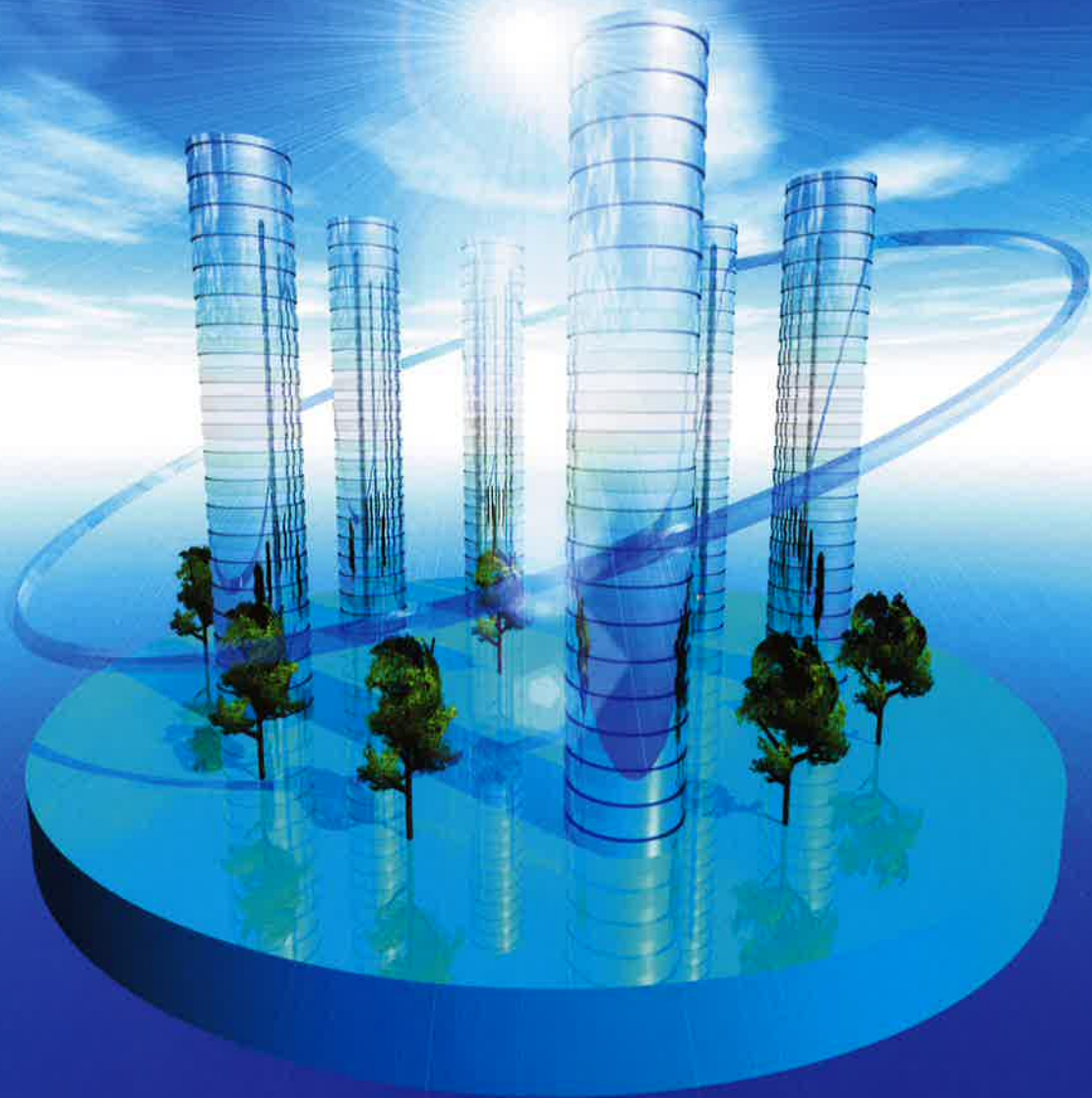


**ShinMaywa**

# Integrated Refuse Collection and Transportation System



# Refuse Transfer Station

Refuse is first collected by a number of compactor truck and then transferred to a large-size container at refuse transfer station for efficient transportation.

