GREENER HEIGHTS

Elevating Urban Sustainability

Introduction and Background

Greener Heights aims to explore the technology of green roofs, which have been utilized in Europe for decades but are only recently being adopted in the U.S. With climate change and energy concerns rising, strategies for improving the environment are a hot topic in political, business and sustainability practices. Green roofs are a simple technology that can drastically benefit ecosystems and quality of life and new roofs are being implemented increasingly.

The Classification and Structure of Green Roofs

Green roofs are classified according to their depth and maintenance requirements. Some categories include: lightweight extensive, extensive, semi-intensive, intensive, roof gardens/podium decks and biodiverse/wildlife. See **Figure 1** at left.

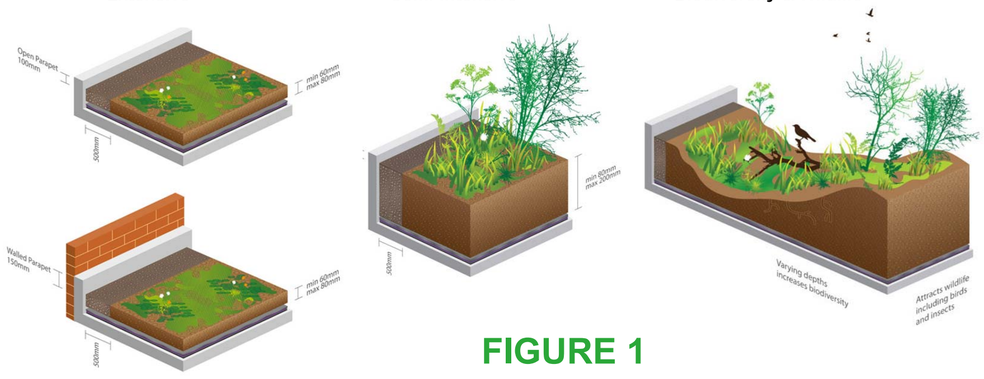
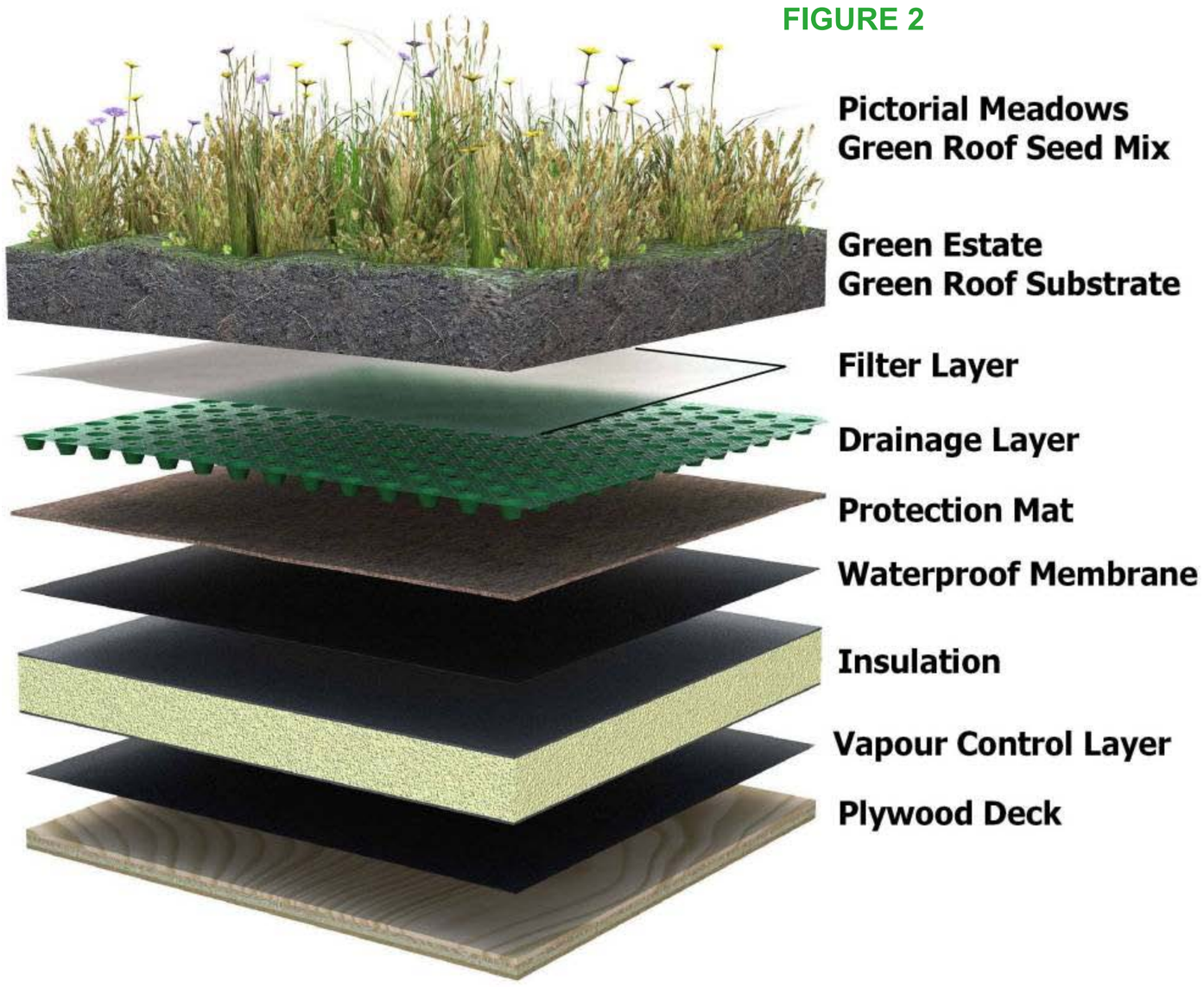


FIGURE 1

A typical green roof consists of a plywood deck on top of the roof, topped by a vapour control layer, a waterproof membrane, a drainage layer, a filter layer which allows pools of water to collect and feed plants, a growing medium like soil, and the vegetation itself. See **Figure 2** below.

FIGURE 2



Implications of Green Roof Technology:

- **Reducing storm water runoff**
- **Mitigating the "urban heat island" effect**
- **Lowering energy costs for buildings**
- **Filtering pollution**
- **Reducing noise**

The Future of Green Roof Technology:

Cities in the U.S. and worldwide have begun to create tax incentives for buildings to install green roofs. However, the high initial costs of green roofs can be a detractor for building owners. While some studies have examined the impact of green roofs on decreasing energy costs and city temperatures, the long-term effects in the United States have not yet been fully explored.

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