The Integration of Green Walls and Architecture

Bita Rezazadegan

Bauhaus-Universität Weimar

Introduction

A wall is an architectural object, which is responsible for defining spaces by separating them. It also could be a filter between inner and outer spaces. Walls have other functions that can be added to their initial and classic meaning. In terms of heat, noise, light, and pollutions, walls could work as insulation. Exterior walls, which are also known as a façade, give the building its appearance. The exterior walls represent the face of buildings and their effect on the urban environment aesthetically and functionally. Green walls are introduced as one of the approaches of exterior walls which have pros and cons in their environment. "Vertical Greening Systems (VGS) are also known as green-wall technologies, vertical gardens, or bio walls." (Pérez-Urrestarazu, Fernández-Cañero, & Franco-Salas, 2016, p.2)

PROS

Vertical greening systems have been used for many years, but nowadays they are becoming more important because of the need for making the cities more sustainable and the increasing environmental concern of their citizens. These systems are evolving, so the traditional compositions of plants and substrates have been combined with new technologies in order to improve their performance and enhance the benefits achieved with them. The success of VGSs in some cities has inspired many designers, engineers, and architects to introduce living walls in their new building projects. These urban greening attempts can also help to reduce climate change and improve living conditions in the growing cities. Therefore, VGSs have a great potential to contribute to provide a better environment for sustainable cities.

CONS

To state the cons of the green walls, it is important to note that some architects and building owners are not willing to cover facades with plants because it reduces the variety and creativity in façade deigning. Furthermore, they might have harmful effects on their environment regarding dirt, insects, allergies, etc. In terms of climate help, green walls need a long period to be able to cover the wall and afterward start acting efficiently as air purifiers. Besides, most of the current green walls lose their leaves in fall and winter and they transfer to a dried wood branch that does not manifest the beautiful initial goal.

Colorful leaves

Traditional green wall

Autumn green wall

Scratched wall by the plant

Plants' footprint remain on the wall

The green wall is suspended and falls

Conclusion

The results of this study can be used to increase public awareness about the significant potential of green walls and their contribution to citizens' environmental quality. Also, It gives awareness about the negative points of green walls. These weakness points show the initial paths of further research in order to make solutions via technology and media and make more efficiency out of green walls.

Pérez-Urrestarazu, L., Fernández-Cañero, R., & Franco-Salas, A. (2016). Vertical Greening Systems and Sustainable Cities. *Journal of Urban Technology, DOI: 10.1080/10630732.2015.1073900,* 1ff.