

## **Frasers Property Implements Singapore's First-Of-Its-Kind Food Waste Valorisation Programme Among Retail Tenants**

- ◆ Initiative to be rolled out to five malls in the initial phase following a successful pilot programme at Causeway Point
- ◆ Partnership with Life Lab Resources enabled by Green Eco Technologies' WasteMaster system will transform food waste into commercial grade fish feed
- ◆ This innovative approach sets a new precedent in the sustainable production of reliable aquaculture feed

### **SINGAPORE, 15 JANUARY 2024**

Frasers Property Singapore has inked a partnership with food security solution provider, Life Lab Resources (LLR), taking a significant step towards realising a circular economy on food waste for its retail ecosystem in Singapore. The collaboration built on the successful food waste upcycling pilot at Causeway Point, one of the first local malls to fully integrate tenants into a holistic food waste segregation programme.

Frasers Property Singapore is excited to announce the roll-out of the WasteMaster food waste valorisation system to five of its malls – including Causeway Point, Waterway Point, Northpoint City, Century Square and Tampines 1. There will also be potential upscaling to other of Frasers Property Singapore's malls in 2025.

The onsite food waste treatment plant developed by Green Eco Technologies and operated by LLR converts food waste into nutrient-rich substrates using reactive oxygen technology. LLR is setting up a bio-refinery plant in the first quarter of 2024 to treat and transform the substrates into high-quality microbial protein with all essential amino acids. This protein has the potential to be supplied to feed formulation companies to be converted into aquaculture feed. Besides cutting down on waste sent to incinerators and landfills, it also reduces the need for new natural resources to produce food, thereby providing a sustainable avenue to mitigate greenhouse gas emissions (refer Annex for the details).

A Memorandum of Understanding on the partnership to roll out the food waste valorisation system was inked between Frasers Property Singapore and LLR at Causeway Point on Monday, 15 January 2024, and witnessed by Minister of State for Trade and Industry Ms Low Yen Ling.

**Ms Soon Su Lin, Chief Executive Officer of Frasers Property Singapore**, said: "As a major real estate player, Frasers Property's vision and efforts are aligned with the Singapore Green Plan 2030 to push for a more sustainable environment. Achieving our net-zero carbon goal will require strong collaborative efforts with every stakeholder in the real estate ecosystem. I'm heartened to bring our retail tenants onboard Singapore's first-of-its-kind circular economy solution for food waste management, in our collaborative drive towards a zero-waste and food-resilient future."

She added: "Partnering with like-minded organisations such as Life Lab Resources with Green Eco Technologies as the technology provider enables us to drive sustainability and social impact through technology and champion environmentally friendly behaviours. With the successful pilot at our Causeway Point mall, we look forward to the support and participation of more tenants in this food waste management programme across our malls. We also welcome collaborative opportunities to testbed innovative solutions to help build a greener and more liveable Singapore."

**Mr Edward Chia, Managing Director of Life Lab Resources**, said: "This collaboration is symbolic of the ingenuity required to tackle sustainability and climate challenges head-on. We are thrilled to partner with Frasers Property on this sustainable innovation that aligns with Singapore's Zero Waste Masterplan and supports the narrative on enhancing food security, turning vision into action. With the strong support of Frasers Property, we are able to scale up a bio-refinery plant to undertake the process of converting the extracted

proteins into fish feed for commercial purposes, seamlessly integrating waste upcycling into the food production ecosystem.”

“We are thrilled to work with Life Lab Resources to bring this technology to Frasers Property that is dedicated to fostering a truly circular solution tailored to Singapore’s sustainability plan. Collaborating with such like-minded partners is instrumental in pushing the boundaries of innovation, a crucial aspect of our collective efforts in combating food waste and addressing the climate crisis. Our gratitude extends to our aligned partners, as well as the commendable efforts of all tenants and stakeholders involved in this transformative project. Together, we look forward to making a significant impact on sustainability and contributing to a brighter, greener future for Singapore,” shared **Mr Moses Lim, Global Business Development Director of Green Eco Technologies.**

The seven-month pilot at Causeway Point was adopted by food and beverage (F&B) outlets such as Bali Thai, Food Republic, and Ichiban Boshi as well as FairPrice Finest supermarket. A total of over 27 tonnes of food waste had been collected during the pilot which started from January 2023. More F&B tenants such as Dian Xiao Er, Kuriya Japanese Market, PastaMania, Shabu Sai and Tokyo Shoduko have since joined the programme, resulting in the collection of over 52 tonnes of food waste in the past year.

