

Introduction to





Introduction

- ❖ Established in Singapore since 1972, approaching our 50 years in business
- ❖ Manufacturer and Solution Provider for Transport and Waste Engineering Equipment. To fuel and sustain our business, our range of Equipment comes with an option for SMART (ZENITH Connect) for difference applications.
- ❖ ZENITH is the largest manufacturer for HDB Refuse Handling Equipment since 90's, we had installed more than 3500 units



5 main DIVISIONs

- 1) Transport DIVISION**
- 2) Road Tanker DIVISION**
- 3) Defense Equipment DIVISION**
- 4) LIQUID Waste Handling DIVISION**
- 5) SOLID Waste Handling DIVISION**

ZENITH TRANSPORT DIVISION

► Builder for Special Propose Trailers and Recovery Vehicles





ROAD TANKER DIVISION

► Constructor for Petroleum / LPG / Chemical / Cement Tankers



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DEFENSE EQUIPMENT DIVISION

► Defense Equipment



DECONTAMINATION SYSTEM for Chemical & Biological



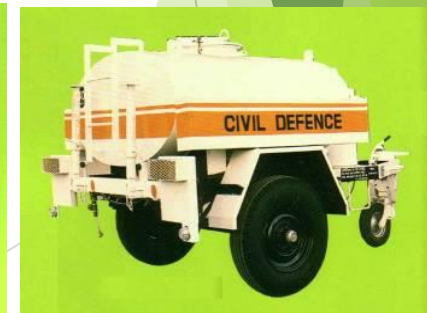
GENERATOR TRAILER



WATER TRAILER



MEDICAL CONTAINER



WATER TRAILER



LIQUID WASTE HANDLING DIVISION

- ▶ Design and Build Super Sucker, High Pressure Water Jetting or Flushing System, combinational Vacuum tanker with recycling features for Toxic or Greasy waste



ZENITH SOLID WASTE HANDLING DIVISION

- ▶ BUCHER Range of Sweepers from Diesel driven to Electric Driven for Municipal





SOLID WASTE HANDLING DIVISION

- Builder Rear Loader, Side Loader and Twin Loader with SMART options





SOLID WASTE HANDLING DIVISION

- ▶ Manufacturer for Refuse HANDLING Equipment (Stationary or Mobile) with SMART OPTIONS

