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## SGBCCommunity Spotlight

The SGBCCommunity Spotlight series highlights what sustainability means to SGBC Members and how they are helping to build a greener and healthier built environment.



**Mr. Li Ruiwu, Robert**

CEO  
Singrass



### How is the company helping to build greener buildings?

Singrass is a Singapore-based tech-driven ecological enterprise that provides ESG solutions for indoor environments and urban agriculture. Using leafy vegetables and herbs as the main focus, Singrass integrates these into their proprietary Indoor Smart Eco System, establishing plant communities within indoor environments to create green and sustainable spaces. This system offers four key benefits: ecological landscaping, ecological functionality, ecological agriculture, and carbon footprint reduction.

One case we handled in 2019 was about employees who reported headaches and discomfort due to excessive levels of formaldehyde and other pollutants. During the pandemic, as most employees worked from home, the company rented potted plants and bought air purifiers to address air quality issues. However, when employees returned in April 2022, they still experienced headaches. The Singrass Indoor Smart Eco System was installed on July 18, 2022, and by November 14, 2022, the formaldehyde levels had decreased from 0.403mg/m<sup>3</sup> to 0.043mg/m<sup>3</sup>, while TVOC levels also significantly dropped.

### What drove the founders to set up the company?

Between 2012 and 2014, while studying for my Chinese EMBA at the NUS Business School, I had the chance to visit many companies. When I moved into a newly renovated co-working space, I developed severe allergies due to indoor air pollution. This personal experience drove me to explore indoor environmental pollution and how plant communities could be used to purify indoor air, reduce pollution, and promote healthier living. Over the past seven years, we developed the Singrass Indoor Smart Eco System, which has since been proven to reduce CO<sub>2</sub>, TVOCs, and formaldehyde, while also decreasing carbon emissions by 158,483 tons compared to traditional vertical hydroponic systems.

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**What is the biggest challenge the company has faced? Are there any learning points for the rest of the industry?**

Over 80% of the population in urbanised countries spend about 80% of their time indoors, especially in tropical countries like Singapore. Research shows that indoor air pollution is cumulative, complex, and long-lasting at low concentrations. Indoor environmental quality, in particular air quality, is a crucial consideration when planning for sustainable buildings. However, public awareness remains low despite government regulations and private sector scrutiny

**What do you think can be done to move the needle on built environment sustainability?**

Green buildings are currently focused more on energy efficiency and carbon reduction; I think that they should also prioritise indoor air quality for human health. The real value of sustainability lies in its impact on people's wellbeing. Singrass has partnered with charitable organisations to install the Indoor Smart Eco System in nursing homes, allowing residents to participate in activities like planting and harvesting, which help reduce stress and enhance wellbeing.

**How does the future of our built environment look like to you?**

The future of sustainable built environment should look into indoor air quality as a critical focus, as air-conditioned modern buildings grow in number and with proper ventilation being overlooked. Integrating plant communities into indoor spaces will be essential to maintaining a healthy indoor environment. Singrass co-hosts talks with the Singapore Interior Designers Society (SIDS) on the importance of incorporating nature into urban environments to share the idea with the hopes of integrating our Indoor Smart Eco Systems into future developments for functional biophilic elements in buildings.

**What's next for the company?**

Singrass will continue researching how to optimise the Indoor Smart Eco System for energy efficiency and adaptability to various building types. Singrass is continuously collaborating with schools, government agencies, and public organisations to support them in achieving their sustainability goals and educate the public on the benefits of green buildings.