

DUBAI GREENS..



The art of producing food

All over the world, from Hong Kong to Singapore; from drought-ridden California to lush York in the UK; communities are beginning to consider not only from where their food comes from but also how healthy it is; not merely in nutritional terms but also in terms of their Carbon footprint.

Growing food can absorb acres of resources. For example, in order to grow one lettuce up to 15 gallons of water may be used on/in a patch of ground measuring approximately 12x12 inches.

Is this an efficient use of resources ?

Using modern technology and techniques this same lettuce could be grown in 3/2rds the time using only 1 gallon of water instead of the aforementioned amount. I say "modern" but this technology and technique can be traced back to the Aztecs, and perhaps even the ancient Egyptians

Quite simply it is Aquaponics: the art of producing food in water and this in turn gives many cities, including Dubai, the ability to produce its own food.

From this food production, we will be in a position to start work on greening the city, using half-completed building projects as the cornerstones of this project, cladding them in grasses and perennial flowers which will bring wildlife back in the way of birds and insects into the city.

Dubai intends to be a green city by 2030 and SGP intends to aid the State in their journey to become greener.

From dream to reality

HOWEVER,

At present Dubai has many old, partially completed buildings covered in scaffolding, with cranes above them swaying in the wind. These do create an eyesore when contrasted with the many splendid buildings that are within the city. SGP has considered some of these buildings, remembering that some may need to be dismantled due to the weathering of the structure which others may be brought into use as below.

There are over 100 such part competed structures in the City, which add a drabness to an otherwise bright skyline. Without care these unfinished buildings will rot from the inside, the concrete could become unstable and as well as this, they contribute to the general dirt of Dubai; as the wind sweeps them around and transfers tiny particles of concrete into the atmosphere.

These buildings need to be tended and cared for so as to enhance to beauty of the city, not only by dismantling the buildings but also by bringing some back into use. However, not only as apartments but as vertical farms, creating life within Dubai itself and a farming industry leading to much lower food miles and healthier food, subsequently ending with a "green city".

Two questions arise from this however

1. Is this dream realistically achievable ?
2. What is meant by "A Green City"?

The simple answer to the first question is yes, at an initial cost but with a long-term payback.



The revolution

If we consider what other cities have done, cities such as Singapore and countries such as the USA and the Netherlands, we can see that farms are being planted and crops grown in the middle of cities. Dubai can become a leader in such a revolution: a farming revolution.

These empty and derelict buildings could be put to use as farms; vertical farms where each floor can be utilised to grow salads, fruits, vegetables and flowers. Each floor would have its individual water distribution and collection system; the water flooding the floor and then being drained into a tank to be re-used for the next watering. To push the system further one could have a fish tank where the fish are fed- with the fish water being siphoned off into the plants. The fish give off ammonia which in water becomes nitrogen, an important ingredient for plants to thrive. The plants then extract the nitrogen which leaves the water clean and ready to be reused.

Obviously, as each floor would be enclosed by heat resistant cladding, we would need to use recommended lighting and colours to mimic the light from the sun to encourage growth. However, as we would be able to control the lighting on the rainbow spectrum, we could have growth 7/24 until the time for harvesting. This reduces the time of growth by up to a third or, to put it another way, this method increases the quantity harvested in a year by %33.

The heat resistant cladding is necessary for temperature control which does mean that we have the ability to keep the temperature at the mean necessary for proper and controlled growth.

The plants on each floor would be in trays on racks rotating in an upward manner with the lighting hanging below each rack so that they may have the proper lighting needed for the crops. It has been scientifically proven that some plants respond better to some colours than others- hence the need for the whole spectrum of light.

As for the living walls, the cladding covers the insides of each building but with careful planning, window sills will be created on which scaffolding can be hung on the outside of the building. This will enable the buildings to be covered in perennial flowers and grasses to help beautify the building.

The grasses will be grown on matting on a flat surface and once matured, they will be hung from scaffolding to cover the walls, being watered by the same system as the farms.

Power for the lighting and the water will be self-generated by the use of solar panels and roof-mounted wind turbines. Batteries will also be installed and collect the surplus electricity to help save the excess power per building to assist the lighting inside.



The living walls of Dubai

The benefits of a living wall are:

- Environmental: the living walls absorb carbon monoxide
- Reduces the need for air conditioning by acting as a coolant in summer and insulation in winter
- Reduces dust and dirt
- Beautifies the building by becoming green allowing flowers to grow
- Attracts birds and insects
- Has a calming effect (as reported by Wimbledon tennis players this year)
- Reduces pollution and particulate matter
- Increases nature in the city

It may be that the concept of a 30 story or more building as a garden may be considered OTT, if that is the case then the upper floor may be used as:

- Storage areas for Government and other papers
- Gardens and farms, as above, giving fresh food and flowers
- Employment for the farmers, ensuring that the plants have the proper nutrients and are harvested at the proper time.
- Energy creation from wind and solar power

A development such as this would attract investment, possibly from the world bank and others. The vertical gardens would reduce the carbon in the city; reducing the ambient temperature on the streets, create employment, reduce the carbon mileage of some foods and flowers and just as importantly, make living in Dubai a pleasure.

Perceptibly, we would have to work with the owners of each building and arrange a payback period and method which is acceptable but then again, any return is likely to be acceptable if the alternative is to watch the investment rot or become dust over time. Our concept would provide a payback to all interested parties including the original investors and owners.

Dubai, once again, within a very few years, could be a world leader in such matters and the ability to have at least one green wall before Dubai 2020 is too good of an opportunity to miss.

Green Walls : Dubai 2020.