

*Waste
Management*



AIRPORT WASTE COLLECTION SYSTEMS

WICG/ARTEL® ELEKTRİFİKASYON ÜRÜNLERİ LTD. ŞTİ.



Why do we need a Waste Management at an airport ?

Huge amount of waste is generated from restaurants, shop outlets, onboard catering and administration offices at any transport terminal. Cleanliness and security levels have become the major concern to ensure high quality of services. Infrastructure facilities have to be of the highest standards from today's public requirements

- Waste is generated continuously, every day, with various "quality"
- Waste can be hazardous to humans and the Ecosystem
- Waste disposal can be expensive and can become a relevant cost factor
- Increased knowledge on airport environmental impacts
- Basis for mitigation and cost savings

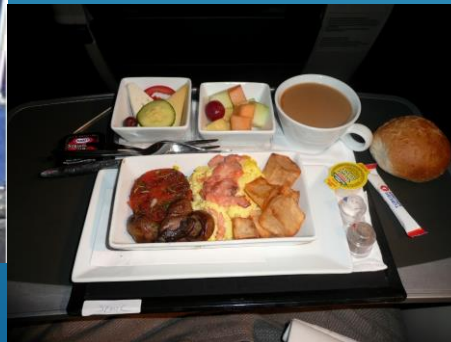


Important questions:

- Who are the partners?



- Airport Operating Company: waste from offices, airfield maintenance
- Airline Operators: waste from aircraft cabin/galley, maintenance
- Handling Agents: waste from aircraft cabin/galley
- Catering Companies: waste from meals and returns
- Cargo Companies: waste from packaging materials
- Concessionaires: waste from offices, shops, restaurants, ...



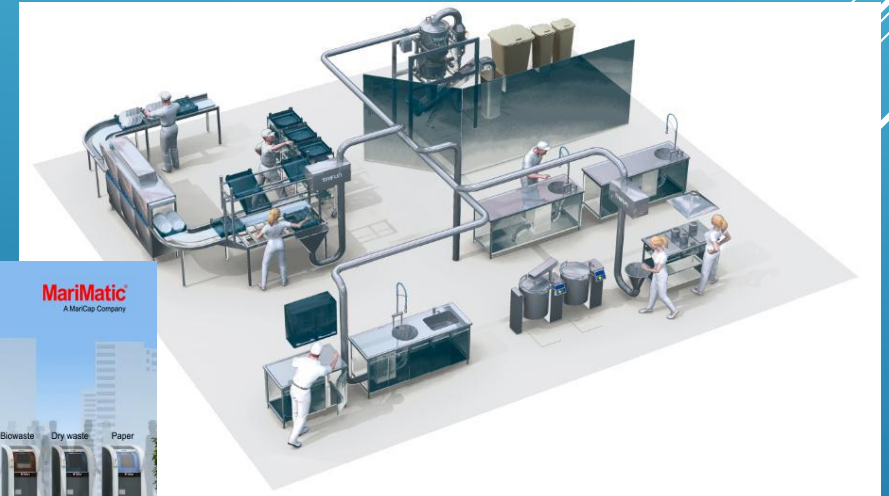
► What is the System?

► SOLID WASTE COLLECTION SYSTEM

- WASTE CHUTE WITH LOADING DOORS
- TRANSFER PIPES
- VACUUM BLOWERS
- COMPENSATORS AND CONTAINERS

► KITCHEN WASTE COLLECTION SYSTEM

- ORGANIC WASTE VACUUM STATIONS
- BIOWASTE VACUUM STATIONS
- LOGIC CONTROLLER
- VACUUM CONVEYING SYSTEM



► What is the System?

► SOLID WASTE COLLECTION SYSTEM

- WASTE CHUTE WITH LOADING DOORS
- TRANSFER PIPES
- VACUUM BLOWERS
- COMPACTORS AND CONTAINERS

► COMMON EQUIPMENT FOR SOLID & KITCHEN WASTE

MANAGEMENT AND CONTROL PANELS

► KITCHEN WASTE COLLECTION SYSTEM

- LOADING HOPPERS
- TRANSFER PIPES
- RECEIVING TANKS&FILTERS
- VACUUM BLOWERS
- STORAGE HOPPERS
- CONTAINERS & COOLING ROOMS



