

The role of Vertical Gardens and Contribution in Mitigation of Sick Building Syndrome

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Abstract:

The concept of green spaces is considered to be the lungs of the cities, purifying the air while enhancing the quality of life, but according to rapid urban growth and high density, the green areas have been limited in urban spaces which led to harm to the ecosystem and the emergence of sick buildings syndrome as a direct result of increased heat load, higher rates of energy consumption, and environmental pollution within the cities, thus creating a harmful environment resulting in negative effects on the human health.

The research aims to clarify the design considerations of vertical gardens as an environmental solution, mitigating the effect of sick buildings syndrome and the infrastructure. In addition, vertical gardens carry advantages that integrate the green spaces with the built areas such as; promoting urban sustainability due to its environmental, economic, psychological and social benefits. The aesthetics of vertical gardens help enhance the quality of life and positively affect the well-being and a higher life standard.

To achieve the research aims, the research was based on the analytical scientific method. The methodology of the study consists of two parts, the first part is a literature review that studies deteriorated buildings and addressing the vertical gardens concept, advantages, types, systems, and how to choose the type of plant to absorb pollutants and volatile organic compounds. The second part, is an analytical part that reviews applied examples of vertical gardens and analysis their design elements, types, systems, and the impact of these gardens in each application. Finally, the study is conclusive and recommended, which helps illustrates the importance of vertical gardens and the necessity of encouraging this concept of gardens, while supporting expertise in the field to implement them and make our cities more sustainable.

Keywords:

Sick building syndrome, Vertical gardens, Benefits of plants, Green Facades, Living walls.