Hersonisos Municipality

http://www.hersonisos.gr/

«GREEN ROOF»

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The City of Hersonissos is a dynamic and extrovert Local Government Organization, which has been participating since 2011 in the Covenant of Mayors (www.eumayors.eu)

Our Aim and Hope is a Greener - Cleaner tomorrow by the use of RES, and by each others assistance in its own way.

MUNICIPALITY OF HERSONISSOS

In June 2015 the roof of the old Town Hall of Hersonissos in Gournes has been transformed into a Mediterranean garden as it is hosting a prototype green roof covering a surface of 30m^2.

Essentially, with the term "***Green Roof***", we call a roof that has been transformed into a garden and which is developed in controlled conditions with many environmental and economic benefits.

This application acts as a **demonstration tool** for educational purposes for both adult citizens and children, as part of an awareness-raising action on environmental issues, green policies and smart practices in rainwater management. For this reason, it was chosen to be placed initially in a highly visited building and in a space **accessible to public**.

The implemented "Green Roof" system is assembled, portable and adapted to Greek conditions, is lightweight, and watertight. It is adapted for all climatic conditions of the Greek roofs. It is also self-supporting, without the need for intervention and addition of materials, but also without the need for lubrication, irrigation, pesticides, pruning, and cutting.

The design has been based on the successful green roof implementation on the Treasury building of the Ministry of Financial Affairs in Athens – Greece, and it is using a prototype technique designed for Mediterranean and particularly Greek climatic conditions, which require a light-weight construction even when wet, that can however, keep water and maintain vegetation.

This technique is a mix of geo-membranes, soil and geocellular pillows, which form the base of the green roof and upon which the plants, endemic aromatic species, are planted. The green roof is self-maintained.

For its completion 4 hours were required and the overall Implementation Cost was 4.000€. The low cost for the creation of a Green Roof with this technique along with the even lower cost (near zero) for its maintenance, is a strong advantage for achieving **a firm political commitment**.

As the vegetation is low no specific authorizations were required (according to the Greek legislation - Law 4067/2012) and thus its creation was easier.

Such an application

- significantly reduces the **heating costs** of the building,
- works as additional **thermal insulation** and
- **reduces** heating losses.

At the same time, it **reduces the cooling costs**

- **saving energy and money**, since the temperature inside the building during the summer months is kept about 10 degrees below the outside.

Improves the balance of the ecosystem within the cities, creating a microclimate

- which **absorbs large amounts of dust and cloud**
- while at the same time **reducing noise pollution**.

Plant photosynthesis produces **more oxygen** in the atmosphere

- and **reduces carbon dioxide**.

This **improves the wider ecosystem** and

- **Upgrades** the immediate environment by helping
- to **reduce the "thermal islet phenomenon"** (The Thermal isle is the phenomenon of increasing indoor air temperature in the surrounding areas during a hot summer period due to the climate change caused by the storage of solar energy on urban surfaces, such as buildings and roads during the day).

A very important factor is the achievement of better drainage of the sewerage network as the rainwater is absorbed by the planted roof

and their runoff in sewers is reduced.

