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Greater value



CASE STUDY

A better route to waste management – a case study in continuous improvement



Case Study | Executive Summary

A BETTER ROUTE TO WASTE MANAGEMENT

Highlights

Waste Management is a challenge that can be tackled through a range of well-considered measures:

- **CascaiShopping** implemented signage improvements and waste collection areas increasing the shopping centre's recycling rate in 9% since 2015.
- **GaiaShopping**, with the reorganisation of the segregation area and the purchase of a simple transporting equipment the annual savings are expected to be more than €43,000.
- **8ª Avenida** with a simple change in the process was able to reduce workload for the waste management service suppliers allowing them to treat 8% more waste in 2017 as compared to 2016.
- **GuimarãeShopping** implemented several measures that allowed to avoid costs of €7,500 per year and to improve the recycling rate by 30%.

Solution

Each shopping centre identified a range of low-cost but complementary improvements focused on:

- **Identify and eliminate any inefficiency in the process and equipment**
- **Improved waste segregation** facilities for tenants and suppliers
- **Enhanced signage and communications** to encourage waste segmentation
- **Automation of waste storage and collection** in waste docks to reduce health risks to contractors and service suppliers

KEY NUMBERS (2018)



38M
visits

77%
average
recycling rate

ZERO
Waste send to
landfill

+€90,000
combined savings
through efficiency gains



Abstract

Sonae Sierra's shopping centres in Portugal show already good results regarding waste management, with an above average recycling rate compared to the rest of Sonae Sierra's owned portfolio.

Recognising the positive impact that better waste management can have on operating costs, the environment and tenant and visitor satisfaction levels, Sonae Sierra was determined to improve its performance further.

Not only has Sonae Sierra eliminated waste sent to landfill, but also has delivered sustained reductions in waste management costs whilst maintaining a safer and cleaner work environment for employees and shopping centre visitors.

Following a comprehensive review of waste volumes, separation and disposal methodology and routes, Sonae Sierra implemented a range of well-considered measures to improve waste management infrastructure, including engagement with tenants and service suppliers.



Introduction

Any shopping centre produces significant amounts of waste which, if not managed appropriately, can end up being disposed of in landfill sites. The cost of sending waste to landfill is steadily increasing due to more stringent regulation designed to encourage better waste management practices.

Not only is waste a costly and inefficient use of resources, but without adequate sorting and separation, waste can have a negative impact on shopping centres users. Poor waste disposal practices can pose health, safety and environmental risks to our employees, tenants, service suppliers and visitors. To mitigate these risks, safe disposal procedures must be put in place to prevent spillages and maintain hygiene levels and reduce pests.

This however depends on several factors; the infrastructure available to collect and sort waste, our tenants' support and participation (since they are responsible for most of the waste our shopping centres produce), and our service suppliers who are responsible for cleaning and collecting waste, predominantly from visitors and in the centres' food courts.

Improving the facilities available to handle and sort waste and influencing tenants' behaviour are therefore the principal strategies we can adopt to reduce the impact of our shopping centres' waste production.



