

## Using Medicinal Herbs in Designing Green Roofs

**Authors :** Mohamad Javad Shakouri, Behshad Riahipour

**Abstract :** Today, the use of medicinal herbs in architecture and green space has a significant effect on the process of calming human and increases the reliability coefficient of design and design flexibility. The current research was conducted with the aim to design green roof and investigate the effect of medicinal herbs such as cress, leek, fenugreek, beet, sweet fennel, green basil, purple basil, and purslane on reducing the number of environmental pollutants (copper, zinc, and cadmium). Finally, the weight of the dry plant and the concentration of elements zinc, lead, and cadmium in the herbs was measured. According to the results, the maximum dry weight (88.10 and 73.79 g) was obtained in beet and purslane respectively and the minimum dry weight (24.12 and 25.21) was obtained in purple basil, and green basil respectively. The maximum amount of element zinc (235 and 213 mg/kg) and the maximum amount of lead (143 mg/kg) were seen in sweet fennel and purple basil. In addition, the maximum amount of cadmium (13 mg/kg) was seen in sweet fennel and purple basil and the minimum amount of lead and cadmium (78 and 7 mg/kg) was seen in green basil, and the minimum amount of zinc (110 mg/kg) was seen in leek. On the other hand, the absorption amount of element lead in the herbs beet and purslane was the same and both absorbed 123 mg/kg lead. Environmentally, if green roofs are implemented extensively and in wide dimensions in urban spaces, they will purify and reduce pollution significantly by absorbing carbon dioxide and producing oxygen.

**Keywords :** medicinal herbs, green space, green roof, heavy metals, lead, green basil

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