► WASTE COLLECTION SYSTEM AT AIRPORT

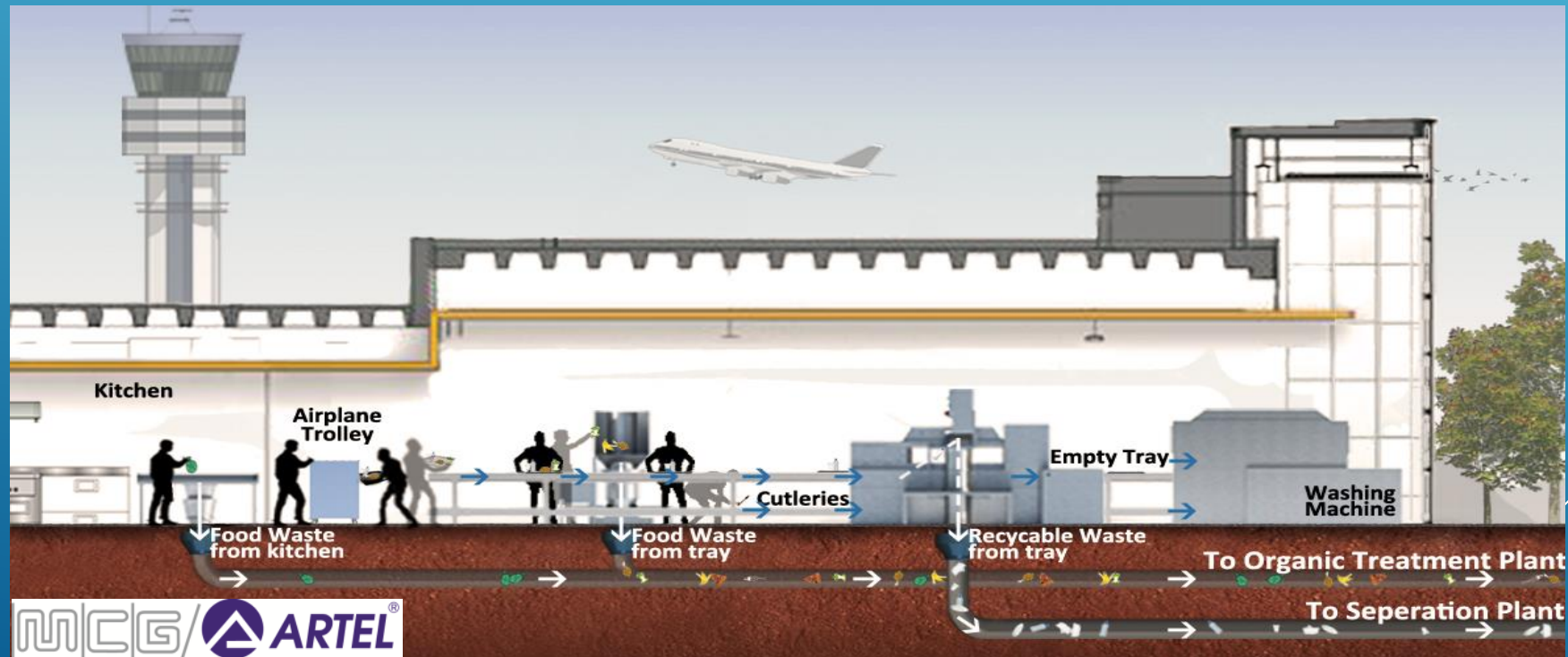
We address these issues through installing an underground piped infrastructure that transports all solid waste generated from the building at a high speed to the Central Waste Handling Facilities. Waste is disposed through the chutes and outdoor loading stations, directly transported via underground pipes to a sealed container. Waste is stored in a sealed container and the frequency of waste removal eliminates the unpleasant smell. The security level increases with no additional labour and trucks accessing the terminal building to collect garbage manually.



► KITCHEN WASTE COLLECTION SYSTEM AT AIRPORT

The majority of waste is clearly recyclable and if separated, it will substantially reduce the overall expenditure in the complex world of waste management. When food waste is separated, collected and treated effectively, it eliminates the methane gas release from landfills that is 20 times worse than CO₂ in terms of green house gases (GHG).

The system is able to help in the transformation from waste to valuable resources, by capturing wet food waste effectively from the source of generation in kitchens via suction point inlets and collecting them in the containers.



What is the main strategy?

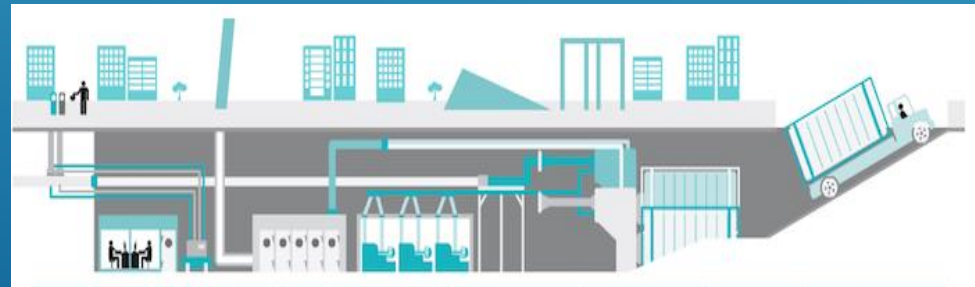
- ▶ 1. Prevent and mitigate origination of waste
- ▶ 2. Waste Treatment
 - Reuse of packaging materials
 - Reduction of wrapping etc.
 - Separation (at point of origin or at waste Management Center)
 - Recycling
 - Incineration – optional (combined with heat production)
 - Decontamination



Waste Collection has a major problems currently faced by the authorities in managing the waste collection and management. Especially at the peak hours, huge amount of waste should be collected via regular collection schedules. Due to the high number of separate collection points, it needs extra labour and even time.