ZENITHMATIC



ROTATING DRUM



DUSTSCREW /
SPIRAL Waste bin



Roll On/off Refuse Compactor



ZENITH SOLID WASTE HANDLING DIVISION

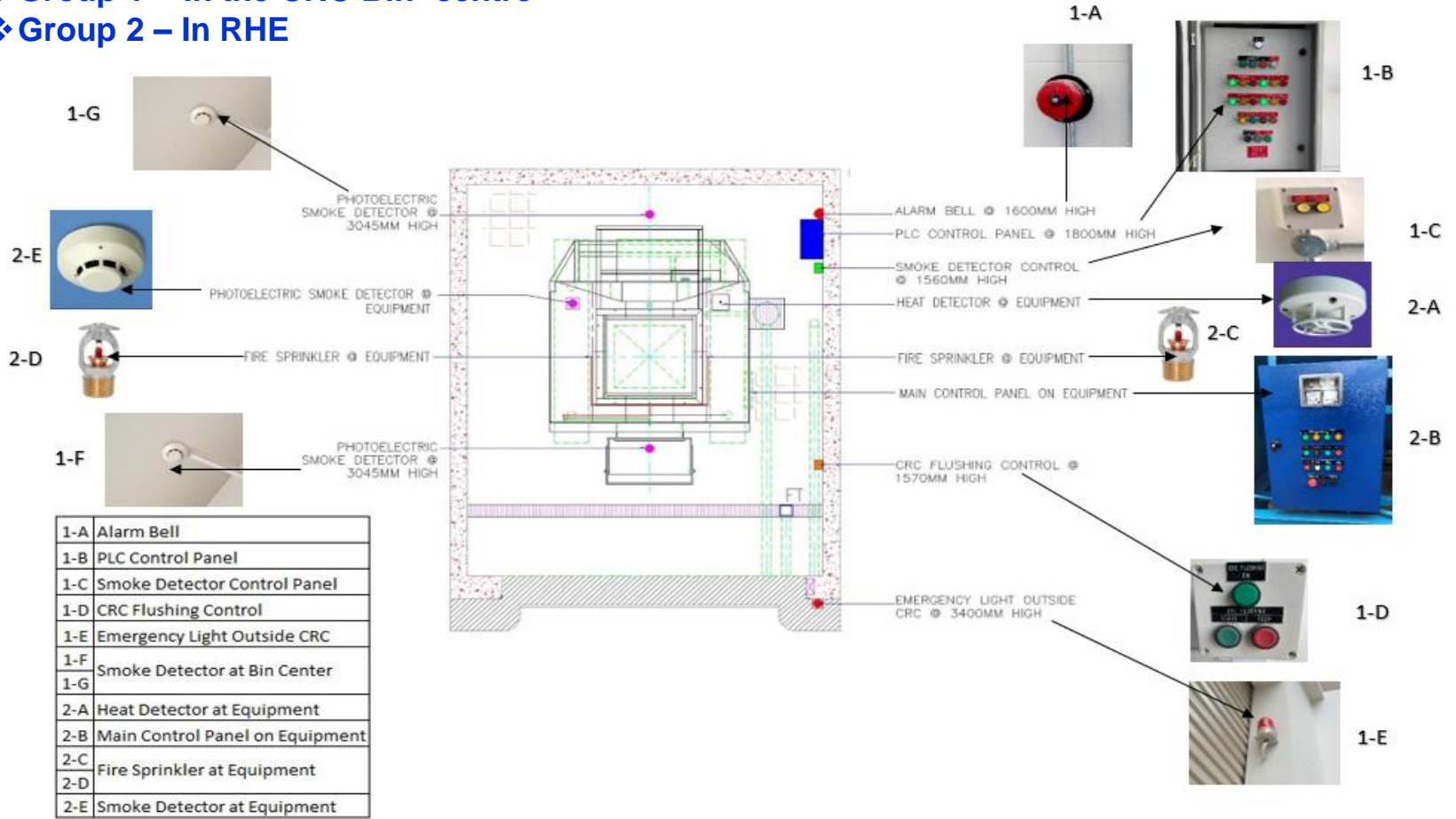
- ▶ Safety aspects of Refuse Handling Equipment (CRC RHE) for HDB development





REFUSE HANDLING EQUIPMENT Plant (CRC RHE) - FIRE PROTECTION SAFETY SYSTEM

- ❖ Group 1 - In the CRC Bin- centre
- ❖ Group 2 – In RHE





Refuse Handling Equipment (CRC RHE) - SAFETY FEATURES



Safety Shutters for Isolation of Machine from the chute

Safety shutters are incorporated at the chute connection to completely isolate the refuse from dropping into the storage chamber. This is only necessary when maintenance has to be carried out inside the storage chamber.



Covers for Driving Parts

Covers are provided for all driving parts and they can be easily opened to facilitate the maintenance.



Buzzer

This is to notify a breakdown of the components such as motor overloaded etc.



Emergency Stop Button

This button is to stop all operations at the components such as motor overloaded etc.



ELCBS and Thermal Relays

These are provided for earth leakage, short-circuit and overloading for the motors.



Protection of Electrical Devices

Phase failure and phase reversal are provided to protect electrical devices against abnormal power supply.



Meters

Meters are installed to facilitate the detection of irregularities in current and voltage.



Automatic Fire Protection

When fire occurs in the storage chamber of the refuse handling equipment, heat detector and fire alarm will be activated. The solenoid valve will be turned on automatically and water will spray to extinguish the fire.