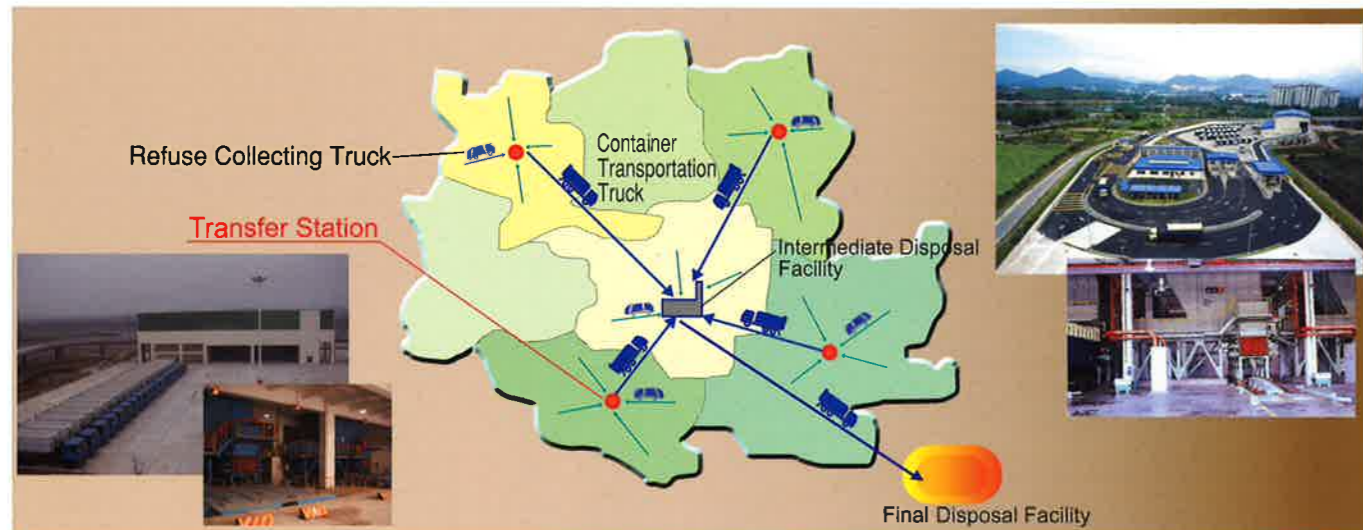
## The Effects of Refuse Transfer Station

### (1) Reduce transportation cost and ease traffic congestion

Instead of a long distance transportation of compactor trucks, collected refuse is compressed to reduce its volume at the transfer station and reloaded into containers. Then, the containers are to be transported by large trucks or on railway in volume. This "Transfer Station" reduces the transportation cost, eases the traffic jam.

### (2) Improvement of amenity

Applying a large container transportation truck, which has the similar outlook with general truck, will improve the image of the refuse collecting truck so that residents feel more comfortable with accepting refuse.



## Transfer Methods

### The Compactor-Container Method



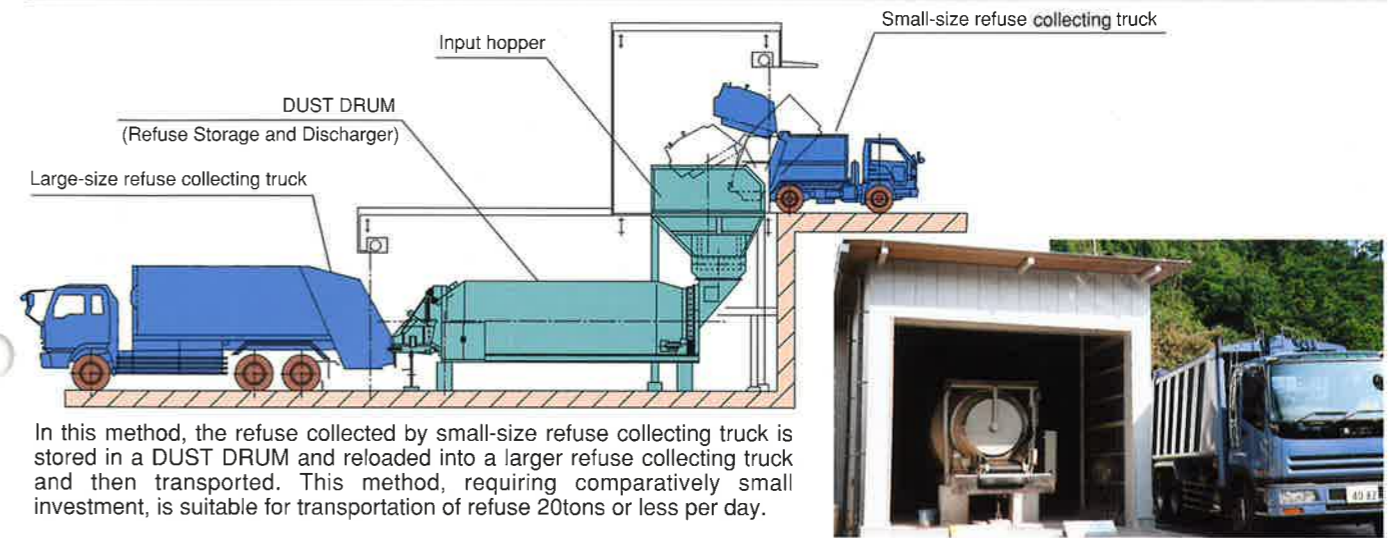
### Features and mechanism of transfer container with double shift type tailgate

