

Open mind
Greater value



CASE STUDY

Every drop counts: water
efficiency in action



Case Study | Executive Summary

EVERY DROP COUNTS: WATER EFFICIENCY IN ACTION

Water efficiency in real estate has become a key part of the path to sustainability. Modifying the bathroom taps at Centro Vasco da Gama following the application of our Dive® tool achieved significant cost and water savings for a low investment expense.



Challenge

Centro Vasco da Gama is one of Sonae Sierra's flagship assets in Portugal. Situated in a dense business and high-end residential district of Lisbon, it was built in 1999. While several refurbishments over the life of the centre have enhanced its sustainability credentials, following the latest renovation, in 2017, we discovered that the centre's water efficiency could be improved.

Our analysis found that the centre uses around 60,000 m³ of water per year, which equates to the consumption of around 1,100 inhabitants of the city of Lisbon.

Inefficient water consumption does not only impact costs and resources; companies face physical, regulatory, reputational, and stakeholder risks when they fail to tackle the water challenge inherent in real estate assets.

Solution

Sonae Sierra's Dive® Programme, which not only helps determine if a property is performing in line with the theoretical optimum, also allow to identify the potential improvement measures.

It was identified that the most recently installed toilet taps did not feature any additional, water-saving measures, and were consuming a range of 3.5 to 4.28 litres per minute. And this consumption level of around 3.5 litres per minute could be reduced to a figure in the range of 1.9 litres per minute, saving up to 2,500 m³ of water per year, with good financial benefits.

The solution for saving water in this case was determined to be the installation of tap aerators, a low-expense mechanism which does not compromise the hand-washing experience.

Case Study | Executive Summary

EVERY DROP COUNTS: WATER EFFICIENCY IN ACTION

Outcome

The installation of aerators in three blocks of WCs reduced water consumption by around 46%, equivalent to 1,300 m³ or €4,500 of potable water per year, enough to serve 25 of the city's inhabitants.

The average flow is now 1.5 litres per minute, instead of 3.5 litres per minute.

Our Dive® Programme has shown that taking care of the smallest drop makes a big difference to water consumption, with a favourable impact on both costs and resources.

Highlights

- Since 2014, Sonae Sierra has implemented €115,000 worth of water efficiency measures identified by Dive® in 19 assets, avoiding annually around €428,000 in costs and the consumption of 105,000 m³ of water.
- Based on the result of the Dive® Benchmarking Operational Update, with the simple installation of tap aerators in the refurbished WCs of Centro Vasco da Gama we were able to reduce the water consumption by 46% saving €4,500 annually.

KEY RESULTS

-46%
water consumption in
the intervened areas

-1,300 m³
water consumption
in the intervened
areas

€4,500
costs avoided

from 3.5 to 1.5
liters / minute
taps' average flow

Abstract

Buildings are major consumers of water, putting pressure on local resources particularly during periods of drought. Not only are water constraints likely to become part of the future in which businesses operate; they are also a mechanism which responsible companies must seek to apply.

At Sonae Sierra we developed our own water efficiency Programme, called Dive®, to identify targeted, cost-effective measures to lower the water consumption of properties whilst maintaining, or even improving, the level of service to tenants and visitors.

Centro Vasco da Gama, with a GLA of more than 51,500 m², is one of Sonae Sierra's flagship assets in Portugal, strategically located in the city of Lisbon.

The shopping centre, which was inaugurated in April 1999, has been renovated several times in its history, with the most recent refurbishment, in 2017, including some measures to improve its water efficiency.

However, following the **application of our Dive® programme to Centro Vasco da Gama**, we discovered that the the most recently installed toilet taps did not feature any additional, water-saving measures, and were consuming a range of 3.5 to 4.28 litres per minute. And additional measures would be required to optimize water efficiency. This underlines our conviction that early adopters of water efficiency methods are best placed to activate immediate savings.

All about 

 +51,500 m² GLA	 162 SHOPS
 +23 M VISITS IN 2019	 100% OCCUPANCY INDEX

Introduction

Water scarcity is a global concern which Sonae Sierra takes very seriously. Rising demand and the misuse of water resources in recent decades has increased the risks of pollution and severe water stress in many parts of the world.

Research shows that the supply of fresh water around the world has been steadily decreasing. Businesses and households are today charged with finding ways to use less of this resource, as well as extracting and consuming water more efficiently.

Sonae Sierra realised that a traditional data analysis of water consumption in a shopping centre doesn't always demonstrate if a property is performing in line with the theoretical optimum. We applied our in-house expertise to develop Dive® Programme, in order to lower water consumption and its associated costs.

Alongside our Bright programme, which focuses on energy, the Dive Benchmarking model helps shopping centres control the actual consumption levels of buildings by showing whether they are underperforming when compared to their own data and a portfolio of peers.

With more than 30 years of experience in both navigating and leading the evolution of the real estate industry, Sonae Sierra has been implementing environmental standards in its shopping centres for over 25 years.

Since 2014, Sonae Sierra has implemented €115,000 worth of water efficiency measures identified by Dive® in 19 assets, avoiding annually around €428,000 in costs and the consumption of 105,000 m3.



Background

Companies today are exposed to a range of risks connected to water scarcity, including physical, regulatory, reputational, and stakeholder-related hazards.

Tackling the water challenge is vital for competitive advantage, to secure or maintain operational licenses, reduce costs, ensure the continuity of operations, and improve the good-standing of a company or an asset in its community.