“Ichiban Boshi is pleased to participate in Frasers Property’s food waste valorisation pilot programme at Causeway Point. This programme aligns with RE&S group of companies’ sustainability objective and targets to reduce total general waste, and reinforces our commitment towards responsible waste management. By joining this initiative, we embrace the potential to create a sustainable and circular food system, where every scrap becomes a source of positive change,” said **Ms Yap Fang Ling, Chief Financial Officer of RE&S Holdings.**

“Food Republic hopes to not only nourish the communities that we are in but also to feed a sustainable future. Embracing the food waste valorisation initiative by Frasers Property is not just a commitment to reducing waste; but also part of our efforts to create a positive impact on both people and the environment,” said **Mr Andy Kiu, General Manager (Food Atrium Division), Food Republic Singapore.**

The food waste valorisation system was able to reduce the net weight of food waste by up to 80% while retaining its nutritional value, eliminating harmful pathogens and creating safe, nutrient-rich substrates. The substrates have been tested by an independent third-party laboratory for safety and efficacy. An E. coli and Salmonella spike test was previously conducted to empirically prove that the WasteMaster reactive oxygen technology eliminates pathogens. A separate laboratory test also proved the retention of nutrients.

The substrates were further processed via fermentation to cultivate microbial protein, which is a high-quality protein with all essential amino acids required for aquaculture feed. As part of the bench trial test, the substrate’s protein content rose from 17 per cent to 44 per cent following fermentation, with the potential to increase further in the next phase of commercialisation. On an annual basis, the food waste valorisation programme at five of Frasers Property Singapore’s malls is expected to reduce up to 2,200 tonnes of food waste and save up to 660 tonnes of CO<sub>2</sub> emissions. In the event that the food waste valorisation programme is extended to other of Frasers Property Singapore’s malls, it is expected to cut down about 4,700 tonnes of food waste and reduce up to 1,600 tonnes of CO<sub>2</sub> emissions.

This initiative in Singapore builds on the Group’s track record of leveraging partnerships and sustainable innovation to drive food waste management. Some of these solutions include composting food waste into fertiliser at The PARQ and One Bangkok in Thailand, as well as processing food waste into nutrient-rich residue with Green Eco Technologies’ WasteMaster system at Burwood Brickworks Shopping Centre, Ed.Square Town Centre and Eastern Creek Quarter in Australia. Frasers Property remains committed to engaging its ecosystem of stakeholders in its decarbonisation journey and pushing for innovative initiatives and eco-friendly practices to forge a sustainable future.

**END**

### **About Fraser's Property Singapore**

Fraser's Property Singapore is a strategic business unit of SGX-listed Fraser's Property Limited, a multinational company that owns, develops, and manages a diverse and integrated property portfolio.

Fraser's Property Singapore owns, develops and/or manages residential, retail, office and business space properties in Singapore.

Over the years, it has developed over 22,000 quality homes. It oversees a portfolio of 12 shopping malls in Singapore and six office and business space properties. Nine of the retail assets and one office property is held under Fraser's Centrepoint Trust, and another office property is held under Fraser's Logistics & Commercial Trust.

For more information on Fraser's Property Singapore, please visit [frasersproperty.com/sg](https://frasersproperty.com/sg).

### **About Fraser's Property Limited**

Fraser's Property Limited ("Fraser's Property" and together with its subsidiaries, the "Fraser's Property Group" or the "Group"), is a multinational investor-developer-manager of real estate products and services across the property value chain. Listed on the Main Board of the Singapore Exchange Securities Trading Limited ("SGX-ST") and headquartered in Singapore, the Group has total assets of approximately S\$39.8 billion as at 30 September 2023.

Fraser's Property's multinational businesses operate across five asset classes, namely, commercial & business parks, hospitality, industrial & logistics, residential and retail. The Group has businesses in Southeast Asia, Australia, the EU, the UK and China, and its well-established hospitality business owns and/or operates serviced apartments and hotels in over 20 countries and more than 70 cities across Asia, Australia, Europe, the Middle East and Africa.

Fraser's Property is also the sponsor of two real estate investment trusts ("REITs") and one stapled trust listed on the SGX-ST. Fraser's Centrepoint Trust and Fraser's Logistics & Commercial Trust are focused on retail, and industrial & commercial properties, respectively. Fraser's Hospitality Trust (comprising Fraser's Hospitality Real Estate Investment Trust and Fraser's Hospitality Business Trust) is a stapled trust focused on hospitality properties. In addition, the Group has two REITs listed on the Stock Exchange of Thailand. Fraser's Property (Thailand) Public Company Limited is the sponsor of Fraser's Property Thailand Industrial Freehold & Leasehold REIT, which is focused on industrial & logistics properties in Thailand, and Golden Ventures Leasehold Real Estate Investment Trust, which is focused on commercial properties.

