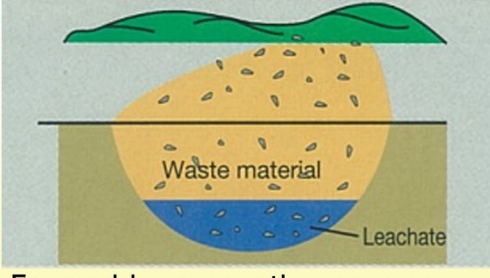


YAP'S PUBLIC LANDFILL SEMI-AEROBIC FUKUOKA DESIGN

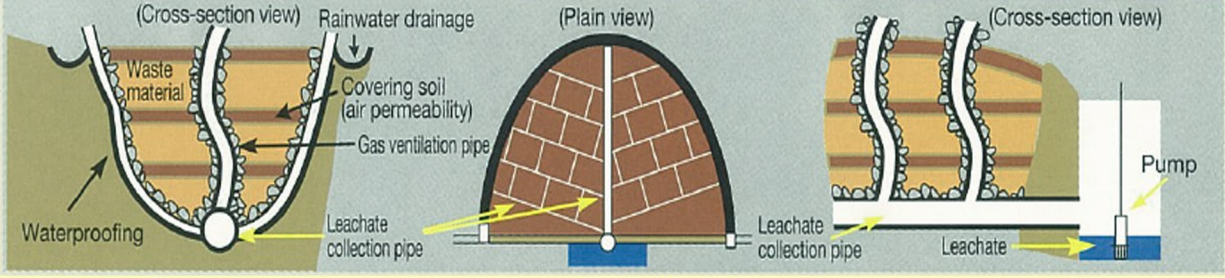
SOME TYPICAL LANDFILL DESIGNS

1 Anaerobic (without air) Landfill



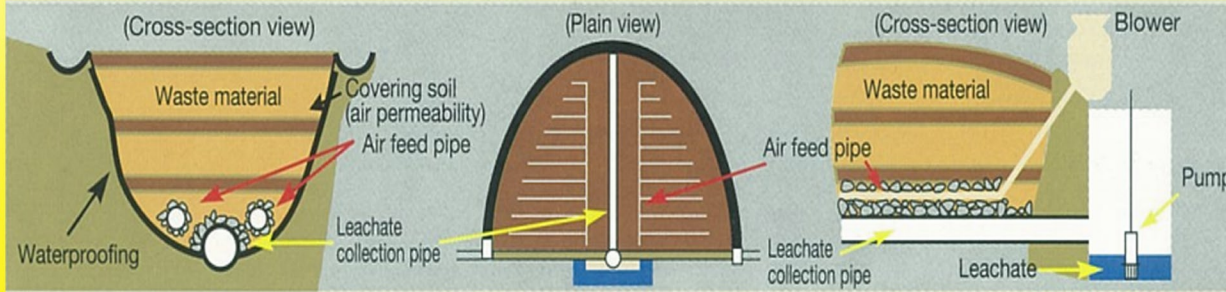
Formed by excavating an area or flatland, or disposing waste into a valley and covered with soil.

2 Semi-Aerobic Landfill



Leachate pipes installed are protected by small rocks, with wide cross-section open to air. Moisture inside landfill is low and kept aerobic by supplying air from leachate collection pipes.