While design and climate can play a part in a shopping centre's high water consumption, inefficient operational procedures and physical equipment often add to the challenge.

For Sonae Sierra, water management is about ensuring assets' long-term resilience. Several of our assets are located in areas of water stress, and we offer services to clients in geographies as diverse as Europe, South America, North Africa and Asia, all of which encompass regions where water scarcity is a risk.

Despite Sonae Sierra's track record in improving the water efficiency of its assets since 2002, there have often been irregularities in buildings' water consumption rates that could not be explained by physical and locational variations.



Challenge

Centro Vasco da Gama was a case in point, registering consumption metrics of around 60,000 m³ of water per year, which equates to the consumption of around 1,100 inhabitants (each person in Lisbon uses 149.1 litres per day). Less than half of it, some 42%, comes from treated potable water from municipal water supplies, with the remainder provided by the on-site well.

Both water sources supply the toilets and a range of other uses, such as the cooling mechanism in the skylight. The shopping centre has an advanced network of water meters, measuring the quantity of water consumed for each type of water and for each use (WCs, irrigation, etc).

The taps initially installed in the toilet refurbishment of 2017/2018 did not feature any additional measures and were consuming a range of 3.5 to 4.28 litres per minute.

Sonae Sierra needed to determine the right mechanism for improving this amount of water consumption, while continuing to serve the centre's users to the highest level. But also considering the business case of the improvement measure, as the price of water is quite low.

We decided to apply Dive® to achieve a more precise analysis of the centre's consumption metrics, and determine both quick wins and the potential for medium and longer-term investments to improve its water efficiency.



60,000 m³
ANNUAL WATER CONSUMPTION OF
CENTRO VASCO DA GAMA



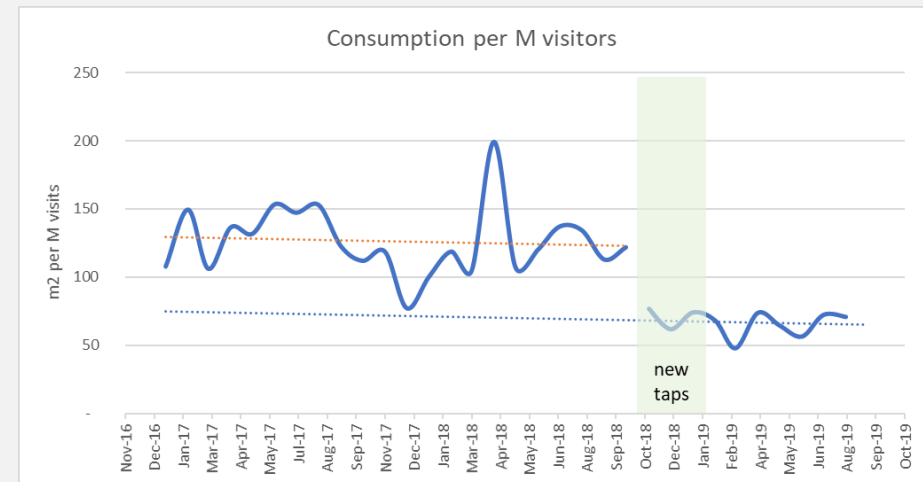
3.5 to 4.28 l/minute
CONSUMPTION OF THE TAPS INITIALLY
INSTALLED IN THE TOILET REFRUBISHMENT
(2017/2018)

Solution

Sonae Sierra applied its in-house expertise to Centro Vasco da Gama to achieve a precise analysis of its water efficiency, before executing the required maintenance.

The solution for saving water in this case was determined to be the installation of **tap aerators**, a **low-expense mechanism which does not compromise the hand-washing experience**. It would save more than **40% of the water used**. That enabled us to forecast a **reduction in water flow from over 3.5 litres per minute to an improved 1.9 litres per minute, at the very least**.

Expected savings were in the range of 2,500 m³ or €3,500 per year, due to the reduction of the potable water use, which equates to around 9% of the total water cost of the shopping centre. A total of 102 taps were fitted with the new aerators, during the period October-December 2018.



The graph displays the trend over time, based on the monthly potable water readings for the WC blocks where aerators were added. Significant improvements are evident from October-December 2018, coinciding with the installation of the new aerators.

Conclusion

Water use varies significantly between real estate assets for a broad range of reasons. By comparing expected water usage with its actual use and cross-referencing assets within a portfolio, clients gain valuable data that can be used to inform and shape decision-making.

To date, Sonae Sierra's Dive® programme has successfully implemented measures generating annual savings of nearly 105,000 m³ of water, equivalent to €428,000 in costs. The average payback time for measures implemented is around 3 months.

In the case of Centro Vasco da Gama, for the three blocks where the taps were modified the average flow is now 1.5 litres / minute instead of 3.5 litres / minute, around 982 m³ of water were saved over nine months in 2019, relative to 2018 values. This represented a reduction in consumption of 46%, or an expense of around €3,400. On a yearly basis, these improvements represent a saving of 1,300 m³ of potable water or €4,500, enough for around 25 inhabitants of Lisbon.

Our Dive® Programme has shown that taking care of the smallest drop makes a big difference to water consumption, with a favourable impact on both costs and resources.



-46%
WATER
CONSUMPTION

-1,300 m³
WATER
CONSUMPTION

€4,500
COSTS AVOIDED



www.sonaesierra.com