Decision Support Tool for Green Roofs Selection: A Multicriteria Analysis

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Abstract : Diverse stakeholders show different concerns when choosing green roof systems. Also, green roof solutions vary in their cost and performance. Therefore, decision-makers continually face the difficult task of balancing benefits against green roofs costs. Decision analysis methods, as multicriteria analysis, can be used when the decision-making process includes different perspectives, multiple objectives, and uncertainty. The present study adopts a multicriteria decision model to evaluate the installation of green roofs in buildings, determining the solution with the best trade-off between costs and benefits in agreement with the preferences of the users/investors. This methodology was applied to a real decision problem, assessing the preferences between different green roof systems in an existing building in Lisbon. This approach supports the decision-making process on green roofs and enables robust and informed decisions on urban planning while optimizing buildings retrofitting.

Keywords : decision making, green roofs, investors preferences, multicriteria analysis, sustainable development
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