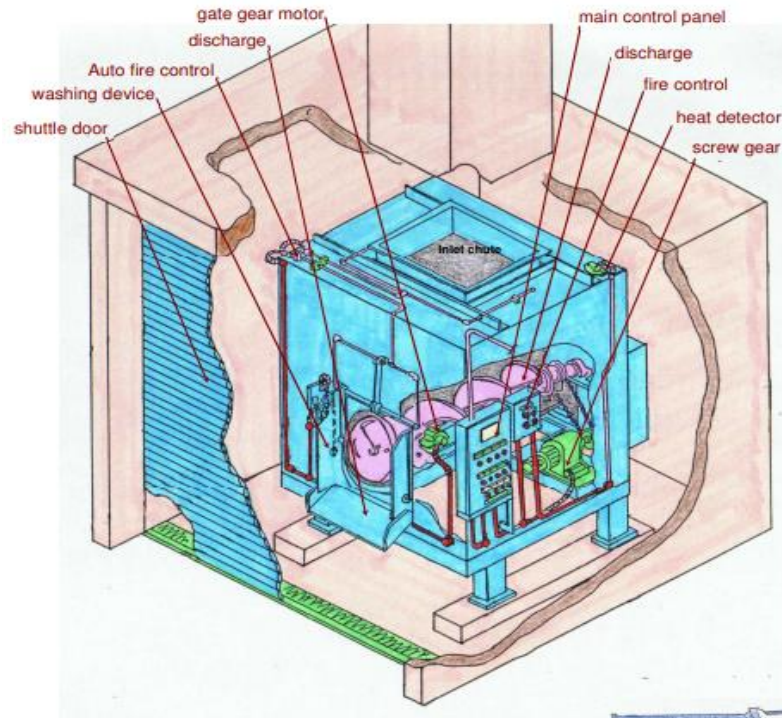
How's domestic waste being collected for the HDB Centralised Refuse Chute (CRC) RHE?

Residents from individual storey **Dispose** their REFUSE through the hopper.

Through Gravitational Force, the waste was **vertically transported** through the chute and then, landed inside the storage compartment of the RHE

Waste **Collection** by the Refuse Truck

DUSTSCREW (Spiral Waste Bin) for Centralised Refuse Chute System



Between 1990 to 2021, over 3,500 units were installed by Zenith in Singapore



- 1) Totally enclosed
- 2) Constant drainage of sludge water
- 3) Fully automatic operation
- 4) Automatic water spray after each discharge operation & periodic flushing
- 5) Automatic fire detection, alarm & sprinkler system
- 6) Flexible capacity to suit application & site-dimensional constraint
- 7) Two days refuse output handling



Refuse Handling Equipment (CRC RHE)

RHE discharging operation will be done by Refuse Truck attendants





Refuse Handling Equipment (CRC RHE)

Safety Precautions by Refuse Truck attendents before/while Waste Discharging

- ▶ Attendants ensure that there are no obstructions when reversing the refuse collecting vehicle to the RHE.
- ▶ Truck Driver always apply the parking brake after setting the truck in front of the RHE plant
- ▶ Keep clear of the discharging area of the RHE.
- ▶ Operators or attendents are to remain close to the control board during the discharge sequence.
- ▶ When operations suddenly adnormal, halt all operations and inform maintenance crew immediately.
- ▶ Always be ready to stop the operation by pressing the emergency button.
- ▶ Careless handling of the equipment may lead to serious or even fatal injuries!
- ▶ Untrained personnel are advised not to adjust any settings pertaining to the operation of the equipment.





Refuse Handling Equipment (CRC RHE) - Maintenance Checklist

❖ MAINTENANCE CHECKLIST in brief as below :

1) MACHINE BODY

- Connection Chute
- Anchor bolt

2) DRIVE ASSEMBLY

- Operation of motor
- Grease to gear motor bearings
- Bearing fastening bolt
- Release to Drive Chain

3) SPRAY Assembly

4) DISCHARGE GATE & INLET

- Operation test
- Fastening bolt of motor
- Grease to hinges & bearings
- Door seal condition
- Stop position of gate close & open

5) Control Panel

- All lamps can be illuminated
- Wire conditions, torn, loose, exposed.
- Abnormality of Contactors & Relays
- Instruments are working

❖ On Maintenance, Town Council will select their choice of contractors after the Defects Liability Period



Refuse Handling Equipment (CRC RHE)

For SMART options (ZENITH Connect), our solution target at **3R** :

- **1st R** – Reorganizing of workflow
- **2nd R** – Reallocating of resources
- **3rd R** - Reduction in cost economy and fatigue

To meet individual client objectives



Thank you!

website www.ze.com.sg

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