rooftop farming are chilli, tomato, brinjal, spinach, beans and winter vegetables.

Rooftop farming is getting a traction in the urban areas because it is easy to handle, economic and has an array of health and environmental benefits. It makes the city green, eases waste management, enhances the air quality and easily provides unadulterated, fresh and nutritious food products.

