

Preface

A green roof or living roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.[1] Container gardens on roofs, where plants are maintained in pots, are not generally considered to be true green roofs, although this is debated. Rooftop ponds are another form of green roofs which are used to treat greywater.[2] Vegetation, soil, drainage layer, root barrier and irrigation system constitute the green roof.[3]

Green roofs serve several purposes for a building, such as absorbing rainwater, providing insulation, creating a habitat for wildlife, increasing benevolence,[4] and decreasing stress of the people around the roof by providing a more aesthetically pleasing landscape, and helping to lower urban air temperatures and mitigate the heat island effect.[5] Green roofs are suitable for retrofit or redevelopment projects as well as new buildings and can be installed on small garages or larger industrial, commercial and municipal buildings.[1] They effectively use the natural functions of plants to filter water and treat air in urban and suburban landscapes.[6] There are two types of green roof: intensive roofs, which are thicker, with a minimum depth of 12.8 cm (5+1/16 in), and can support a wider variety of plants but are heavier and require more maintenance, and extensive roofs, which are shallow, ranging in depth from 2 to 12.7 cm (13/16 to 5 in), lighter than intensive green roofs, and require minimal maintenance.[7]ⁱ

In the present book, ten typical literatures about Green roofs published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Green roofs. We hope this book can demonstrate advances in Green roofs as well as give references to the researchers, students and other related people.

ⁱ https://en.wikipedia.org/wiki/Green_roof