

Title: Landfill: Recycler

Student: Samuel Ko

Supervisor: Dr Jia Beisi

Institution: University of Hong Kong

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Email: samko@live.hk

Description: Cease burying in landfills: 1/3 of the disposed refuse in Hong Kong is organic; it may be fermented into compost for plants, which are then feedback to all parks in Hong Kong. Besides, part of the waste may be recovered for building constructions. Recycled plastic bottles may be used to construct energy-efficient curtain walls for a waste-sorting factory as an alternative to landfills. Nevertheless, some of these bottles maybe planted with the compost from organic waste to enhance performance for instance thermal comfort and the control of glare. The geologically and ecologically damaged site will, therefore, continue to process incoming waste from the city, yet it will never be filled up and it becomes a new ground for waste management.

Landfill: Recycler

Hong Kong people dispose the most per person per day in the world and landfill has been the only solution of waste management. As much as one third of waste is organic matters, and together with another third which contains recyclable materials, every year Hong Kong buries HKD\$30 million dollars in landfills. Nevertheless, with ever growing volumes of waste disposal over time, landfills take up precious land resource in this crowded city. A controversial expansion plan of a landfill into the terrain of a legally conserved country park by the Government has been proposed. In strong opposition voices, this has been postponed.

This project begins with a planning perspective to call for a stop for burying waste, and propose an intervention to permanently extend the life of the Tseung Kwan O Landfill, which is expected to be full in 2013/4. It will then continue to explore how the design of architecture and the use of recyclable materials for such intervention can help achieve better environmental performance.

Urban Design and Landscape

As an alternative to burying, waste is sorted and recovered raw materials shipped away to reduce industrial demand for virgin sources, while organic waste is fermented into compost for plants. Seawater may be desalinated by the heat of the incinerator to produce portable water for the city and irrigation. Therefore, the damaged site will continue to process incoming waste from the city, yet it will never be filled up and it becomes a new ground of waste management. The site will gradually transform into a productive landscape with plants nurtured by the compost and will be feedback to the public parks in the city.

Architecture

Buildings take up 1/3 of the total energy consumption in Hong Kong, and factories consume 3-10 times more. The architecture, which facilitates the waste processing, should have minimal impact both visually and environmentally. Each procedure of the processing is assigned a specific volume; all volumes are sited to optimize the best microclimate conditions; for instance, the production volumes are all north facing to reduce cooling need. The buildings become a new ground in between the damaged ground and the expected ground; it is in-between creation and disappearance, destruction and construction, ending and beginning, chaos and order.

This project also raises the concept of using recyclable building materials. A contemporary technology that produces hollow plastic bricks from collected PET bottles is widely specified in this scheme. These bottles are translucent, durable, weather tight and partially load bearing. It reduces as much as 60% of the cost for cladding. The translucency of this material softens the visual quality of the buildings. Depending on the program, Less light may be admitted for the factory and more light may be required for the design studio building. Moreover, the possibility of vegetation also helps enhance the environmental performance such as thermal comfort, and blends the building with nature. These plants are nurtured by the fertilizer produced in site also by the incoming organic waste of the city.