CASE STUDY | TECHNOLOGY PARKS

Leading from the front: A champion's story

ECOWORLD

Let's take a moment, close our eyes and mentally walk through a typical technology park or even an average corporate campus.

Here we are in front of the security gate and walking into the premises. We walk through beautiful landscaped gardens before we enter the glass building. Spotless, inviting, world-class are some of the adjectives that flow through our mind. We pass the break-out rooms and the pantry. We see a pool table and a well-stocked eating area. Choices for coffee and tea, biscuits and more. Next, we walk through the food court. Choices for meals and beverages here are unlimited. We make a quick stop in the conference room, where we see neatly stacked paper cups and yes, the small plastic water bottles. Also, a small single dustbin in the corner. What if someone brought along an orange or a banana peel. Where would this go? Just asking.

We know that this tech park houses 20,000+ employees in 120+ offices. They need meals, i.e. breakfast and lunch, evening snacks and maybe even dinner. Now some questions are raised. What kind of waste management culture does the tech park embody? We see bins in the cafeterias and in the break-out spaces,

with green and blue signage signifying wet and dry. However, the bins contain mixed waste. We see the housekeeping staff with huge plastic bags, to empty out these bins. Where do all these plastic bags go?

We follow the housekeeping staff and see that the bags are dumped carelessly in a tiny room. The room is untidy and smelly, and such a contrast from the way in which the gardens and indoor spaces are maintained. We are told that these bags will be picked up by some vendor. Very little due diligence has been done on this vendor. There are no questions asked about what happens to the waste once it is collected. The important datapoint is that the vendor is regular. He collects the waste every day, making way for new bags to be brought in.

We now open our eyes and face the reality – the general indifference to waste management, even in a corporate campus.

The Journey

Change begins by first acknowledging what is going wrong. This was the starting point for the senior leadership at Ecoworld.

The team at Ecoworld recognized the gap in compliance to the SWM Rules from the state and central government. They were determined to make their properties confirm to the SWM regulations of the Govt of India. These regulations they realized were also aligned to their own SDG (Sustainable Development Goals) and ESG commitments.

The Ecoworld leadership was convinced about the Zero Waste concept – the fact that waste was generated by individuals who then must have a system to accept their responsibility.

SZW was invited by Ecoworld in 2017 to support their commitment and become a partner in the Zero Waste journey of the company.

Ecoworld, an IT park located on the Outer Ring Road in Bellandur, Bangalore was selected to be the first champion. The IT park was spread over 20 million sq. feet, housing about 180 brands and companies. There were a total of 10 buildings where approximately

60,000 people worked and around 10 tonnes of waste were generated every day.

Allocating appropriate space for an onsite system is a big challenge. Space allocation must support the processing of wet waste and the aggregation of dry waste which needs to be further sorted and stored until there is an optimum volume for transport to a Material Recovery Facility (MRF).
It was decided to have a dedicated waste management unit for each of the 10 buildings at Ecoworld. Unfortunately, the tech-park had already purchaseda few 24 hours composters. Fortunately, they had also invested in two Organic Waste Converters (OWC) with each having 250 kgs/day capacity. The OWC is much preferred as a solution. It uses a racking system to complete the curing and composting cycle of 40 days. In contrast, as the name suggests a 24-hour composter tries to complete the cycle in a single day. This process cannot be called composting. The 24 composters that were part of the initial infrastructure had to be scrapped and an alternative system was initiated. Currently 500 kgs of wet waste is composted every day onsite and the remaining wet waste is taken to a bio-CNG facility. Each of the waste management units were also fitted with a trough for cleaning out the wet waste and a dry waste sorting table for the first level of sorting along with the required storage space for the dry waste. The next step was to enforce waste segregation at source. When we first started, Ecoworld was generating large quantities of mixed waste which resulted in 60% of waste being sent out as rejects, one of the fundamentals which needed correction.

The truth about 24 hours composters

1. **The natural composting process goes through a series of biological sub-processes which takes 30-40 days**
2. **The 24 hour machines do not produce compost They produce an end product of pulverized material which may be harmful to the soil if used as a compost*.**

Sorting the dry waste

** Ref: https://savitahiremath.com/ -*

As communications is a very critical piece in any change, collaterals to explain the segregation system were shared with all the resident offices, along with SOPs for the collection of segregated waste. This was followed by extensive training of the housekeeping staff of every office as well as of the Ecoworld facilities teams like housekeeping, cafeteria staff and security guards.

A training session in progress

The journey began by first placing 2 bins each in the breakout areas, cafeteria and other common areas. Every office housed in each building of the IT park was expected to roll out source segregation within its premises. As communications is a very critical piece in any change, collaterals to explain the segregation system was shared with all the resident offices along with SOPs for the collection of segregated waste. This was followed by extensive training of the housekeeping staff of every office as well as the facility teams including the cafeteria team and security guards.

