

# IGBC Net Zero Waste (Operation) Project Ecoworld, Bangalore

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**Arliga India Office Parks Pvt. Ltd.**

October 19, 2022



# Introduction of Ecoworld



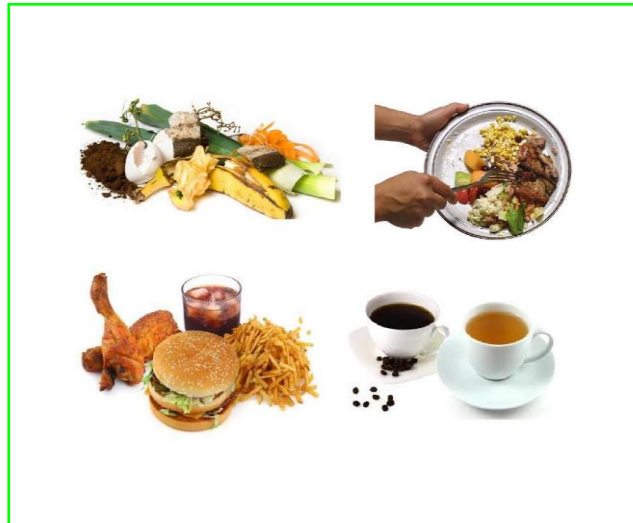
Number of buildings/blocks – 14 Buildings  
No of Food courts – 2

# Site description

- Eco world – Situated at 52-acre land area with 7.5 million Sqft development of spectacular aesthetics in a sustainable environment where natural and architectural forms are symbiotically integrated using responsible planning and precise engineering.
- With SEZ & NON SEZ zones consist of Nine Buildings, whereas Building-5 features about 10,55,570 sq.ft. Built area with 3 Basements with Car parking spaces and surface parking facility.
- Ecoworld prides itself on being a leader in providing sustainable office space to its clients across the country. Operating a sustainable campus involves many aspects, one of which is waste management.
- Bangalore produces over 4000 tons of waste per day, and we contribute significantly to that both in our homes and in our workplace. The governing body BBMP has issued rules requiring that bulk generators, such as Ecoworld, handle waste responsibly.

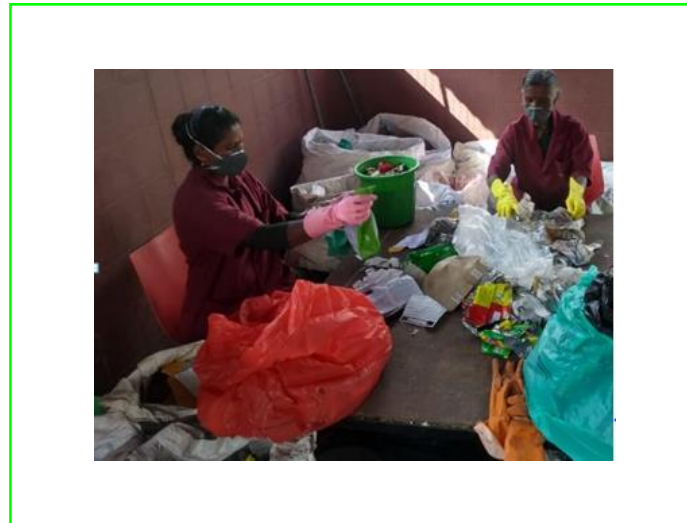
# Types of waste generated in Ecoworld

## Wet Waste



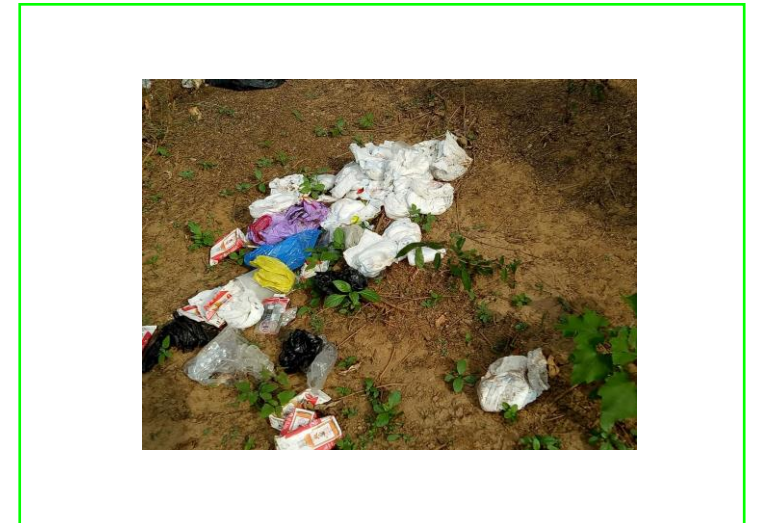
**Generated from:**  
 Food court ( mostly)  
 Client floors  
 Basement and drive-ways  
 Examples: Fruit peel, Leftover  
 pizza, rice, chapatti

