



Green roof off and running. The finished rooftop vegetable garden is watered using rain collected from rain barrels.

Edible Roof Tops

This is a strategy for those who can grow their produce on their roof: think of the amount of space freed up on the ground. Senega describes the experience of building her rooftop garden.

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DINNERTIME at my household is a gastronomic delight thanks to the culinary talents of my French trained chef husband and my rooftop garden where I grow just about everything a gourmet cook could ever desire. Heirloom varieties of Swiss Chard, squash, tomatoes, baby melons, peppers, French lettuce, a plethora of herbs and even ever-bearing strawberries provide a bounty of food on any given

night. Tonight the chef is preparing a seafood medley composed of freshly caught prawns, crab and salmon he caught in Horseshoe Bay, minutes from their Vancouver home.

The ultimate food-producing machine

Using the square foot (30x30 cm) method and five raised planters (a total of 228 square feet [21 m²]) filled with only 10 inches (25 cm) of lightweight green roof soil mix can easily supply a family of 12 (allow 16 square feet [1.5 m²] per

person) each season with produce to spare for many dinner parties! A word of advice, you may want to start off smaller!

In *Square Foot Gardening* (1981), Mel Bartholomew recommends grid patterns instead of rows to grow your fruits and vegetables. This reduces wasted space by eliminating aisles and at the same time decreases the amount of weeding. Growing plants such as tomatoes, cucumbers, and squash vertically (on a 5–6 foot [1.5–1.8 m] trellis system) at the back of each bed free



Building boxes.
Gravel on the roof provides positive drainage

tative cover on a structure. Plants are grown in anywhere from 1 inch [2.5 cm] of soil and deeper. The most common type we are familiar with today is known as an extensive roof where sedums or grass are grown in soils of 4–6 inches [10–15 cm].

The edible green roof takes this one step farther and creates raised planter beds (much like on the ground) and uses 10–12 inches [25–30 cm] of soil.

The advantages of using your rooftop for your edible garden are numerous including:

1. Creating locally- (literally) grown food sources. This reduces the carbon footprint as produce you buy may have been shipped via fuel-guzzling

up much covered horizontal space. And for greater efficiency interplant fast growing and maturing crops like radishes and leaf lettuce with slower growing plants such as tomatoes. By the time the tomatoes fill out their space, your faster growing crops have been long consumed in a gourmet dish!

Tucked on the south-east corner of the roof are two honey bee hives. Not only does the roof garden provide the bees with an abundant source of pollen and nectar but pollination from the bees dramatically increases plant yield, which equals more food for the table! Each hive will produce approximately 90 lb [41 kg] of honey each year! Now if I can only think of a way to get chooks on the roof without decimating the vegetable garden!

Going green is going edible

Green roofs have been around for hundreds of years. The concept of green roofs first took off in Germany about 50 years ago. In short, a green roof is simply vege-



Lining the boxes using recycled weed block to hold soil and still allow drainage.

Loading soil on the green roof.

transport vehicles from hundreds and even thousands of miles away.

2. Enjoying produce that was organically grown. (Assuming you don't want all that nasty pesticide and fertiliser in your diet!)

3. A controlled and sanitary environment that means less disease and pest issues.

4. Less chance of marauders (such as rabbits and for us: bears!) raiding the garden.

5. Less weeding as weed seeds find their way to soil that is three metres up in the air.

6. Freeing up valuable limited outdoor real estate on the ground by moving edible gardens to the unused roof.

7. Holding your water — soil holds water which means less storm water loading city sewers. For a truly efficient system — attach rain barrels to your drains below to capture rainwater and reuse to water your garden.

8. An excellent source of pollen and nectar for butterflies and bees.

9. Oxygenation — growing plants add oxygen to and absorb carbon dioxide from the air.



Step-by step instructions for creating an edible green roof

- **Prepare your roof.** Ensure your structure meets building, safety and structural requirements for a green roof. Also make sure your roof membrane can support walking and planters — you don't want to risk a leak! Flat roofs are the best.
- **Build structure to hold soil.** We used 2x4 inch [50x100 mm] sleepers (two tiers + sleepers = 10 inches [25 cm] of soil). Gravel on the roof provides positive drainage — good drainage is a must. Check your roof drains and ensure

they drain properly!

- **Line your boxes.** Use recycled-content weed block to hold soil and still allow drainage.
- **Add green roof soil.** Special green roof soil is placed in raised planters (soil weight = 75 pounds per square foot [366 kg/m²]). This mix is great as it starts out with no weed seeds.
- **Plant vegetables, herbs and fruit.** Swiss chard, watermelon, iceberg and assorted leaf lettuce, vine and cherry tomatoes, zucchini, cucumbers, peppers and ever-bearing strawberries.
- **Add bees for a finishing touch!**

Two beehives provide approximately 90 lb [41 kg] each of honey.

Costs associated with building the edible roof (Canadian dollars)

Timber, filter cloth and hardware — \$500

Green roof soil: 8 yd³ [6 m³] @ \$65.00/yd³ — \$520 (regular garden soil is less than half the price).

Seed (varies but for our roof) — \$100 (but we have enough seed for the next 5+ years!)

Labour — free (also good source of exercise!)