After a trial period of 3 months, it was time to enforce the regulation through some disciplinary measures. Each bag coming into the waste management unit was checked by the security and bags containing mixed waste was returned to the respective office. This resulted in frayed tempers and frustrations at multiple levels but this was soon followed by celebrations as the quantities of mixed waste reduced and eventually rejects came under control. Meanwhile SZW developed a customized MIS system using its ZOHO platform to capture and analyze real time information from the ground. The data in month 6 showed that rejects was down to 5% .
Ecoworld had done it

The IT park was a zero waste facility.

Signages

TRUE (Total Resource Use and Efficiency) is a holistic systems approach, aimed at changing how materials flow through society, resulting in no waste. The TRUE approach encourages the adoption of sustainable resource management and waste reduction practices which contribute to positive environmental, health and economic outcomes.

TRUE certified spaces are recognised as being environmentally responsible, more resource efficient and also helping turn waste into savings and additional income streams. By closing the loop, they cut greenhouse gases, manage risk, reduce litter and pollution, reinvest resources locally, create jobs and add more value for the community.

True Zero Certification for Ecoworld

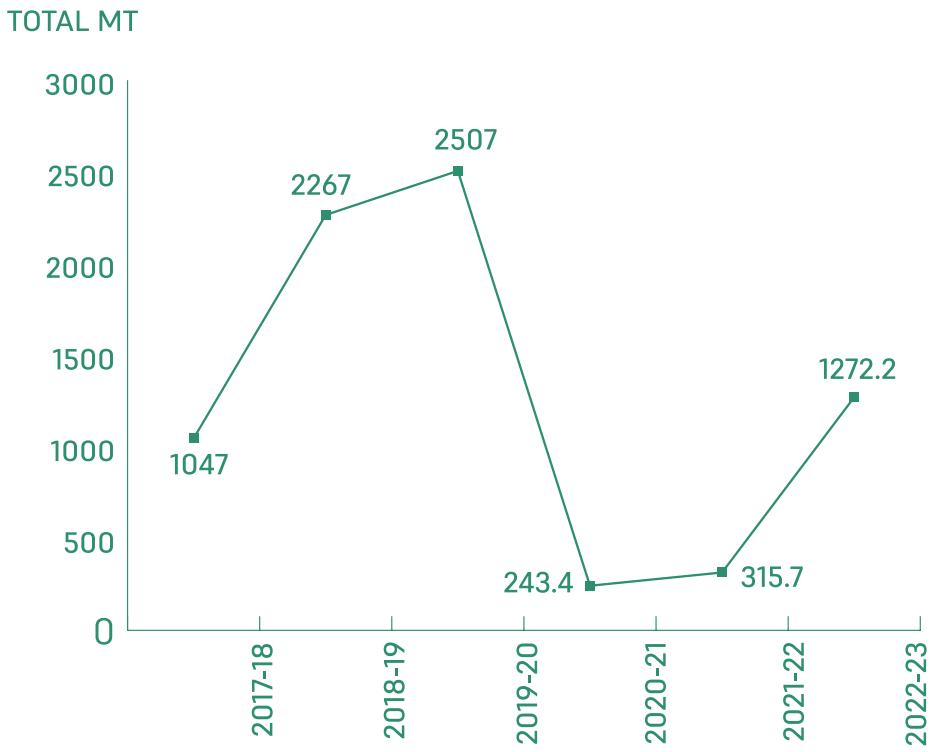
In the following year, Ecoworld tech park applied for the global True Zero certification. A gold rated certificate was awarded in 2021. This was the first tech park in India to receive a certificate for True Zero.

The endorsement from a third party helped in validating the work that Ecoworld and SZW had been implementing and this certification was an affirmation that the correct systems and processes were in place, that the data was being collated meticulously, and that the programme was achieving the results that had been targeted. This acknowledgement also paved the way for some enhancements and fine tuning which brought in more efficiencies. In addition, the True Zero process demonstrated the importance of the role of technology and MIS.

The Ecoworld waste management operation was then introduced to other facilities.

Today, the integrated and decentralised waste management system is operational in Galleria Mall and Sky View.