## Dry Waste



**Generated from:**  
 Client floors (mostly)  
 Basement and drive-ways  
 Food court  
 Example: Plastic, cardboard, chips  
 packet

## Rejects



**Generated from:**  
 Client floors  
 Basement and drive-ways  
 Examples: Soiled tissue paper,  
 food contaminated plastic,  
 Tissues

# Holistic Waste Management

Zero waste ends up at a landfill due to maximum resource recovery

- Waste is segregated through a 3-bin system
- Segregated waste is collected by SZW

## Wet waste:

- Composted on-site
- Bio methanized at a KSPCB – approved plant
- Bin to bin system of wet waste collection

## PRIMARY SORTING: happens at Brookfield location

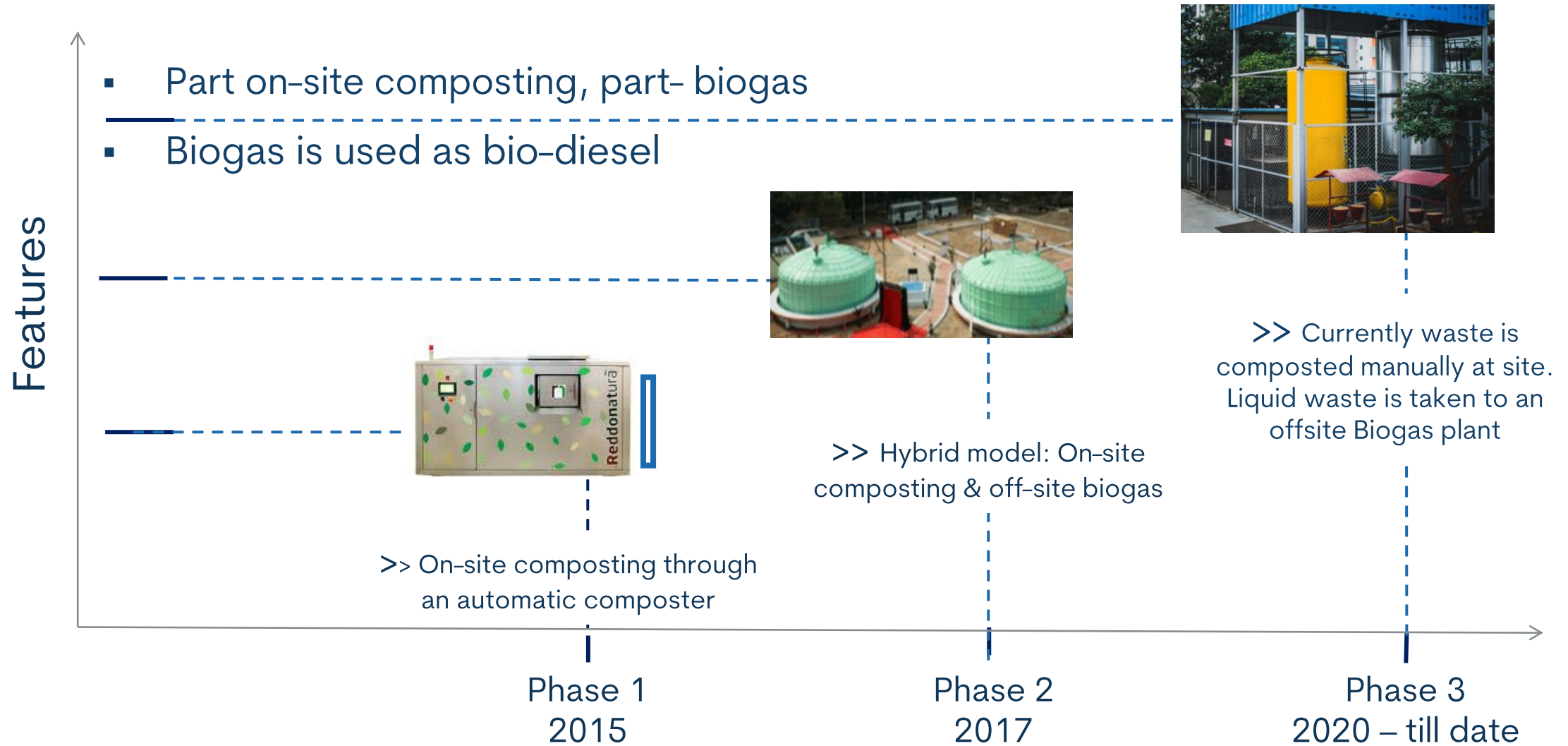


## Dry waste:

- Secondary sorted at SZW MRF
- Sorted dry waste is recycled into products
- What cannot be recycled is sent for co-processing
- Reject waste sent to authorized landfill

- Improved traceability through MIS tracking

# Wet Waste Management



# Solution Innovated – Rotational Bin System (Wet Waste)



The wet waste from tenants are collected in labelled bins and weighed at the onsite facility

# Wet Waste Composting



Composting in  
Crate system for converting  
decompose food waste  
into organic manure



Getting wet waste back to life as  
compost



# Wet Waste Pick Up



# Dry Waste Management Process

## 1. Collection

- The waste is segregated and collected from tenant floors. They are separately collected as wet & dry.

## 2. Data & MIS

- Dry waste & Wet waste is weighed and the data is maintained in the MIS

## 3. Primary Segregation

- First level sorting happens at the site, where the dry wastes are sorted as per their recyclable property