- Since a tailgate door becomes a compactor's push plate, this type of container simplifies the handling and prevents refuse from scattering.
- As a sub gate of the container moves up and down synchronizing with the compactor's gate equipment, the throwing opening of a container is enlarged, resulting in improved efficiency in pressing refuse.
- "Separate operation for each sub gate is made possible when detaching the container."
- "As the clearance between the push plate and the refuse is narrowed after detaching container, it prevents the refuse from scattering."



Tailgate door of the container

## The DUST DRUM Method (Mechanized Refuse Storage Equipment)



In this method, the refuse collected by small-size refuse collecting truck is stored in a DUST DRUM and reloaded into a larger refuse collecting truck and then transported. This method, requiring comparatively small investment, is suitable for transportation of refuse 20tons or less per day.

Hikita-cho Refuse Transfer Station

## Transportation Methods

### Container Transportation Truck Method

### Shipping Method



The container packed with refuse is loaded onto a container ship with landing lift and then transported by sea. This method, allowing free operation with no regard to the traffic congestion, reduces the transportation cost and mass transportation is realized.

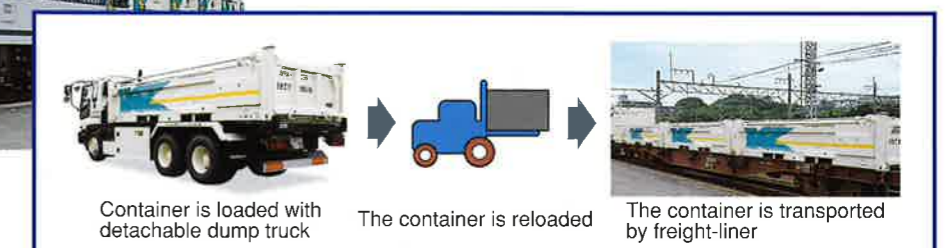
Higashi Shinagawa Refuse Transfer Station

### Railway Method



Transporting by railway

Refuse collected by various types of collector are loaded onto a large container or a freight container and transported on railway. As the existing freight-traffic lines can be used, this method reduces the long distance transportation cost with no regard to the traffic congestion and mass transportation is realized.



Container is loaded with detachable dump truck

The container is reloaded

The container is transported by freight-liner

# References of Refuse Transfer Stations / Recycling Facilities

## ● Growing number of Refuse Transfer Stations and Recycling Facilities throughout Japan and overseas



Himi-city Recycling Plaza



Toyama-city Environmental Relay Center



Esashi-cho Clean / Esashi Recycling Center



Relay Port Kayabe (Sunahara-cho)



Shinjuku Refuse Transfer Station, Tokyo



Higashi Shinagawa Refuse Transfer Station, Tokyo



Kanagawa Refuse Transfer Station, Yokohama City



Western Tottori Public Administration Recycling Plaza



Kamakura-city Fueda Recycling Center



Arao city Refuse Relay Facility Relay Center Togu-nai (Kumamoto)



Chiran Refuse Transfer Station



Tokushima-city Refuse Transfer Station



Nanbu Regional Clean Center, Takamatsu



Refuse Relay Center, Ikoma City



Kuala Lumpur Refuse Transfer Station



Jakarta Refuse Transfer Station



Xian Refuse Transfer Station



Bangkok Refuse Transfer Station

# Environmental Vehicles

Crushing and Compacting Type Refuse Collector

## G-PX TOWN PACK

ShinMaywa's Town Pack is Japan's No.1 selling compression-type refuse truck. Integrating our DNA in performance, functions, and reliability, it projects the beautiful form full of elegance, equipped with abundant user-oriented new functions.