Resources Recovered through our decentralized Waste Management System

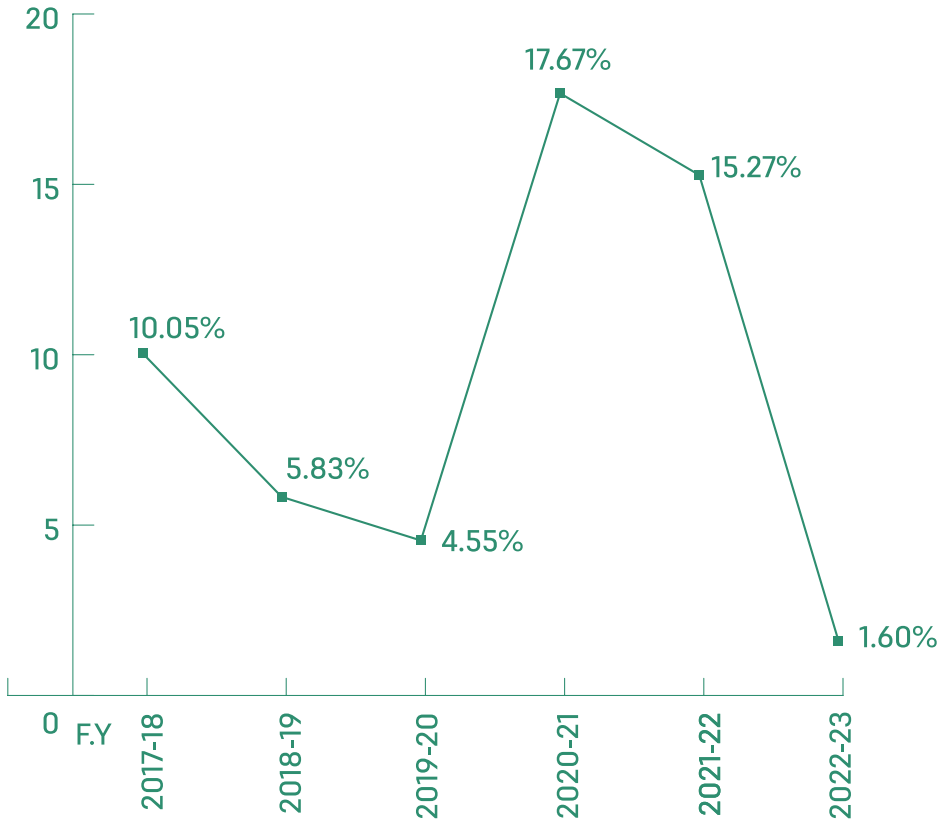


From fiscal year 2017-18 through FY 2023-24, a total of 9,458.5 metric tons (MT) of waste have been effectively managed through segregation at source, collection, intensive secondary sorting, aggregation, processing and recycling .

The COVID-19 pandemic protocols implemented during the 2020-2021 period resulted in a reduction in waste management activities, primarily due to widespread adoption of remote work arrangements, leading to decreased waste generation by businesses.

However, as global recovery efforts gained momentum post-2021, incoming waste volumes surged, correlating with the reinstatement of hybrid or work-from-office policies by organizations.

Rejects



From a starting point of 60% rejects and 40% landfill diversion. We achieved a notable accomplishment by diverting approximately 95% of the waste from landfill in 2018-19. However, during the pandemic, precautionary measures necessitated careful handling of specific waste streams, leading to a surge in reject rates to approximately 15-17%. Subsequent to the pandemic, there was a marked enhancement in reject reduction efforts. In 23-24, we have achieved 99% landfill diversion.

Impact on the Sustainable Development Goals

1 NO POVERTY	5 GENDER EQUALITY	8 DECENT WORK AND ECONOMIC GROWTH	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
22 of people employed from Base of the Pyramid	**73%** of SWZ workforce are women	**100%** safe hygienic & dependable work	**₹ 20,848** minimum CTC to field staff	Resources recovered from 1,806.2 MT of waste at Eco World in 2022-23. An average of around 5 MT per day	**99.3%** of landfill diversion rate
	Equal opportunities at workplace	**100%** dignified work and compliant to labor laws			

Ecoworld campus has been able to report on their ESG parameters through professional waste management services. They ensured reporting on governance by 100% compliance to Solid Waste Management Rules. They did well on several other parameters on the social and environmental fronts. For example at an environmental level, they tracked and took accountability for over 1,800 MT (4.9 MT per day) of waste generated in 2023-24, thus contributing to sustainable cities and communities. They diverted over 99% of the waste from landfill, with wet and dry waste sent to authorised end-destinations for composting, bio-fuel, recycling or co-processing. Thus, not only did they prevent methane gas emissions due to mixed waste being landfilled, but they contributed to a Circular Economy by ensuring that the dry waste diverted from landfill and was either recycled or used for co-processing.

Their impact on the social parameter was also significant – 22 of the field staff employed were from the difficult economic background (Base of the Pyramid), 73% of the field staff employed were women with equal opportunities at the workplace. The staff were fully protected by labour laws, and the working conditions were safe and hygienic.

