Technical considerations of green facades according to environmental permeability

Case study: live wall in a single-family house, Casa 4, Caracas.

Summary

Keywords: green facades, architecture, technique, environment, sustainability.

The green facades can be defined as plants integrated into the walls of the buildings, is a form of union between the architecture and the natural environment, a way of giving back green spaces stolen by highly densified urban developments and subjected to real estate excesses. There are many advantages after the placement of vegetation on the surfaces of buildings, but also, it faces a series of problems, due to the number of constructive variables and the lack of technical information available to them, so it is justified that this application should be studied from the notions of architecture, such as its spatial relationship, its constructive qualities, and its environmental concordance, to be able to incorporate them with the necessary knowledge to the project phases.

The approach of this research consists of a review of the state of the art of green facades, both in their construction, installation development, their environmental compatibility and the characteristics of the plant species to be placed, in order to provide a classification of green facades, with emphasis on the degree of environmental filtration, since this allows categorizing and understanding the relationship between architecture, spaces, and users with nature.

Among other objectives of this research, certain historical aspects of the vegetation and architecture relationship, the pioneers in Venezuela of this technique and the practical and constructive details of the integration of plants to buildings, highlighting the advantages and disadvantages of Each system of green facades studied.

Finally, this research analyzes and technically describes the case study called Casa 4, which is a green facade project, of the type of living walls, which had the opportunity to document, from the design phase to its construction, Therefore, information is very supportive of the investigation of this technique.

Based on these premises we study the green facades, not only with the idea of achieving aesthetic purposes but with a view to understanding the constructive and environmental benefits that can be obtained when projecting with these surfaces, so this research would provide knowledge of the technique of green facades, to be used from the academic sector to the professional sector.