

Roof gardens, which have been in existence for thousands of years, are growing more popular as people realize the significant benefits they offer. People living in urban areas, apartments, or residences with small gardening spaces, are no longer limited to the confines of their environment. Spaces that were sparse with greenery are now able to be converted into roof gardens that offer more than just a beautiful and relaxing environment.

**ENERGY SAVINGS**

Because they use much less space than typical gardens, roof gardens not only offer privacy but also “absorb a lot of energy by being on top of a structure. They provide natural noise and thermal heat insulation, thereby cutting down on utility bills.” (Dickinson 2008) Additionally, roof gardens also provide habitats for wildlife. Thus, what was once deemed good for the eye is also now good for the environment.

**FEASIBILITY OF CONVERTING FLAT ROOFED BUILDINGS TO GARDENS**

Replace prime and roof top garden

There are many options for the placement of a roof garden including wood-frame structures. However, the primary guiding principal is that roof gardens should be built on structures that are strong enough to support them. “Roof gardens are more ideally suited to steel-frame and reinforced-concrete structures, on which strong support platforms can be provided as reasonable cost.” (Osmundson 1999, 14)

Weaker structures or structures that require additional support be added, can be transformed into a roof garden. However, these can cost significantly more to build depending on the initial weight-bearing capability of that structure.<sup>1</sup>

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<sup>1</sup> Internal reinforcement is sufficient in most cases.

## STRUCTURAL REQUIREMENTS

Developing a roof garden does not need to be limited to the concept of a traditional garden that might be seen on top of a downtown apartment building. Instead, creativity is imperative as other structure-types are considered. Some of these alternatives include:

- Garages and sheds<sup>2</sup>
- Balconies and terraces
- Patios or decks

Create bulleted list

The main consideration when designing a roof garden is to consider whether the structure can withstand not only the weight of the garden but also the water needed to maintain the garden. "The load-bearing potential of a roof or balcony will determine where beds, containers, and other heavy features can be safely placed." (Stevens 1997, 14) In designing the garden, it will be necessary then to understand the weaknesses and strengths of a particular structure and design accordingly to avoid structural issues.<sup>3</sup>

## POSSIBLE PROBLEMS

Before getting started, it is important to understand the potential problems that can impact a roof garden. While there are numerous issues to consider, a few of the more important ones include:

Create a numbered list

1. Rainwater build-up can sacrifice the structural soundness of the roof. Make sure the structure is slightly angled or has proper drainage to allow for water runoff.
2. The structure may be unable to sustain the weight. Consider container gardens which consist of lower weight but offer the same benefits of in-ground plants.
3. Selecting plants that require too much water can add considerable weight to the garden. The best option is to research and understand which flowers and plants thrive in a given area and do not require a lot of water.

Regardless of the type of roof garden, the final touch is to ensure that it is personalized and contains special touches. Add personal touches by using unique objects that show off the gardener's personality. According to one group of designers, "Keep an eye out. Our favorite sources are salvage yards and antique markets, but garage sales, estate sales, and trash are great places to look." (Zimmeth 2008, 83)

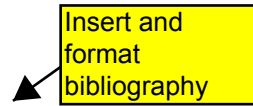
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Add 2 citations and reference page numbers

<sup>2</sup> On structurally weaker buildings, potted plants work best.

<sup>3</sup> Heavier materials should be located near load-bearing walls.

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## Bibliography

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