	FY 2017-18	FY 2018-19	FY2019-20	FY2020-21	FY2021-22	FY2022-23	FY2023-24
TOTAL WASTE MANAGED(MT)	1047	2267	2507	243.4	315.7	1272.2	1806.2

What happens at our MRF (Material Recovery Facility)

Our MRF in Jigani Bangalore is a 10 MT (Metric Tonne) per day facility. At our MRF, the dry waste from EcoWorld, which is already partially sorted, is first weighed, this data is then recorded and included in the monthly report submitted to the customer. The waste is then further sorted using a conveyor system into 25+ different categories Each category is then compacted into cubes weighing around200 kgs each. On an average around 70 bales are needed to fill a truck. Each waste stream is accordingly aggregated and once the required quantities are met, the aggregated waste is dispatched to a dedicated recycler.

SZW has signed up MOUs with 30 different recyclers for whom the waste is a raw material.

RESPONSIBILITY AND THE BULK GENERATOR

The Municipal Solid Waste Management (MSW) Rules in India recognise a bulk waste generator as an independent entity that generates more than 100 kg of waste per day, and is required to take responsibility for the waste that is generated within its premises. These include residential complexes, corporate campuses, and large institutes.

Ecoworld demonstrated a remarkable commitment to comply with SWM rules and proactively seek out the necessary solutions.

Certifications for the real estate industry have traditionally not included waste management as a major component for assessment of sustainable design and implementation. While the well-known LEED, GRIHA and IGBC evaluations included multiple parameters on features of energy efficiency, construction materials used, water utilisation and sustainable design, there was no focus on waste management and the required process such as onsite handling or tracking and traceability on an ongoing basis. Waste unfortunately, was a low priority for most stakeholders, and the budget allocation focused only on waste collection and disposal.

Interview with Saurabh Garg

VP BROOKFIELD PROPERTIES

It is really encouraging to see that Brookfields recognises that waste management has an important role in a company's larger ESG mix from an environmental impact perspective, and that the right sustainability practices will lead to the achievement of your SDG and ESG goals. What is your view on this?

First, thanks to the association with Saahas Zero Waste, we have been able to achieve the zero waste status, and the certification is a validation to our on-ground practices. We are very proud of this.

In my view, the foundation of this system is source segregation and we have been able to implement this process well. A little discipline like returning the mixed waste to the specific office it has come from, also pushed the residents to learn the right ways. I believe that with the dedicated collective effort, the reject waste is now only at about 5% to 6%.

This is a great achievement because our society, our cities, are facing a grave issue of waste disposal. If you go to any city, Delhi or any other place in India, you can see huge waste mountains and we are very happy that we are not contributing much into this at all.

This aspect of our ESG journey and sustainability is extremely important to us.

Second, the focus on the well-being of the programme staff is crucial. With the SZW engagement, we are assured that their work conditions (provision of proper equipment and safety kits), their health needs, their social status, including education needs are being taken care of, and most importantly, the staff feels proud of their work and contribution.

Finally, SZW's partnership in the areas of recycling and re-utilising / re-purposing - equipment, paper, books, pens etc, is a great motivator for our employees and management.

We look forward to learning more on this segment, through SZW. For instance, we recently had a session together, on single use items, like even tea bags. We are now working towards this effort, so we can avoid single use waste. Our theme and motto, is not to be a burden on society.

What do you see as some key next steps on the way forward?

I think we could bring in some automation, maybe some more AI into our systems. We are looking out for innovations, newer technology interventions, which will improve productivity and lower environment impact.

We also believe that when we learn something ourselves, we must take it to our clients, and they appreciate it. We plan to have regular workshops at our clients' offices to sensitise them on various aspects of waste generation and disposal, for example, usage of single-use plastic, conscious disposal etc. This must get disseminated at all levels. People understand that this is what needs to be done, and that they have to practise it. For instance, people have begun to realise that it is their moral responsibility to avoid littering anywhere on the streets.

One area that we will continue to focus on is visibility and communications. As a company, all our administrative staff are aware of the partnership with Saahas Zero Waste and the integrated waste management system we have in place. But, we need to enhance the communications with the employees who work in the offices in the tech parks. Initially, when we received the True Zero certification for Ecoworld, posters had been displayed in all our atriums, and across the campus. We plan to enhance signages all over.

CREATING VALUE FOR THE PLANET & FOR ALL PEOPLE

For Saahas Zero Waste, waste management is synonymous with resource recovery. More than half of the world's total GDP, amounting to about US$ 44 trillion is moderately or highly dependent on nature. Recovery of resources enables giving back and makes us citizens accountable to the materials we receive from nature.

Let us now use our collective intelligence to work together and commit to doing things fundamentally different, so as to be completely accountable to the resources we receive from nature. This is what it will take to build a new circular economy.

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