



MIMICKING NATURE'S VERTICAL GARDENS

Vertical greenery has been adopted as a standard feature in high-rise buildings. It helps to provide aesthetic relief from the harsh urban environment by providing a softening effect, creating a welcoming and friendly indoor living space, and contributing therapeutic benefits to our busy and stressful lifestyles. Many factors including site constraints, cost and maintenance need to be taken into account to create a successful green wall indoors. An example of would be the green wall over the Asia Square Tower One Food Garden.



Fig 1.1 (above) The barrisol area in the food court

For the Asia Square Tower One site, there were three major considerations:

Firstly, the site is completely under shade and the use of live plants would require artificial lighting.

Secondly, maintenance is a major issue due to the height and location of the green wall over a food court with no practical access for routine maintenance works.

Thirdly, the appropriate planting media had to be taken into consideration for plants to grow well. The vertical wall had a large surface while the barrisol had a curve, slightly sloping surface.



Fig 1.2 (above) Photo of the main green wall

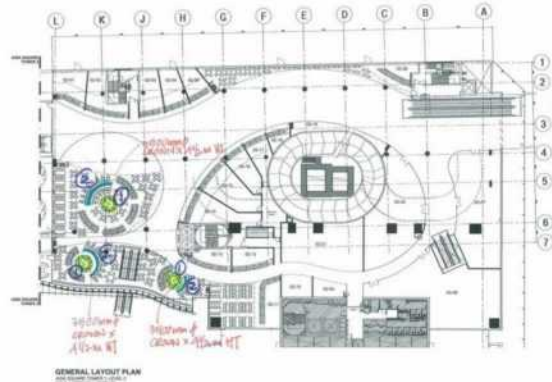


Fig 1.4 General layout indicating location of barrisols



Fig 1.3 Some initial design sketches by the architect

The Management and Staff of Earthscape Wishes all our Clients and Business Associates a Happy Chinese New Year!



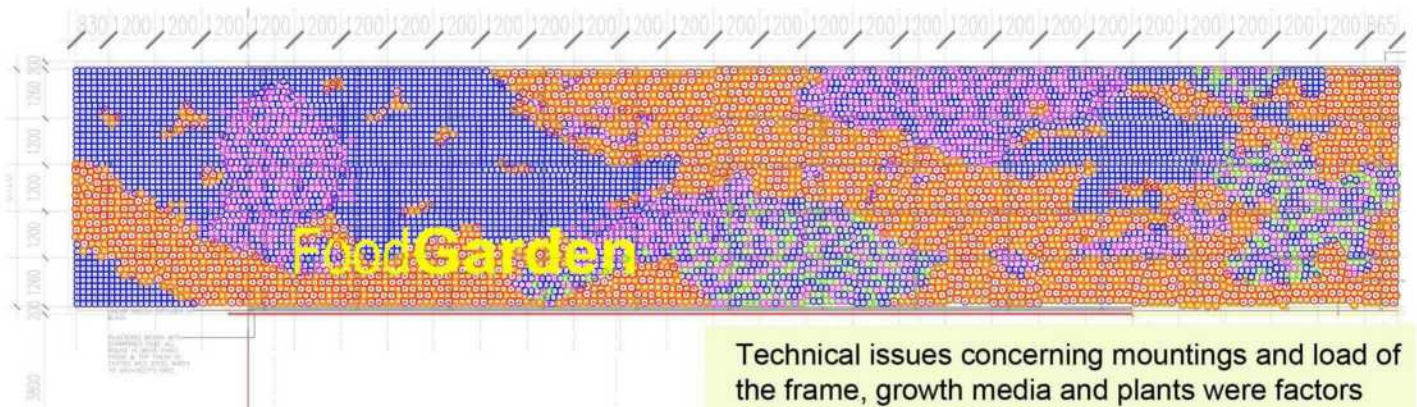


Fig 1.5 (above) Details of the plant layout



Fig 1.6 (above) Lunch time crowd with the completed main green wall at the background

Technical issues concerning mountings and load of the frame, growth media and plants were factors which require professional engineers' design details. Besides cost considerations, using live plants also pose other issues such as irrigation water dripping and pests.

The design architects from Denton Corker Marshall specified the selection of silk plants to be used at the walls to express the depth, color and tile covering patterns on the surface.

In the end, the two green walls of artificial silk plants were found to be the most practical and sustainable solution.

Most importantly, all the artificial plants used are fire-rated and meet the stringent fire safety codes.

These magnificent green walls now adorn over 230 square metres overlooking the concourse of Asia Square. Mimicking nature's vertical greenery, this artificial green wall stands as an outstanding and beautifully executed solution to meet the unique and demanding design requirement of the client.

