

Group: Open Group

Sub-theme: I&T for Community (Community Wellness)

Project Code: O-001340

“Vayu (The Liquid Plant)” (內容只提供英文版)



User Pain Points

Poor indoor air quality adds to the burden of caretakers and the ill who already experience mental and physical strain. A study by WHO states that 30% people experience hypersensitivity, sneezing and wheezing, mental fatigue, headaches, coughing and nausea while indoors, and it occurs in 57% of indoor spaces. Air ventilation and purification sounds simple but is difficult to execute. Although we could improve air quality by placing plants, they are inefficient and indoor spaces in HK are too small to place multiple houseplants. Meanwhile, commercial air purifiers are costly and unaffordable for many households and care facilities.

Solution Benefits

Vayu (The Liquid Plant) is a microalgae based air purification system. It is an effective, affordable and low-effort method that improves indoor air quality in care facilities and households, alleviating mental and physical stress. It is 1500% more powerful than an average houseplant in terms of oxygen production and carbon dioxide removal. It can also remove harmful nitrate gasses and sulfate gasses that are produced by daily human activities. With HEPA filters, Vayu can remove 99.97% of allergens, bacteria and viruses. It is

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small and compact, and no maintenance is needed besides the bi-monthly refill of microalgae and nutrients.

Technologies Applied

Microalgae optimal culture, HEPA filtration system

Target Users

User Profile / Persona:

The Vayu aims to alleviate sick building syndrome caused by poor indoor air quality, which reduces both physical and mental strain that care-takers and care-needers suffer from in addition to their sickness.

The main target audience are divided into 3 archetypes:

1. Individual users who are working adults, wishing to improve the quality of their working and/or living space. They may also be caretakers/home-makers/family users who wants to improve the quality of their shared living space. They wish to provide a healthier lifestyle for themselves and members under their care, at the same time value the psychological benefits of a solution with low maintenance yet beautiful appearance. They are mainly living in urban spaces where they suffer from poor indoor air quality and are unable to enjoy the liberty of going to rural areas due to physical/scheduling limitations.
2. Building owners/facility managers who are in charge of care & community facilities. They may wish to improve the air quality of their facilities to create a better environment for their users and/or to fulfil the mandatory requirement on IAQ and/or ESG standards without having to afford extra to maintain a solution.
3. Public space (e.g. public estates, libraries, sport stadiums) decision makers who wish to create a healthy environment for the community through effective ventilation. They would like to incorporate ESG solutions into their buildings.

User Scenario and Goals:

1. Setting up the Vayu in a bedroom or a working desk, or any surface at home, provides similar physical and mental benefits to that of a plant. Users enjoy fresh air, and reduction the symptoms of sick building syndrome such as hay fever, nausea, headaches and coughing. They will also enjoy the delight of looking at and taking care of a plant-like entity without the need to put in effort.
2. Clinics, elderly homes, care centres and community facilities often have a stuffy crowded space where visitors wait or conduct other activities, and causes additional discomfort to care-takers and care-needers who are already wearing a mask and are both physically and mentally strained due to illness. Hence, facility managers may wish to improve the indoor air quality in these spaces to make waiting a more pleasant experience. Moreover, good air ventilation reduces the risk of spreading pathogens.
3. In public spaces like carparks, parks and public estates, implementing the Vayu or our scaled up models provide not only a larger scale of ventilation but also acts as an art installation that brings the community together. Facilities not only fulfil ESG goals but also further evolve to become a hub where its users can relax and find a moment of peace in this busy city.

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