Crushing and Compacting Type Refuse Collector with Refuse measuring device

## TOWN PACK

Town Pack with strong compression capability that has enjoyed reputation for its efficiency in operation, is equipped with the trash metering device enabling automatic measurement, recording, and counting as to when, how much, in what container the trash is accumulated upon collection.



Crushing Compacting Dual Chamber Type Refuse Collector

## TOWN PACK "BUNBETSU-KUN"

This collector permits collecting two different types of refuse at once, e.g. plastic bottles and other plastics or newspapers and cardboards and so forth, to separately accumulate them before discharging from right and left at recycling facility.



Multi-Chamber Separation and Classification Recyclables Collector

## RECYCLE PACKER

It simplifies collecting sorted valuable resources such as cans, plastics, and bottles, and exposes each separately at recycling facility.



For Detachable Container System

## Compacter-Container

The compression device equipped in the container compress the trash before the storage. The sealed container is sanitary, confining the trash inside, so the trash does not scatter or the odor is not exposed to the outside.

(Two-compartment type that allows a sort-out collection and transportation is available. See the picture.)



Detachable Container System

## ARM-ROLL

"ARM-ROLL" we proudly present as No.1 sales product permits loading/unloading and transporting several containers with a carrier (truck body). The combination with the trash compression compactor will further increase the efficiency of the trash collection.



Detachable Container System

## Container and Compacting Type Refuse Collector

The whole body of "TOWN PACK", leading compression-type trash collector of 20-year and more, was made to become a container for ARM-ROLL. An engine-equipped type container can be operated independently, thus greatly enhancing the efficiency in operations for both truck and container.



Polyester-Form Collector

## Expanded Polystyrene Dissolution Equipment

As it is using the melting and reducing method with "esters solvent", the polyester foam (polystyrene) can be collected without changing its chemical structure and be made reusable as recycled polystyrene materials. Polyester-form is reduced from a fiftieth to hundredth in volume.



# Mechanized Refuse Storage Equipment

## DUST DRUM and DUST SCREW

### The benefits of Equipments:

#### Before introduction

##### ■ The storage space

As collection days are limited, piles of garbage bags are placed in verandas or trash spaces. Accumulation of flat piles is also limited in space, especially when bulky trash such as papers increases or the volume is large, creating the overflow of garbage bags outside the designated place.



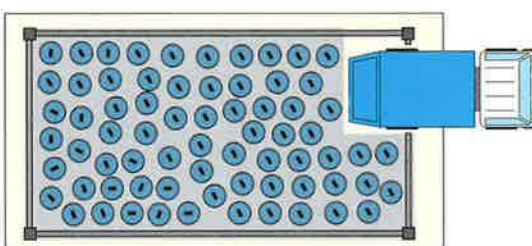
##### ■ The storage environment

Without preparing the special containers for kitchen waste, used tea leaves, general waste, or tobacco waste, scattering trash or leaking waste water would cause odor or bugs, and it was quite unsanitary.



##### ■ Refuse handling

Loading into a refuse collector is done by hands; therefore, it is time-consuming and painstaking. In addition to that, it creates a problem of scattered trash.



DUST SCREW (ShinMaywa's refuse storage and discharger) requires approximately 20% the place usually assumed for the refuse collection room.

#### After introduction

##### Improved efficiency in accumulation

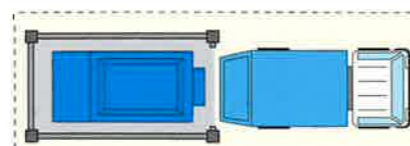
As the space can be used vertically, it allows a larger trash to be accumulated compared to the flat piles of garbage bags. There are no needs to worry about trash scattering, and throwing the trash into the machine is very easy.