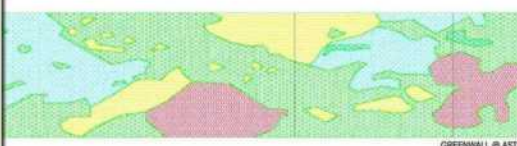


Fig 1.7 Plant palette and a mock up of the green wall with the proposed planting

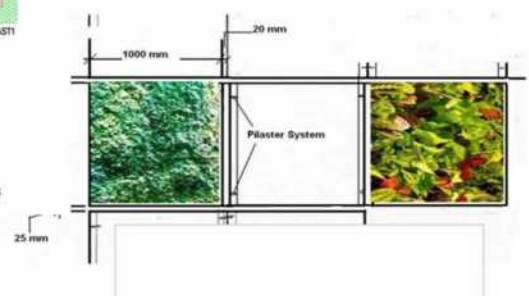
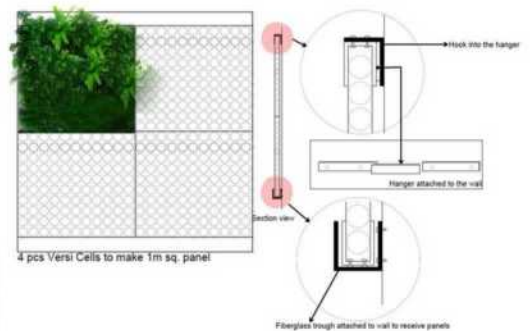


Fig 1.8 (above) Various mesh options for the green wall



Fig 2.1 Indoor planting in an office, with *Sansevieria trifasciata* (Mother-in-law's tongue) shown in the foreground

NATURE'S GIFT TO OUR HEALTH

We take so much for granted of our environment and only when we suffer from its deleterious effects then we wake up and take notice. It was so for Kamal Meattle when he was afflicted with the loss of 70% of his lung capacity breathing the polluted air of New Delhi. Now a prominent researcher of improving air quality in highly dense urban office environment, Kamal's prescription for cleaning up the office air is for indoor plants to be introduced as permanent features of air-conditioned office spaces. His studies uses 3 common plant species, the Yellow-cane Palm, Mother-in-law's tongue and the Money Plant. In an office facility which was successfully transformed with a ready supply of fresh oxygenated air; 1,200 plants were introduced to the office housing 300 persons. The ratios suggested are; for Living Spaces, Three shoulder height Yellow-cane Palms to each adult, and in Bedrooms, 6-8 waist height Mother-in-Law Tongues for each adult. Money Plants are found to be excellent in removing formaldehydes and other volatile chemicals, the bane of sick buildings.

The results were significant; improving human productivity by some 20% and energy usage by 15%. The environment is cooled, oxygenated and the volatile chemical pollutants are removed by the plants. What is important too is that eye irritation, respiratory illnesses, lung impairment, asthma and headaches were substantially reduced among the office staff.

The lessons for us are clear. Virtually all of our population is housed in buildings, and we need to make a conscious effort to keep our internal spaces healthy with practical use of indoor plants. At Earthscape, we help you make that happen using selected plants that can also add to the beauty of the decorated interiors.

- adapted from Kamal Meattle's presentation (2009)



Fig 2.2 The *Chrysalidocarpus lutescens* (Yellow-cane Palm, top left) and *Epipremnum aureum* (Money Plant, top right)





新年快乐

Director's Note

As the pressure mounts to preserve our fragile environment with the help of plants, we increasingly encounter challenges which border on the impossible. Almost without exception, indoor spaces are designed to include copious amounts of plants. Shade or a roof against the ravages of the weather poses the greatest headache to growing successful indoor gardens. It cuts off one of the most important factors needed for plant growth: LIGHT.

In the first edition of Earthscape Digest we talked about the unique rotating sky garden as a means to expose the plants to adequate amount of light. In our recent assignment the challenge was even more daunting. Not one to be cowed by challenges, we had to think out of the box when we were confronted with an assignment to install lush gardens at an indoor space without any viable natural source of light. Even worse, these plants had to be installed 4 metres above a food court.

Specifically, the Landscape design brief called for the use of indoor plants to clad two indoor features of massive proportions;

- a. A large feature wall 4 metres above floor level
- b. A circular ceiling (barrisol) feature above a dining area

A study was made to determine the feasibility of such a challenge. There were structural, mechanical, plumbing, drainage, electrical, lighting concerns and not least the maintenance of these life plants over areas of high human traffic and presence.

In the end, EarthScape offered a pragmatic solution by introducing fire-rated handcrafted plants. It was a solution to mimic nature. As they say "Mimicry is the Best Form of Flattery". This story is discussed in the first 2 pages of this newsletter.

It was a solution that infused a natural character to the otherwise, stark and harsh interior finishes of the entrance and dining areas.

As a Professional Landscaper, I struggled with the use of artificial plants. I have to concede that the outcome far exceeded my expectations. The handcrafted artificial green walls received favorable feedback and most importantly achieved the desired design intentions.

You see, at EarthScape we go beyond plants to satisfy our clients. You are important to us!

Happy New Year and Gong Xi Fa Cai to our readers!!

Lily Chee
Managing Director