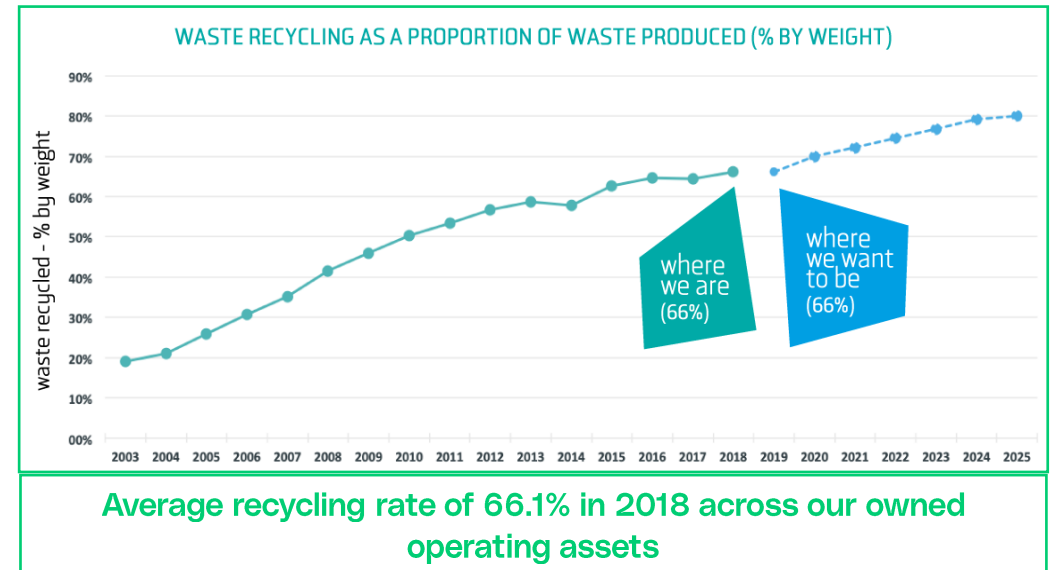
Background

Within the scope of our Safety, Health and Environment (SHE) Policy and management procedures, Sonae Sierra is committed to reducing the quantity of waste generated in our shopping centres and to achieving high levels of waste recycling.

The company has already made significant progress and achieved sizable increases in the amount of waste recycled. Between 2002 and 2018, Sonae Sierra increased the average recycling rate of its shopping centre portfolio by 248%.

Furthermore, the waste reduction and management measures introduced during this time enabled us to avoid costs of €4.6 million in 2018.

As Sonae Sierra is committed to improve this further, it has set objectives to obtain a minimum recycling rate of 80% and a maximum landfill rate of 10% across our owned shopping centres by 2025 – with all shopping centres expected to progressively improve their waste recycling rate.



Challenge

Despite their different starting points, all shopping centres are committed to improving this further to reduce their waste impact and drive down costs.

In the spirit of continuous improvement, the centres took a deeper look at their waste management practices to identify the opportunities to increase recycling rates. They found that waste separation practices were often inefficient, with waste not always being sorted due to poor signage and facilities. Unsorted urban waste was often stored together with recyclable waste in the same waste management areas, offering little visible incentive for tenants to pursue correct separation.

The challenge was clear despite their historically strong performance. As relatively old centres in Sonae Sierra's portfolio (**CascaShopping** was opened in 1991 and **GaiaShopping** and **GuimarãesShopping** in 1995), they were not designed with the space necessary to accommodate the equipment and facilities required to handle the number of waste streams promoted by Sonae Sierra's SHE management system.

Secondly, any improvement made to the waste infrastructure must be conducted while the shopping centres in operation so the impact on tenants and visitors is minimised.

And finally, they knew from Sonae Sierra's experience elsewhere across its portfolio that it was not enough to simply install new equipment and publish new guidelines for staff: they would need to make sure that tenants and service suppliers were fully motivated, engaged and committed to the project.



Solution

CASCAISHOPPING: INTEGRATED STRATEGY TO IMPROVE WASTE MANAGEMENT AND ENGAGE TENANTS AND SUPPLIERS

In its search for solutions, the team from CascaiShopping came together to apply the Kaizen methodologies that underpin Sonae Sierra's Improving Our Work (IOW) training initiative. IOW promotes structured problem solving to support Sonae Sierra teams in mapping and monitoring process to identify where improvement opportunities exist. Based on this approach, the shopping centre team decided to focus four key objectives:

- **Increase the sorting of waste** by type and disposal route
- **Increase the participation of tenants** in sorting waste correctly
- **Reduce the amount of undifferentiated waste in the food court**, while optimising the time required by cleaning suppliers to sort waste
- **Improve visitors' overall level** of comfort in the food court

The team identified several interventions with these objectives in mind. They improved signposting in the technical corridors so tenants could easily locate their closest waste segmentation area.

In the food courts, the team created a centralised sorting zone and replaced two waste service stations with fixed areas for tray collection. Finally, the centre installed automatic sorting equipment in the main waste docking station in collaboration with the waste contractor.



Solution

The solutions were not without their problems. On the one hand, the centre's design and layout made it difficult to optimise waste collection, and on the other there was some engagement needed with tenants and services suppliers to embrace the new procedures. The solutions required several innovations: the centralised waste collection area in the food court for example required the team to design special waste shoots to direct the waste into respective containers according to its type.



Automatic waste sorting equipment



Newly designed waste shoots for food waste

Solution

GAIA SHOPPING: REORGANISE WASTE SEGREGATION AREAS

GaiaShopping's team worked hard to apply sound waste management practices and achieve high recycling rates with the facilities already at their disposal.

Based on this starting point, they identified the need to reorganise the waste segregation areas to ensure that the shopping centre's waste could be more effectively separated by tenants and cleaning teams on site, then temporarily stored before being collected by the authorized contractors.