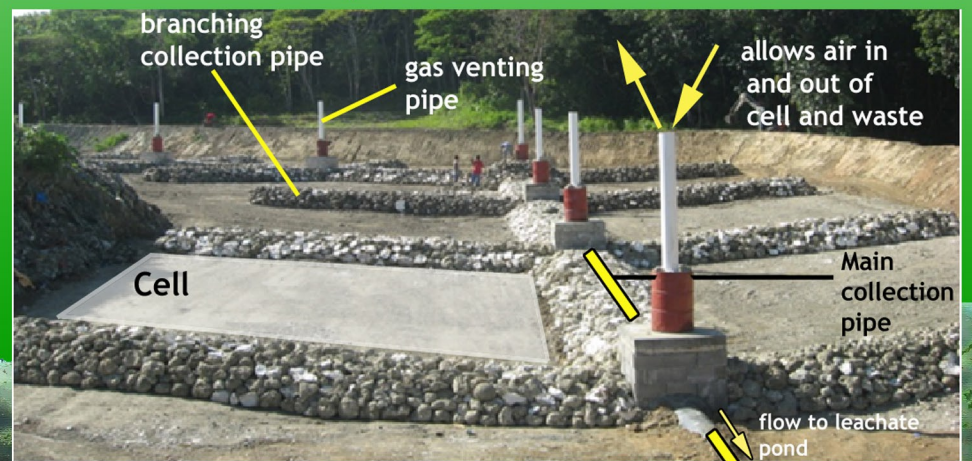
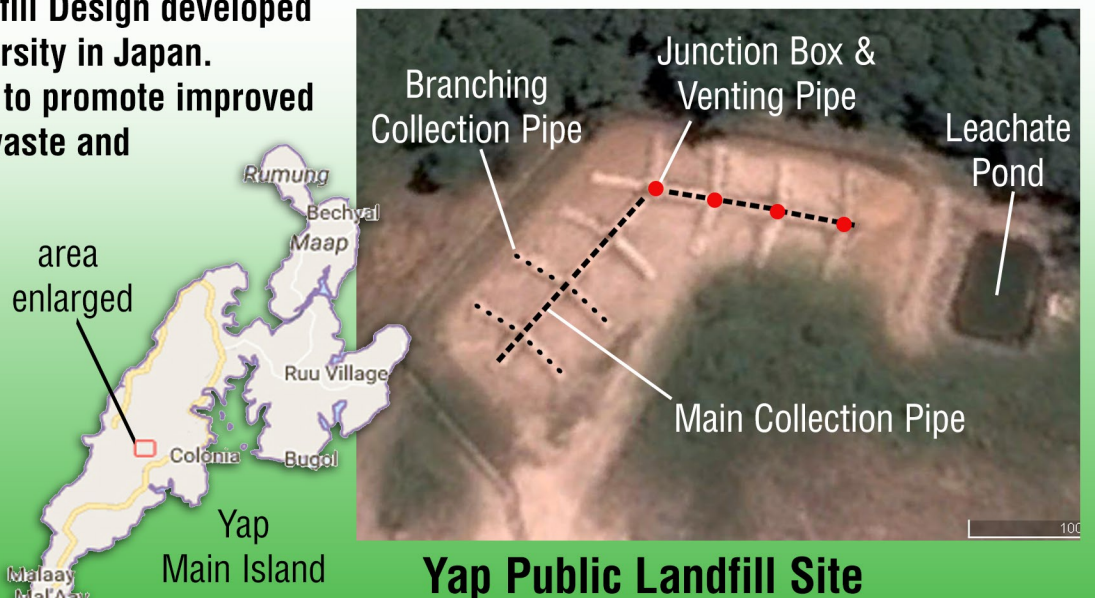
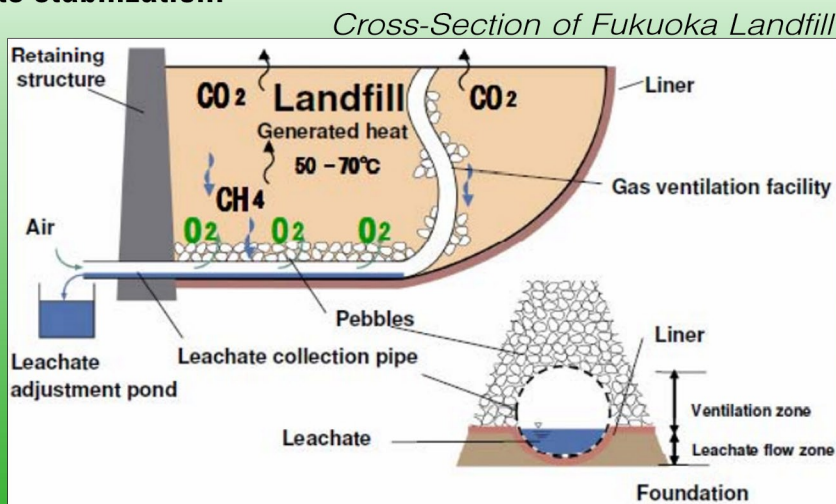
3 Aerobic (with air) Landfill



Leachate collection pipes are installed to collect leachate; air pipes are also installed to pump air into the waste to maximize internal aerobic activity and breakdown of waste.

YAP'S PUBLIC DUMP SITE RECONSTRUCTED

Yap's only public open dump site was reconstructed following the Fukuoka Semi-Aerobic Landfill Design and re-opened in 2014. The 'Fukuoka Method' is the Semi-Aerobic, Sanitary Landfill Design developed in collaboration between Fukuoka City and Fukuoka University in Japan. Semi-aerobic means that air is channeled into the landfill to promote improved microbial activity and therefore faster breakdown of the waste and its stabilization.



Sanitary - landfill is contained w/ clear boundaries and embankments, it is lined on the bottom by a HDPE liner or compacted clay; leachate is collected as soon as it is discharged, into a pond and contained so that it doesn't go out into the environment.

Fresh air is brought in from the pipes - enhance waste stabilization, improved leachate quality;

Release gas from gas ventilation pipes - reduced gas pressure and the chance of gas explosion;

Compaction of waste - reduced land consumption; **Reduced production of Methane Gas (CH₄)** and increased Carbon Dioxide (CO₂) - global warming potential of Methane is about 25 times more than that of Carbon Dioxide; and **Cost-effective** as initial cost and maintenance cost is lower



Yap's Public Landfill Site was reconstructed following the Fukuoka Semi-Aerobic Landfill Method and re-opened for use in February 2014

<https://kommusuri.files.wordpress.com/2015/08/fukuokawastemanagementmethod.pdf>