- Dry waste & Rejects are packed in gunny sacks and dispatched to the

## 4. Material Recovery Facility

- The sorted waste is baled
- Rejects go for co-processing in Cement factory or MSGP( authorized landfill), twice a week
- Other recyclable items goes to the authorized recycler, twice a week

- Finally the wastes reach the safest End of Life , either at the **scientific landfilling** site or at the **authorized recyclers**

MRF

# Dry & Reject Waste Management

## Dry waste management

- Segregated dry waste is sorted at the on-site units
- At the MRF, dry waste is secondary sorted into 15-20 categories & baled
- It is transported to SZW's Materials Recovery Facility
- Each category is sent to authorized recyclers
- Non-recyclable waste is sent to co-processing factories

## Reject waste management

- Through policy changes, staff is allowed to reject non-compliant, mixed waste
- Mixed waste is sent back to be segregated by the respective tenants
- Unavoidable reject waste is sent to an authorized integrated waste management facility
- At this facility, reject waste is deposited in an authorized landfill to later be used as RDF



# Dry Waste Segregation



# Dry Waste Management Process



Collection, weighment being done

Segregating into 20 different categories



# Dry Waste Segregation Process

The dry waste is segregated into the below categories by our trained staff and managed by a supervisor

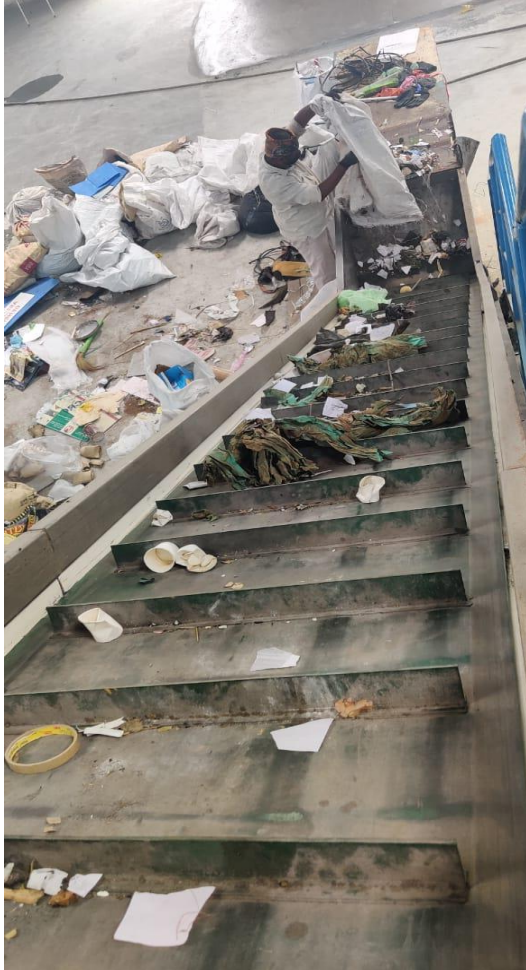
- Cup
- Colour paper
- Road waste
- Aluminum tin
- White paper
- Milk Packet
- Carton
- News Paper
- Foam
- Lamination