Automated Waste Collection Systems (AWCS), capable of being applied in the same manner as modern utilities to serve a large development, with the waste being transported to a collection centre up to 2.5km away.

Through the use of the **Automated Waste Collection Systems** , developers (during the planning stage of a new development) are able to strategically locate the Central Waste Handling Facility (CWHF), to prevent garbage trucks having to access their development areas to collect garbage.



The system is able to provide all fractions of the complex building in waste collection management program. It brings many advantages like hygien, time saving and cost effective solutions for Airports and complex commercial buildings. Its also prevent the airport area from heavy waste collection truck traffic and gives you an option to make a waste storage rooms apart from airport valuable area.

All collected waste after separation process in the storage area, will be delivered with the special sealed containers to recycling area..



MECCA SAUDI ARABIA

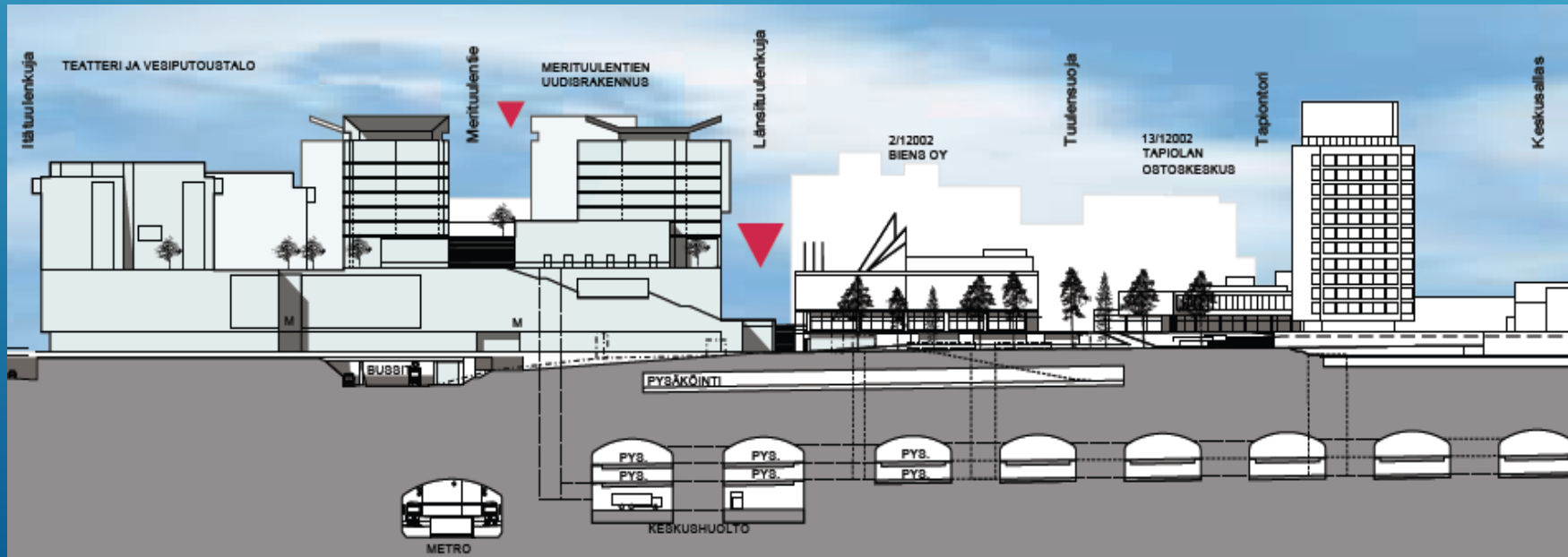
The biggest AWCS in the world

- Mixed waste, packing materials
- Maximum daily capacity 900.000 kg
-
- 74 pcs dia. 800 mm gravity chutes
- Over 400 pcs waste hopper doors
- Piping ~ 30 km
-
- Project started 2012
- AWCS build up 2014 -



ESPOO TAPIOLA THE BIGGEST AWCS IN REAL ESTATES IN FINLAND

- ▶ Joins both old and new retail buildings into one AWCS
- ▶ 3 fractions: mixed waste, cardboard and separate Biowaste system
- ▶ Waste and cardboard is collected through gravity chutes
- ▶ Waste collection terminal is 25 m under the ground in car parking facilities
- ▶ System build up 2014 - 2018
- ▶ Piping 400 m and gravity chutes 350 m



Thank you.



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