##### Sanitary accumulation

As sealed storage method is applied, it is very sanitary with no trash scattering, leaking waste water, odor, or bugs. In addition, the storage in container is superior in terms of fire prevention.

##### Easy handling

Loading into a collection truck requires only pressing a button; existing trucks can be used to collect the trash, with no special collection truck is necessary.

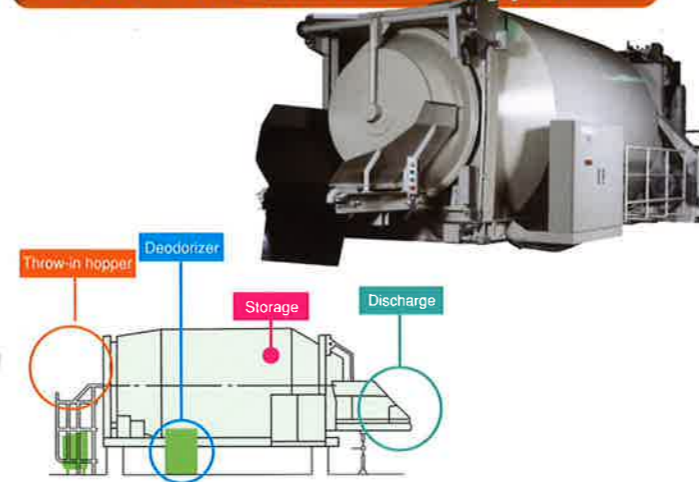


#### < Requires less space >

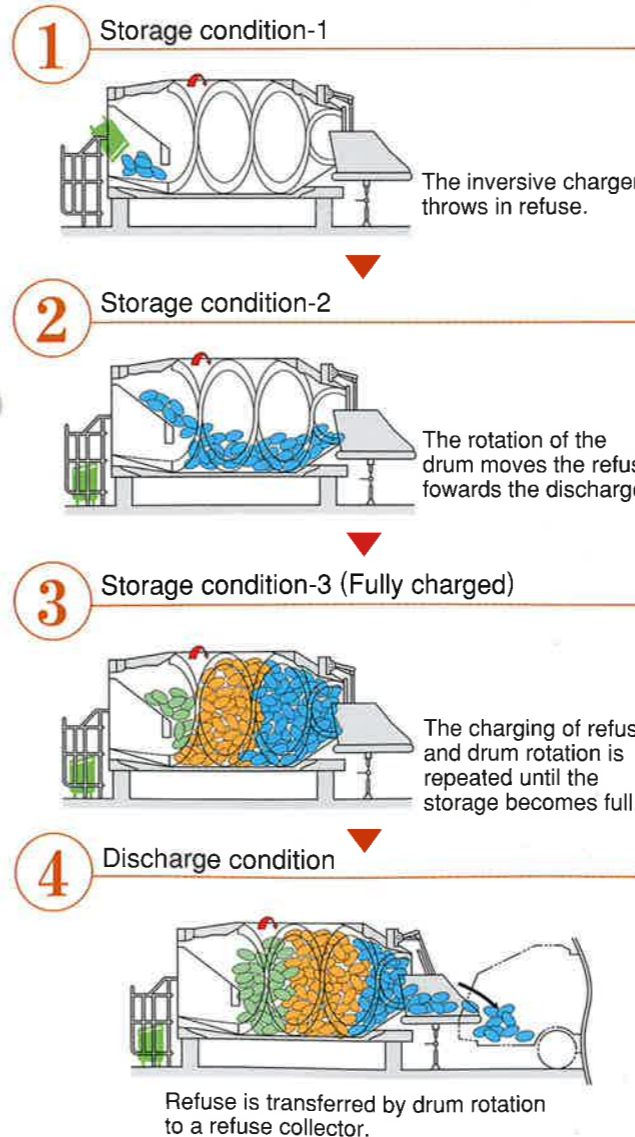
About 80% of the space can be made meaningful use of residents, attendants, or for environmental purposes.

