

## Living Walls by Francie McGowan

As temperatures rise and the urban environment becomes denser with population increases, many architects and city planners are incorporating more plants into buildings and landscapes. Living greenery counteracts the effects of smog, heat and cold that affect humans and structures alike. Plants reduce greenhouse gases such as carbon dioxide, carbon monoxide and nitrogen dioxide and give off oxygen. This improves the atmosphere in offices and buildings, as well as the “heat islands” that urban areas have become. They also are an essential habitat for insects and birds.



One way of incorporating plants into architecture is by creating a “living wall,” which is a vertical vegetation layer on the outside of one or more walls of a building. Aesthetically, this breaks up the monotony of the concrete walls of city skyscrapers and surrounding retaining walls with varying hues and patterns of greenery. But, more importantly, these walls act as mulches and filter the impurities in roof water through the roots before hitting the ground below.

The vertical garden was invented and patented by Stanley Hart White, who was a professor of landscape architecture at the University of Illinois from 1922 to 1959. He called his invention “botanical bricks” and patented it in 1937. It never really took off until recently, with the climate change.

Having interior living walls improves the environments of offices and building lobbies by absorbing sound, purifying the air and providing a living work of art. Creating your own living wall can be relatively simple and not too expensive, depending on how extensive you want the wall to be. You need to make sure that it isn’t too tall to water or to replace plants that die or outgrow their growing space.

For an indoor wall, it can be as simple as having a frame and a wall to hang it on. This type of arrangement is aesthetically pleasing and can be hung anywhere in the house where there is light and a structure to support it.

For an outdoor vertical vegetation wall, you will need more plants, materials, growing medium and structural reinforcement because of the weight of the plants and soil.



There are numerous web sites that give a step-by-step demonstration for the do-it-yourself person. One such site is <https://growupgreens.com>. There are numerous other sites on the Internet for ideas about creating a vertical garden outdoors. For something simple, however, you can create an indoor statement with plants by just using an ordinary picture frame. With chicken wire and a smaller frame to attach to the larger one, you can make a box that will hold soil and support the plants that you decide you want.

Although you can use many different kinds of plants to create the patterns you like, it is important to choose plants that have the same watering needs. Succulents are an excellent choice because they only need to be watered a couple of times a month and they are very sturdy. But they need lots of light, whether sun or bright interior light. A Sunset Garden website that explains how to do this is: <https://www.sunset.com/garden/backyard-projects/diy-vertical-succulent-garden-project#succulent-frame>.

Vertical gardens are an incredible leap forward for architectural projects that have to comply with exterior urban environmental requirements and interior office spaces. But we can also spruce up our own gardens and houses with this green concept.

*Sources: Samar Sheweka, "Living Walls as an Approach for a Healthy urban Environment." Pub, Energy Procedia, vol. 6, 2011.*

*Sunset Magazine: Creating a Living wall in 3 Basic Steps:*

<https://www.sunset.com/garden/landscaping-design/how-to-plant-vertical-garden-wall>

*Francie McGowan is a University of California Cooperative Extension Master Gardener of Tuolumne County.*

*UCCE Master Gardeners of Tuolumne County can answer home gardening questions. Call 209-533-5912 or go to: <http://ucanr.edu/survey/survey.cfm?surveynumber=7269> to fill out our easy-to-use problem questionnaire. Check out our website at:*

*[http://cecentralsierra.ucanr.edu/Master\\_Gardeners/](http://cecentralsierra.ucanr.edu/Master_Gardeners/) You can also find us on Facebook, or pick up the local Master Gardener book "Sharing the Knowledge: Gardening in the Mother Lode" at Mountain Books or the UCCE Office both in Sonora, CA.*