The Group is committed to inspiring experiences and creating places for good for its stakeholders. By acting progressively, producing and consuming responsibly, and focusing on its people, Fraser's Property aspires to raise sustainability ideals across its value chain, and build a more resilient business. It is committed to be a net-zero carbon corporation by 2050. Building on its heritage as well as leveraging its knowledge and capabilities, the Group aims to create lasting shared value for its people, the businesses and communities it serves. Fraser's Property believes in the diversity of its people and are invested in promoting a progressive, collaborative and respectful culture.

For more information on Fraser's Property, please visit [frasersproperty.com](https://frasersproperty.com) or follow us on [LinkedIn](https://www.linkedin.com/company/frasers-property).

### **About Life Lab Resources Pte Ltd**

**Life Lab Resources** is dedicated to closing the food loop. By transforming food waste into valuable feed resources, we address the pressing need to reduce waste and ensure sustainable food sources.

Our innovative solution is akin to how Singapore successfully closed the water loop with [NeWater](#). We make closing the food loop easy with three simple steps:

1. *WasteMaster Treatment*: On-site food waste treatment with WasteMaster's proprietary technology, resulting in up to 80% net weight reduction. This process retains nutritional value, eliminates harmful pathogens, and creates a safe, nutrient-rich substrate.
2. *Bio-Refinery Plant*: The treated substrates become feedstock for microbial protein cultivation in our Bio-Refinery Plant, producing high-quality protein with all essential amino acids for aquaculture feed.
3. *Sustainable Integration*: We supply microbial protein to feed formulation companies. This seamlessly integrates food waste recycling into the food production ecosystem, reducing waste sent to incinerators and landfills while decreasing the need for new natural resources to produce food.

**About Green Eco Technologies**

Green Eco Technologies develops, supplies, and manages innovative, efficient and environmentally beneficial, on-site solutions for the recycling and re-purposing of organic waste as reusable resources.

Its innovative technology delivers environmental and cost savings and process improvements across all facets of organic waste management, reducing the impacts of food and other organic waste disposal.

As innovators in food waste management for our global environment, Green Eco Technologies continually pursues ways to improve and develop its technology to further reduce impacts on the environment. Its ongoing research and partnerships with key international bodies ensure that we remain informed and aware of global and local insights and initiatives, government legislation, technological innovation and news in the sustainability sector.

**FOR MEDIA QUERIES, PLEASE CONTACT:**

CHEN MeiHui  
Vice President, Head of Communications & Branding  
Fraser's Property Singapore  
E [fps.comms@frasersproperty.com](mailto:fps.comms@frasersproperty.com)

## ANNEX

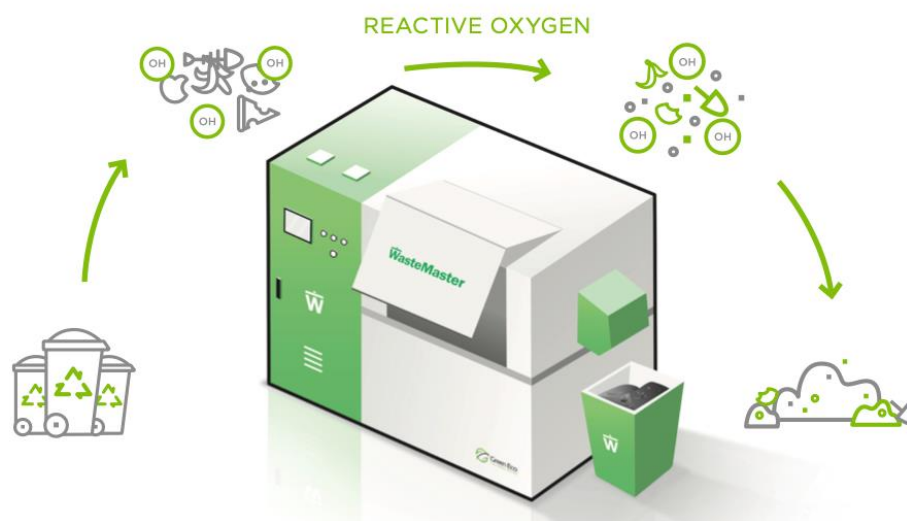
### **Green Eco Technologies' WasteMaster System**

WasteMaster is an on-site food waste processing and converting system manufactured by Green Eco Technologies, which uses a unique proprietary Mixed Ion Reactive Approach (M.I.R.A) technology to accelerate the decomposition of food waste without the need for water or any additives. For every 400kg of food waste loaded into the system, WasteMaster outputs approximately 100kg of residual material.