When introduced

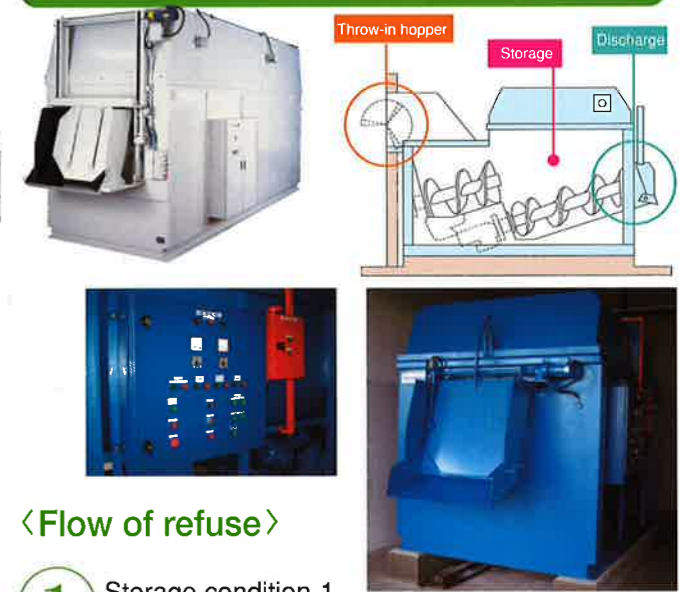
## DUST DRUM (Drum Type)