A second focus was to improve the waste docks that are located towards the rear of the shopping centre by the service bays used by tenants. Recyclable materials such as oils, paper and cardboard, wood and scrap metal are now kept closer to the tenant areas to make recycling easier.

Meanwhile, a lack of appropriate storage infrastructure for organic waste was causing unwanted side-effects for workers and the surrounding area. The team strengthened storage facilities and identified an underused space next to the anchor dock that could be converted to house contaminated and organic waste away from the main waste docks, thereby reducing the nuisance caused by pests and other hygiene issues such as unpleasant smells.

The team also proved that sometimes great achievements can be in the simplest actions. The waste dock of the centre was poorly organised and in need of innovative methods of cargo transportation. The waste operators were wasting much of their time in transporting materials instead of dedicating their efforts in waste separation. Beside the high risk of musculoskeletal injuries to the suppliers, this situation was damaging the recycling rate of the shopping centre.

By buying an electric pallet jack, all problems were solved at once and the centre improved its performance thanks to the equipment. The recycling rate raised from 65% in January 2018 to 66.87% in January 2019 avoiding costs of more than €10,000.



Solution

8^a AVENIDA: TWO BIRDS WITH ONE STONE

Sometimes the simplest solutions can deliver highly effective results, 8^a Avenida was aiming to boost the efficiency of the waste segregation process and drive down costs. The centre agreed that security personnel would transport the waste containers to the relevant areas while they were making the security rounds. This reduced the workload of the service suppliers responsible for waste collection and sorting, enabling them to perform their job more effectively. Such a simple tweak to responsibilities and procedures enabled them to treat 8% more waste in 2017 as compared to 2016.



Solution

GUIMARÃESHOPPING: TEAMWORK TO INCREASE RECYCLING RATE

GuimarãeShopping had room for improvement in terms of performance, which united the team to identify the root causes and achieve better results.

In the end of 2017, the centre registered a recycling rate of 53.3% and this situation would be aggravated with the loss of reported electrical and electronic waste collected by an external provider.

The weight of undifferentiated waste was 3 times more than organic waste, the tenants from the food court were responsible for delivering their organic waste and most of the times it was not separated and mix with recyclables that became contaminated.

When analysing the root causes to the low waste management performance, the team identified that the transportation of plastic and metal containers took 60 minutes per day to the waste operator and most of them with empty cargo. The existence of closed containers to collect recyclable waste, allowed the deposition of organic and undifferentiated waste without being controlled by the surveillance team and the black litter bags didn't allow a visual immediate identification of possible sources of contamination. Also, some of the tenants had no training to do proper recycling, no containers to make a proper separation and they gathered all waste in a single bag.

Aiming to obtain a recycling rate of 60% and decrease the weight of undifferentiated waste in 25%, the team joined efforts to find a solution. The containers to collect plastic and metal were removed, keeping only the cardboard containers that were replaced by metal grid boxes that allowed a visual control of its interior.

An information note was sent to all tenants stating that all waste should be deposited at the waste room and delivered in separated bags which would be checked by a surveillance or cleaning element.

A table for sorting waste and several bag holders were placed at the waste room to carry out separation, finishing the several daily transportations of the containers to this room. One person from the waste supplier was assigned to manage organic waste exclusively, this person visited all food court tenants after lunch and dinner to collect organic waste that the operators separated in their new specific containers.



Black waste bags were replaced for transparent bags, allowing to see the variety of waste inside

Conclusion

Despite its strong starting point, CascaiShopping has seen an immediate uplift in its waste performance. By the end of 2018 the recycling rate had increased to more than 84%, with the total proportion of waste sent to landfill remained at zero. CascaiShopping increased its recycling rate by 9% between 2015 and 2018. Furthermore, the improvements have enabled the shopping centre to avoid costs from landfill and achieve savings due to efficiency improvements. An initial investment of €34,800 is expected to deliver annual savings equivalent to €28,600.

GaiaShopping also achieved zero waste to landfill and a recycling rate of just over 67%, the improvements have resulted in similar benefits and are expected to deliver savings equivalent to approximately €44,000 by reducing the time spent transporting waste and improving pest management.

As for GuimarãesShopping, in 2018 the shopping centre achieved a recycling rate of 69.4% an increase of 30% comparing to 2017 results. In addition, the centre was able to save more than €5,000 from organic waste sorting and more than €2,500 from card and paper recycling.

In sum, regardless of the size of the asset, the quality of infrastructure, the sophistication of waste management procedures, or lack thereof, there is always a way to improve waste management and thus have a positive impact on both operational costs and environment.





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