The WasteMaster conversion process diverts putrescible food waste from landfills from being flushed into the sewer system or incinerated, reducing greenhouse gas emissions. It eliminates on-site storage and frequent collections, making it ideal for sites generating significant organic waste.

The WasteMaster reduces the volume and weight of food waste by up to 80 per cent, changing it into an odour-free residual material with a high calorific value, that can be re-purposed for positive environmental benefits such as the production of green energy through anaerobic digestion.

The residue from WasteMaster supports the circular economy through repurposing food waste. The system provides a safer and cleaner work environment by eliminating both large amounts of rotting waste and frequent waste-collection vehicle movements. It reduces the number of collection bins required on-site.



#### How it works:

1. Food is loaded into the WasteMaster using a bin lifter.
2. No additives or water are required to activate the process.
3. Food waste is treated through a clean reactive-oxygen process.
4. The system agitates and separates the waste, aerating the waste to allow the charged air to mix with the food waste.
5. Water content is evaporated, and decomposition is accelerated.
6. The system automatically unloads the remaining residue at the end of the process.

The WasteMaster system requires only a few steps, operates with minimal user intervention and is fully automated. The waste conversion process takes less than 24 hours, and the system unloads automatically when completed.

It furnishes reports on food waste conversion through a client web interface, offering both standard and customisable reporting options. This data allows users to understand the exact volumes of waste their site is generating, and to analyse seasonal, monthly, weekly, or daily waste patterns, which can be used to reduce the actual amount of waste produced.

### Food Waste Upcycling Programme

Life Lab Resources (LLR) aims to capture and treat food waste upstream to retain calorific value and reduce logistical consolidation costs in an energy-efficient and low-resource manner. LLR utilises the WasteMaster to achieve an 80% reduction in food waste volume without the need for water, enzymes, bacteria, or high temperatures.

LLR will generate an innovation risk assessment paper to address food safety concerns with tests and trials currently underway.

#### New Food Creation Process

1. The upstream deployment of the WasteMaster valoriser system is conducted at major food-producing venues, allowing onsite waste processing to address odour, logistics, costs, and storage issues, ensuring energy and operational efficiency.
2. Valorising food waste produces a substrate with high calorific and nutrient content, addressing bio-security and pathogenic concerns. This storable substrate can be efficiently consolidated and transported to bio-refinery facilities for precision fermentation.
3. A nutrient-rich substrate is used in precision fermentation tanks to cultivate bacterial microbes, producing a single-cell protein that is processed into a cost-effective and sustainable aquafeed.
4. Food waste is processed into aquaculture feed, enhancing local food production resilience and reducing waste sent to incinerators and landfills.

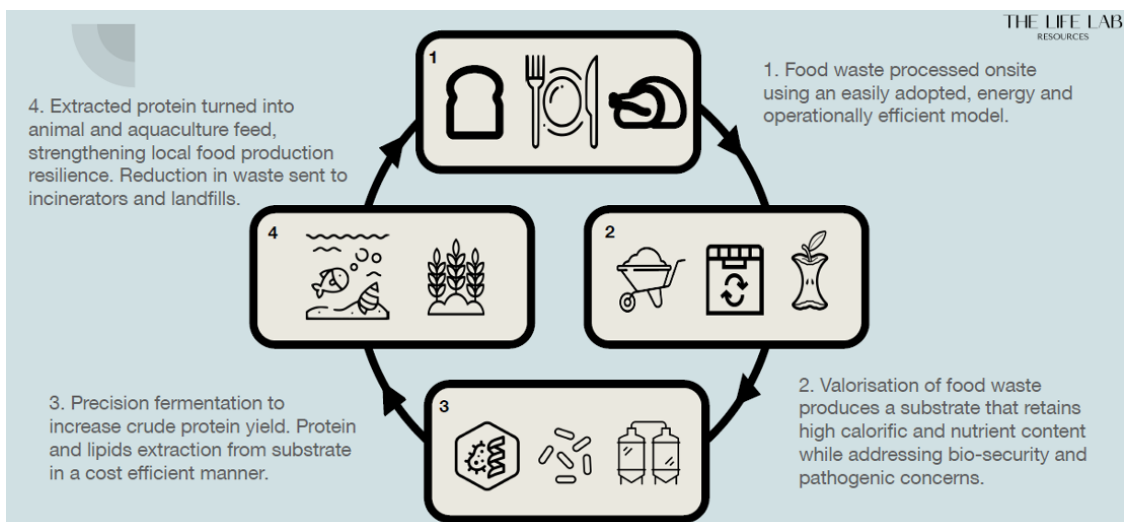


Figure 1: The Life lab Food Valoriser System Design (Precision Fermentation)