

Local businesses pioneer recycling solutions for waste oyster shells - ShellCycle Initiative: From Waste to Cement



Oysters are a beloved delicacy in Hong Kong, with imports reaching 3,300 tons in 2023. However, most shells usually ended up in landfills due to limited local processing capacity. Research shows that oyster shells contain 91% calcium carbonate, making them an ideal substitute in cement manufacturing. In light of this, local company Great Eagle Group is actively exploring the potential for upgrading and remanufacturing oyster shells.

Great Eagle Group, a signee of Food Wise Charter, has been spearheading Hong Kong's first cross-sectoral oyster shell upcycling programme in collaboration with The Langham Hong Kong, Eaton HK, and Green Island Cement Group.

In March 2023, a pilot programme was launched at The Langham, Hong Kong and Eaton HK to test the feasibility of the collection, cleaning, storage, and transportation logistics. The programme employs an “whole-community” approach: dedicated collection plates are placed at oyster counters in hotel buffets, encouraging customers to separate shells from other waste. Hotel staff members then clean and sort the shells for collection by Green Island Cement.

To date, the programme has successfully diverted approximately 60 tonnes of waste oyster shells from landfills (around 20 tonnes from the Group's hotels). If scaled up to handle all shells imported to Hong Kong in 2023, it could potentially reduce carbon emissions by 1,750 tonnes annually.



Unlike natural limestone, which takes millions of years to form, oysters complete their growth cycle in just four to five years, making them ideal renewable natural resources. Repurposing oyster shells for cement products can reduce the environmental hazards and transportation demands associated with natural limestone mining, thereby contributing to lower carbon emissions and more sustainable resources use.

The success of the programme relies on effective sorting and cleaning. To mitigate the risks of odours and pests during storage, the hotels established a comprehensive quality and hygiene management process, ensuring oyster shells are properly separated from food waste and cleared of residual meat.

At the operational level, the hotels redesigned their workspaces to accommodate compact storage containers that fit within space constraints and set up dedicated rinsing stations. Every detail—from the specifications of collection trays to staff allocation—underwent repeated testing and refinement. Simultaneously, the hotels actively promoted "clean recycling" awareness to guests, engaging all stakeholders in the key stages of collection, cleaning, and storage.

Furthermore, the Group maintains a close communication mechanism with Green Island Cement. Based on ongoing feedback from frontline staff regarding logistics and shell quality, the team continuously optimises transport efficiency and audit standards. This standardised procedure, which balances operational efficiency, staff safety, and hygiene, has successfully perfected the oyster shell upcycling value chain and realised circular economy goals.

Great Eagle Group is actively scaling the programme, in October 2025, expanded it to its flagship shopping mall, Langham Place. The expansion involves collecting discarded oyster shells and other shellfish (such as scallops and mussels) from our food and beverage tenants. Furthermore, the Group has leveraged multiple channels to promote the initiative and drive industry-wide participation. To date, the programme has successfully attracted around 18 other hotels and catering enterprises to join similar recycling efforts to upcycle oyster shell.



Beyond operational expansion, the programme is also collaborating with universities to research advanced applications, including ecological restoration and 3D printing, to support marine conservation and sustainable development in the consumer goods industry. Raising public awareness and engagement remains equally vital. Moving forward, the Group continues to partner with non-profit organisations to host educational campaigns and craft workshops that promote biodiversity and sustainable consumption.

By leveraging the high calcium carbonate content of oyster shells, this pioneering project transforms discarded oyster shells into a sustainable alternative raw material for cement production, establishing a circular economy model that demonstrates the synergy between environmental responsibility and commercial innovation. Professor Wong Ka-Wo, the convenor of the Subcommittee on Promotion of Food Wise Initiatives, commended the cross-sectoral collaborative initiative undertaken by the Great Eagle Group, which effectively transforms food waste into valuable construction materials, thereby advancing the principles of a circular economy.