

ENVIRONMENTAL BENEFITS OF GREEN ROOFS

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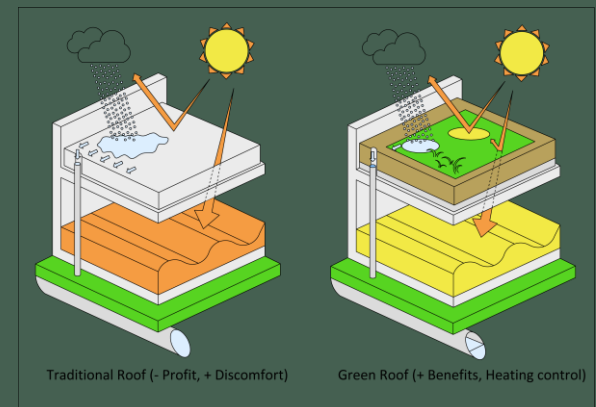
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INTRODUCTION

Green roof systems are representative of green architecture, which application implies a combination of engineering and natural sciences

BENEFITS OF APPLYING GREEN ROOF SYSTEMS

Among the functional benefits of green roofs, most significant are improved insulation, energy savings, and increased comfort, while users have personal benefits such as space for recreation, rest, and mental relaxation



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Numerous benefits such as additional thermal insulation, reduced energy consumption and emissions of harmful gases into the atmosphere, extended membrane life, reduction of urban heat islands, air purification are just some of the environmental benefits provided by green roof constructions



Energy consumption reduction

The ecological advantages of green roofs do not only apply to new buildings - their importance in the renovation of old buildings is much more noticeable than in new, well-insulated buildings

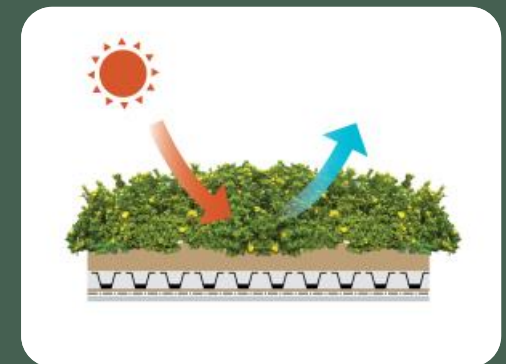
Green roofs can reduce the need for cooling by 32-100%, while their application can reduce the roof temperature by 50°C, which confirms the importance of the energy aspect of these systems



Decrease of the Urban heat island

In addition to the direct benefits for the roof construction and the building, green roofs contribute to the cooling of the immediate environment

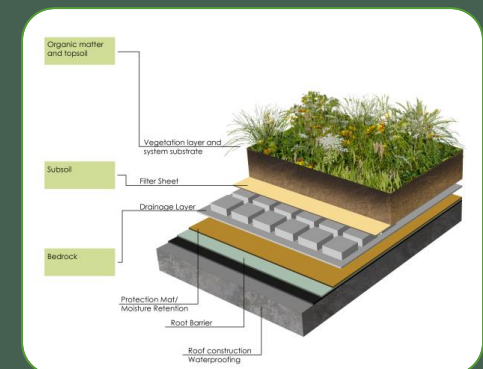
Atmospheric waters retain in the green roof and cool the environment during the evaporation process



Ecological materials and the reduction of carbon footprints

The importance of energy savings by integrating traditional building principles in modern construction practice has prime importance and contributes to improving the energy performance of buildings

The application of green roofs is directly related to the development of new materials and technologies



Water filtration - filter for particles, pollutants and temperature control

Green roofs purify the atmospheric water that passes through them, reducing the runoff of harmful substances they contain

Through natural biofiltration, green roofs prevent pollutants and toxins from entering watercourses



Improving urban hydrology through rainwater management

Construction of green roof contributes to the retention of atmospheric water and controls the amount of water that flows through the substrate

Green roofs are very effective in controlling rainwater runoff, so in addition to being able to retain a large amount of rainwater, they contribute to delay of peak periods in the case of heavy rains



Sound absorption

Because of the high absorption coefficient of the vegetation layer, green roofs decrease the noise level in urban areas



Ecological preservation

With increased urbanization, ensuring biodiversity is becoming one of the priorities for local communities

Green roofs are very often inaccessible to people, and therefore represent an excellent place for development and preservation of biodiversity



CONCLUSIONS

The conversion of black roofs into green roofs can provide better control of atmospheric water runoff, improve air quality, and increase urban biodiversity at the municipal level

In addition to economic, these systems also provide environmental, aesthetic, and social benefits, which is why they represent the right choice for many landscape architects around the world

Green roofs give hope to many ecologists, politicians, and architects that the buildings will be sustainable and environmentally friendly in the future

THANK YOU FOR YOUR ATTENTION!