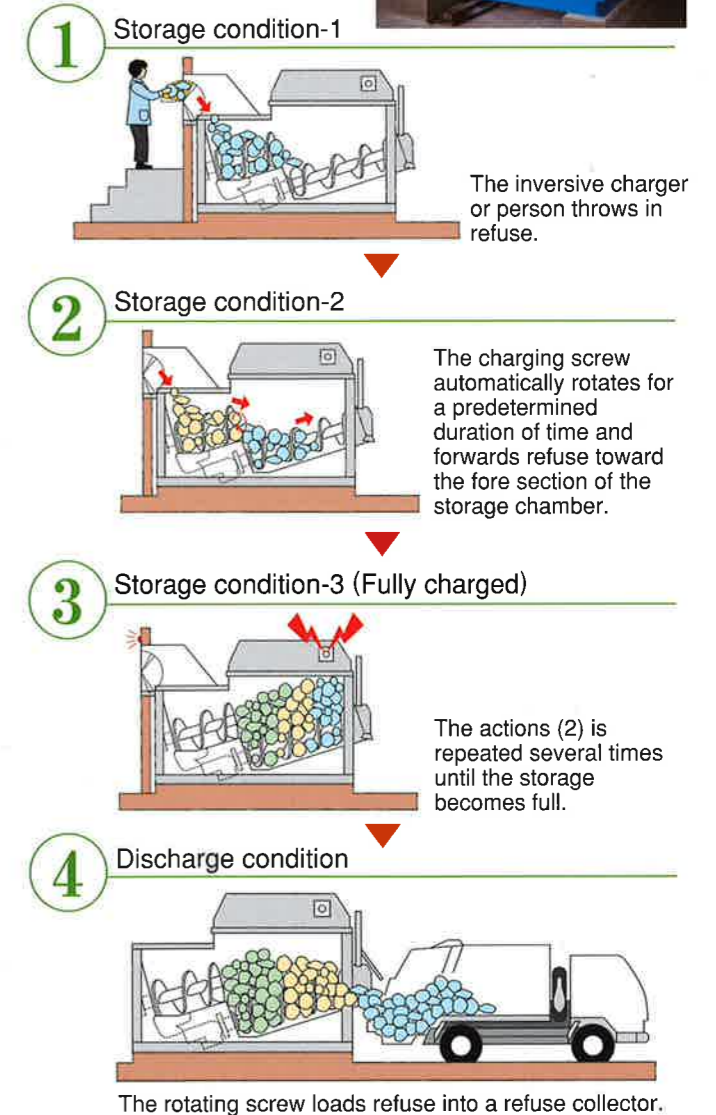
### < Flow of refuse >



## DUST SCREW (Screw Type)



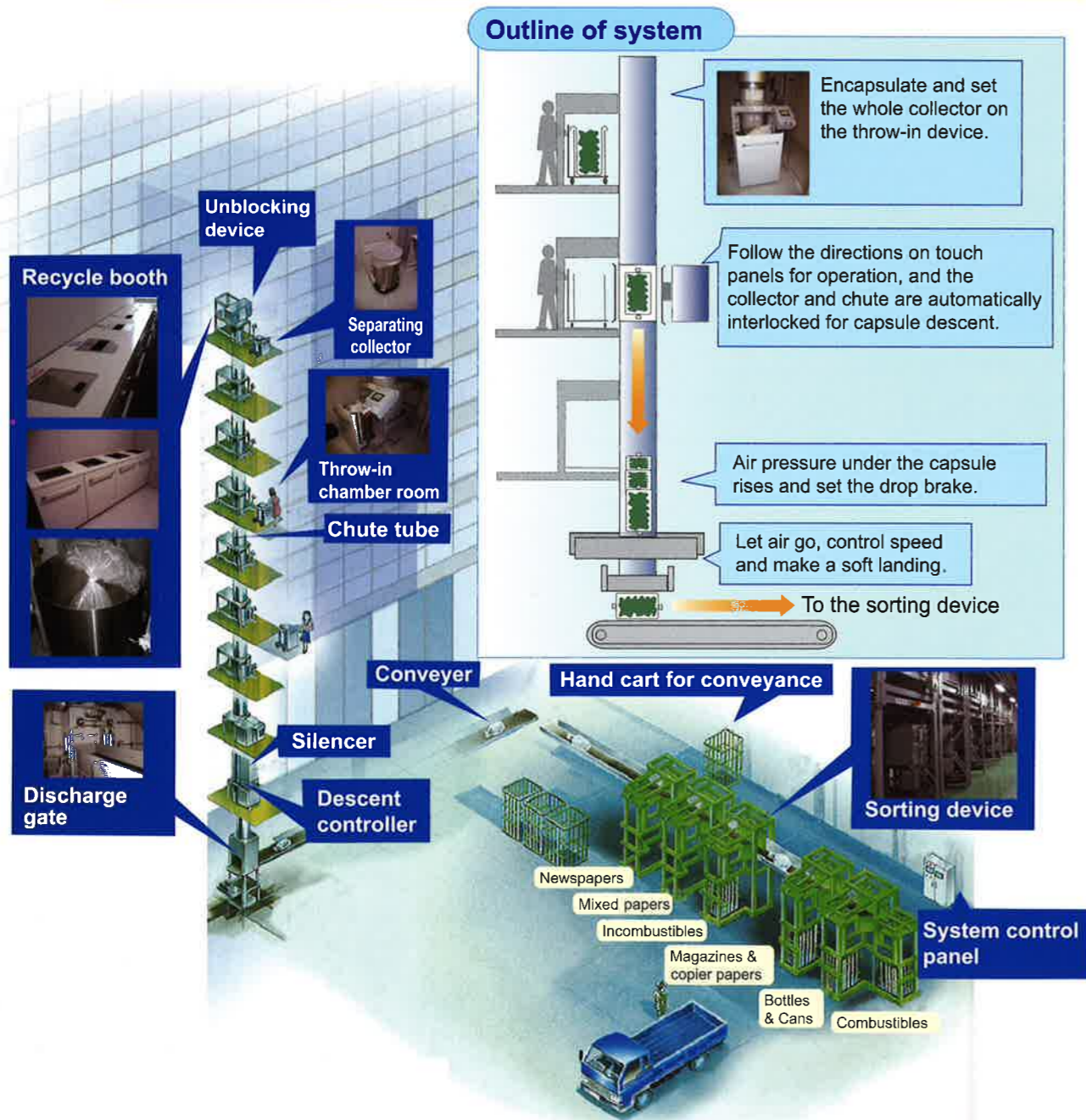
### < Flow of refuse >



# Building Vertical Refuse Handling System

## High-Rised Building Waste Regulated Collection System

- Recycle** Automated separated collection & storage
- Space saving** Convey large amount of refuse in high speed
- Energy saving** Apply force of gravity and air resistance
- Hygienic** Clean and odor-free by encapsulation