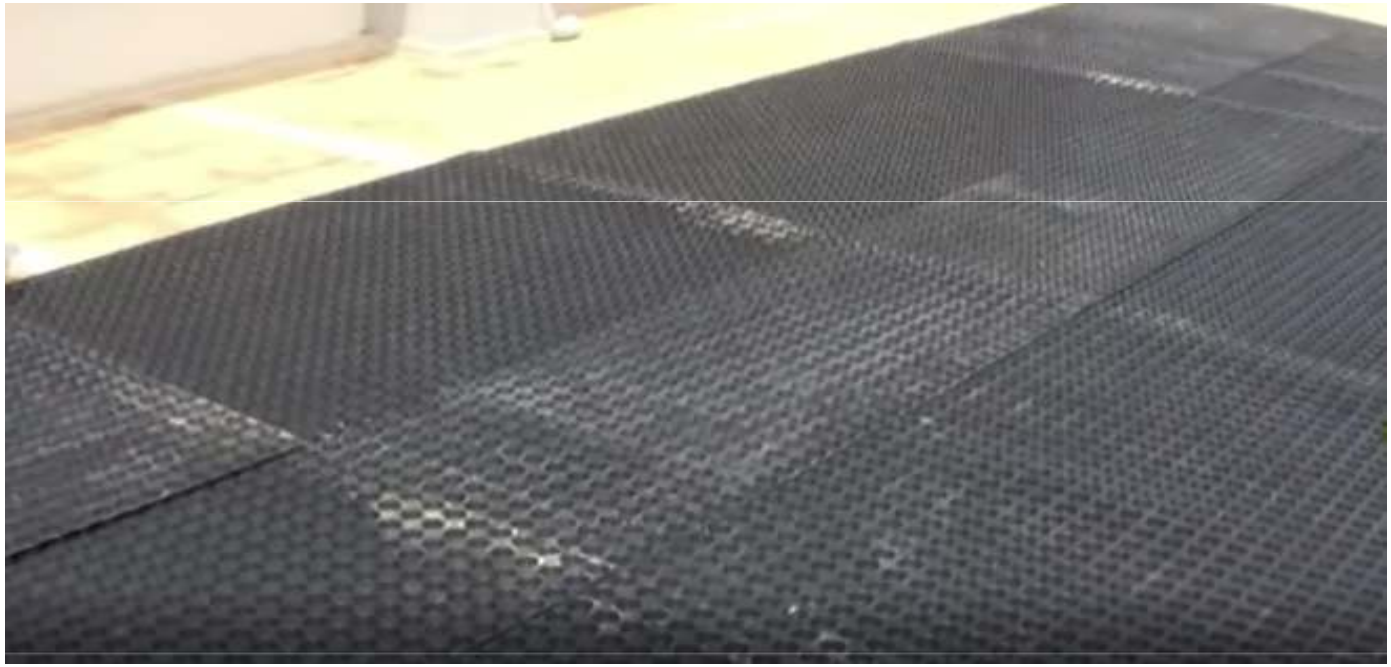
Apart from environmental and energy, there are also many economic benefits that a planted roof offers.

It is very important that the insulation of the roof is protected from external factors that would reduce its lifetime, while the aesthetic upgrading of the building is equally important.

The Beginning

The work series:

1. **Installing a water storage, drainage, and rooftop membrane** over sealing, by overlapping the collection boxes at the contact points of each sheet with its adjacent side.



2. **Place the phytopathole surface with a substrate** necessary for the rooting, permanent maintenance and growth of the plants. This specialized substrate is enriched with a powerful load of beneficial micro-organisms that bind and convert pollutants and other airborne particles into nutrient elements, which ensures that plants are continuously nourished without additional fertilizers.

3. **Installing an automatic irrigation system** on the phytosyntheses.

4. **Planting with plants of specialized Greek biodiversity** of dry flora flowers that respond to the climatic conditions of the area (Cretan flora).

Creating the right spot for the main plants.

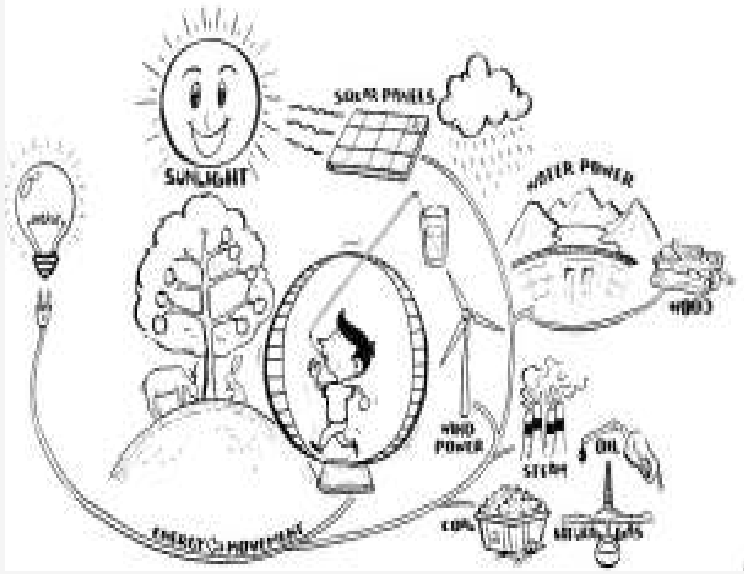
Having put the main plantation in place, the creation of the right spot for the secondary (smaller) plants is set.

5. **Periodic inspection of vegetation and irrigation system** for one (1) year, until the soil cover, is fully completed by plants.

The Final surface

THANK YOU FOR

YOUR ATTENTION



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