קרן קימת לישראל



החטיבה לחינוך ולקהילה, המחלקה הפדגוגית

Urban solar hydroponic system

Here is a unique system that utilizes energy from the sun (solar energy) for the growth of plants without the need for a soil substrate (hydroponic cultivation)



How does It work?

- 1. The sun's rays hit the solar panels.
- 2. Energy from the sun is converted into electrical energy and stored in a battery.
- 3. The electricity in the battery activates a pump, which is installed in the lower water tank.
- 4. The pump pushes a thin layer of water in which nutrients and fertilizers are dissolved (nutrient solution) to the roots of the "planted" seedlings on the upper surface.
- 5. The seedlings grow and thrive.
- 6. The rest of the nutrient solution returns by gravity through the filter to the lower tank for reuse.

The system in front of you combines the advantages of using energy from the sun and the hydroponic growing method, thus enabling economical urban agriculture. Energy from the sun, which is available in abundance, is used to generate the electricity that enables the operation of the hydroponic system.



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Did you know?

Hydroponics have many advantages, including:

- Reduction of the area required to grow vegetables.
- Urban area utilization, including areas that are not suitable for traditional agriculture, such as roofs, walls and built and paved spaces.
- Utilization of desert areas that are not suitable for traditional agriculture.
- .Saving water for irrigation
- Prevention of soil contamination with fertilizers and pesticides.
- Reducing the need for pesticides many pests come from the soil.
- Fast and particularly high-quality growth, thanks to:
 - Improved availability of water, oxygen and nutrients to plant roots
 - Controlling the acidity level of the growing environment and the concentration of nutrients in it.

Did you know?

The large water tank of the system (250 liters of water) enables passive cooling of the plants, the environment and the structure: the body of water cools during the night, and remains cold for a long time. The plants, which evaporate water, lower the ambient temperature. On top of that, the large water tank reduces evaporation, making the system less sensitive and easier to maintain.

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