# Pneumatic Refuse Collection and Transportation System

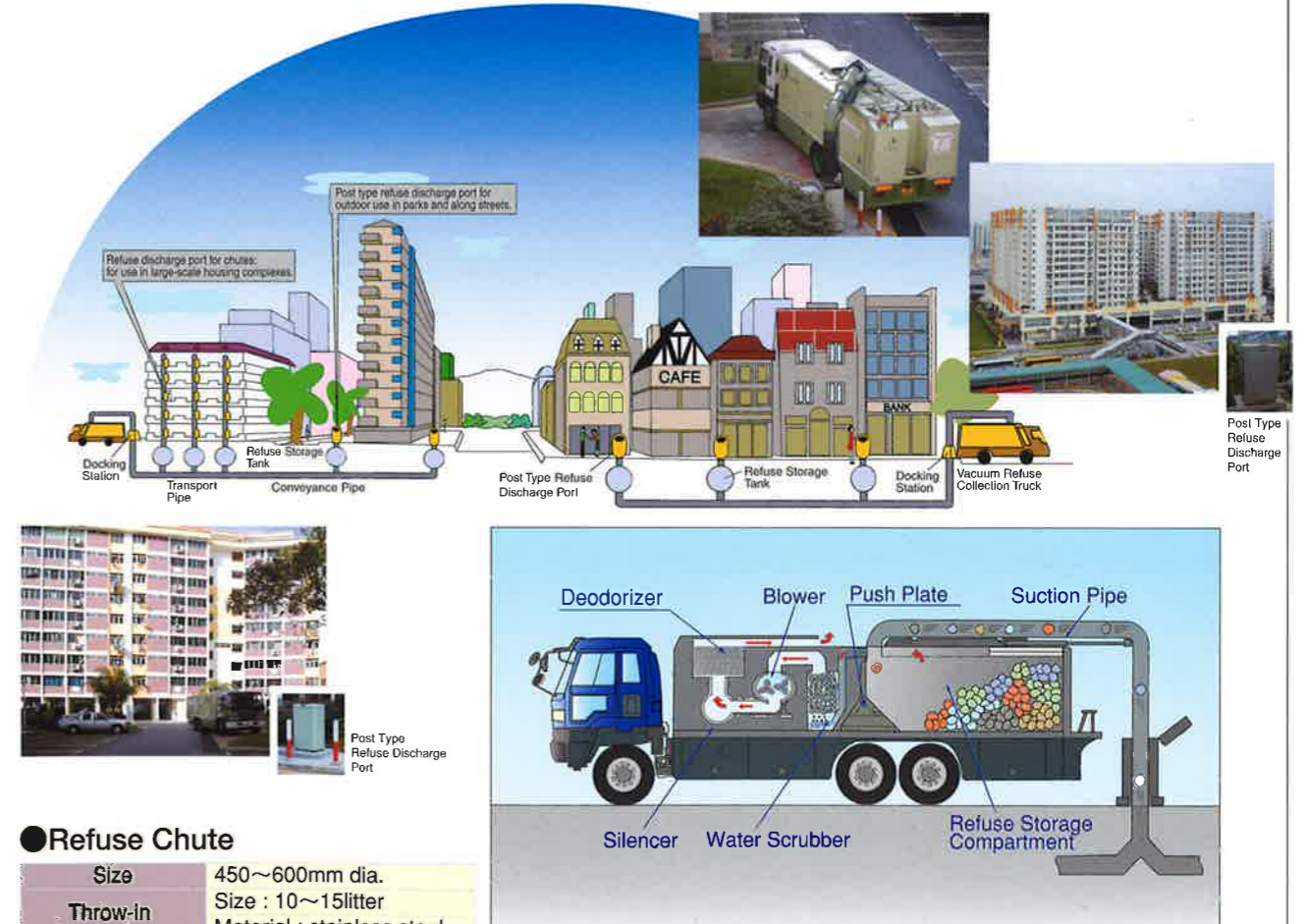
An innovative refuse collecting system with vacuum type refuse collection vehicle originated by ShinMaywa. A desire that refuse can be disposed of at any time and moreover the residential areas are throughly free from piles of refuse which are completely realized by ShinMaywa.

## “TECHNOCUUM” Pneumatic Refuse Collection and Transporting System

Refuse can be disposed of by residents at any time through a refuse chute or outdoor post type throw-in hopper regardless of collection date.

The refuse in storage in an underground storage tank is pneumatically transferred to “TECHNOCUUM” vacuum type refuse collection vehicle by vacuum power.

Totally enclosed construction of the “TECHNOCUUM” satisfactorily prevents emission of foul odor.



## Our Overseas Branches



Specifications and dimensions are subject to change without notice.

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