- Thermocol
- Glass
- Tetra pack
- Aluminum tin
- Shredded Paper
- News Paper
- Plastic
- Tissue grade 1
- Tissue grade 2  
(\* currently tissues are treated as reject)

# Dry Waste Segregation Process

The waste is taken to the MRF where it's further sorted ( if semi sorted at source ) , baled and sent to authorized recycler



The waste is segregated and packed to be sent to the authorized recycler or co-processing unit

Further sorting at MRF on the conveyor belt

Rejects are taken to the authorized end destination ( either to cement factories or BBMP landfills site)



# Continuous Improvement

- Plastic garbage **liners eliminated**
- **Bin to bin system** instituted for collection & aggregation of **wet waste**
- **Recyclable HDPE bags** are used for **dry waste** collection
- **Single – use items phased out** of all common areas to be replaced with reusable items

## Traceability & Transparency

- Waste data is recorded on an **MIS platform** every day
- Monthly MIS reports with detailed waste profiling are shared with Ecoworld
- Real-time data collection through **IOT weighing** machines is also being tested
- Waste taken to the SZW MRF is sent to authorized end destinations with signed MOUs

Certain dry waste streams exchanged for **recycled stationery products**



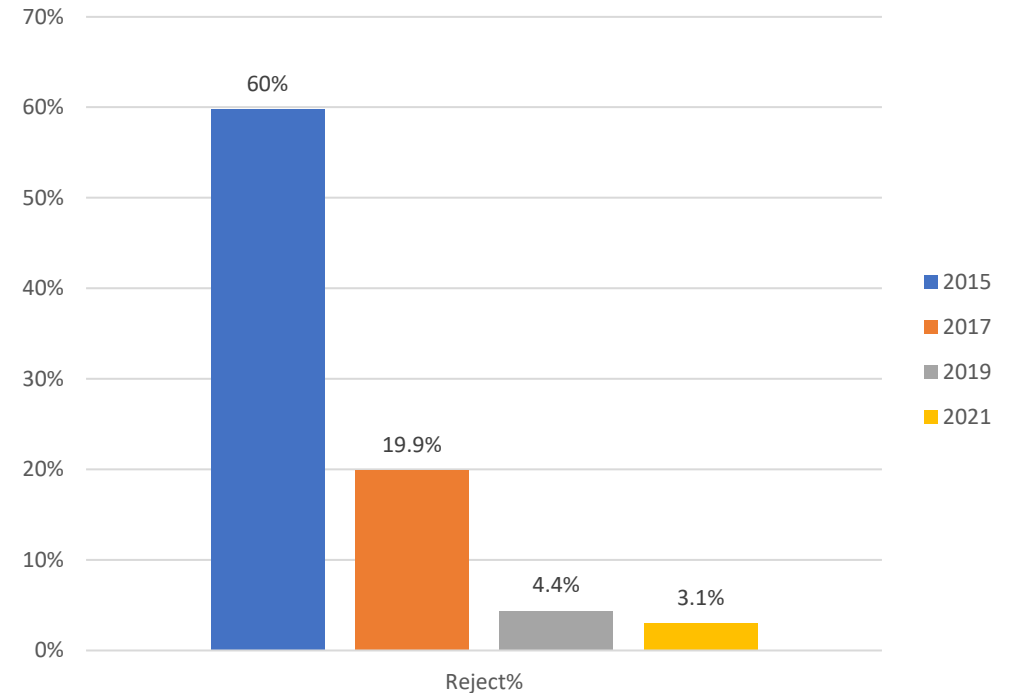
# Continuous Improvement

## Zero – waste to landfill

- Regular feedback to corporate tenants helped improve waste management practices
- Reject waste reduced from 60% in 2015 to 3.1% in 2021
- 96.95% of the waste from Ecoworld, Bengaluru is recovered
- All Brookfield Properties across South India are zero-waste
- **Proud owner of 'IGBC Net Zero – Waste**

**Certification –Platinum**

## Reject waste reduction: 60% to 3.1%



# Key Green Features

Waste generated by Ecoworld – managed responsibly!

