Review of Sustainable: Living Walls

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Abstract

According to a United Nations forecast seventy percent of the world population will be living in cities by 2050 (UNFPA 2007).This is due to the huge transferring that continuing to profound from the vegetated and rural areas to the modern cities, which increased the pollution, noise, and crowdedness of cities bit by bit and shifting them into more concrete, solid and blocked jungle. In order to overcome such a major problem, new and innovative solutions are needed. The lack of the green is one of the main factors that can cause huge problems. So we must find better ways to integrate nature again into these expanding cities.

A new technology is now out to light, which uses the plant as a main solution to improving urban heat, achieving aesthetics, sound controlling and saving building energy. Using this new technology and using new systems allows plants to be part of a building where they are actually planted and growing in a wall system known as "Living Walls". With multiple benefits of plants in improving air quality, excellent aesthetics by the different colors and textures of foliage, reducing temperature and noise levels and reducing the energy costs through a process known as evapotranspiration. Living Wall naturally cools the air inside the building and on the outside it acts as an insulator which isolates the hot air and pollution which improve the building performance. All these benefits make living walls an excellent choice to be part of a sustainable solution of urban rehabilitation and adjusting the buildings to increase its performance.

The aim of this paper is to understand new systems and technologies involved for designing and installing living walls and understand the main differences between these systems in terms of composition and construction methods in order to achieve both aesthetic and functional elements.

To overcome many problems living wall with all its benefits and systems must evolve to become more sustainable solutions to achieve better performance in all building phases and not just technical solutions.

Key words: Living wall, bio-walls, living wall systems, Hanging Garden, sustainability, and evapotranspiration.

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