- For CY 2021, Eco world properties converted **18,370kg** of wet waste into **Compost**
- For CY 2021, Eco world properties converted **1,09,581kg** of wet waste into Bio-gas generation
- For CY 2021, Eco world properties saved **1,04,173 kgs** of dry waste from going into **landfill**
- For CY 2021, Eco world properties managed **7299kgs** of reject waste responsibly!
- Segregation of more than 15 varieties of dry waste which includes newspaper, multi-coloured plastic, single use plastics, milk packets, tetra pack, waste papers, tissue papers, wrappers, food packaging, cartoon boxes, plastic cups etc.,
- Utilised old scrap and salvaged materials to design sculptures, garden furniture etc.
- Conducted awareness session on waste management, e-waste, recycling, CO2 reduction etc.

# Environmental Impact

**19.95 tonnes** of waste diverted from landfills every month

**1030 kg** CO<sub>2</sub> emissions averted every year from plastic landfill

**Estimated 544 trees** saved every year via recycling of paper



## SDG Impact



# Social Impact

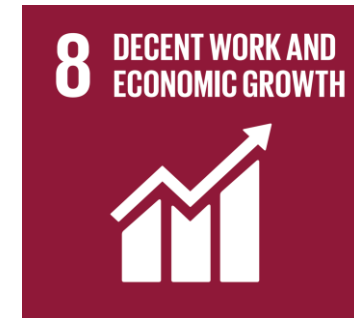
**45 people** employed  
from lower socio-economic  
groups

**Formalization** of waste  
management & inclusion of  
informal workers

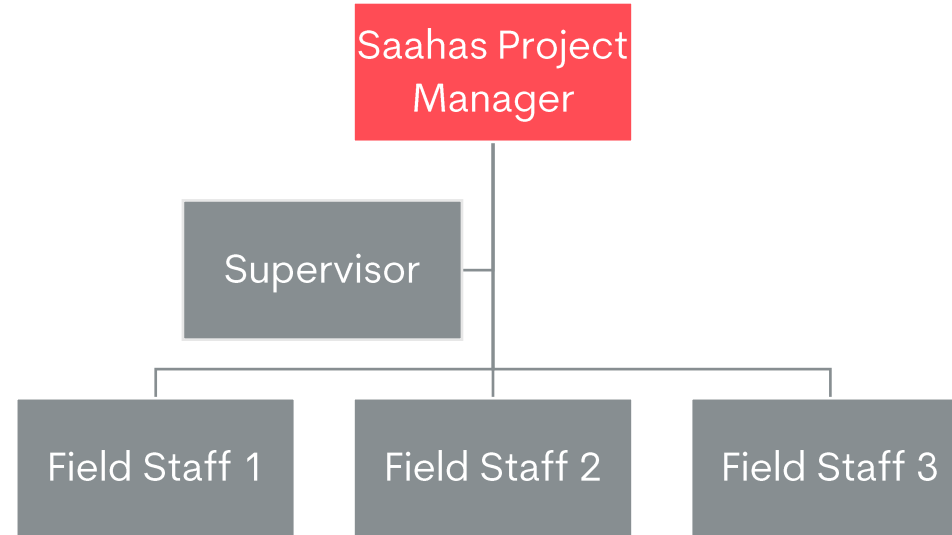
**Gender equality** &  
equal growth opportunities



## SDG Impact



# Saahas Organization structure & USP



\* Manpower deployed depends upon the waste generated in the premises

Saahas focuses on:

1. Weekly Training of field staff
2. Monthly meeting on operational improvement with the soft service manager , estate manager and property manager
3. Customer satisfaction review bi-yearly
4. Efficient data management and transparency
5. Health and safety of our staff

# Thank you

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