

Zurich Airport Brasil



Airport Name: Aeroporto Internacional de Florianópolis | Aeroporto Internacional de Vitória | Aeroporto de Macaé

Airport Group: Zurich Airport Brasil

Responsible: Anderson da Silva Pinheiro, Engineering, Maintenance, Infrastructure and Sustainability Manager

Project Name: Aqua Project

Executive Summary

Commitment to the environment and sustainable development are one of the values set by Zurich Airport Brasil. In view on that, in 2023, Zurich developed the innovative Aqua Project in the Airports of Florianópolis (FLN), Vitória (VIX) and Macaé (MEA), which aims to optimize and reduce water consumption by making the water system more economical and efficient, contributing to the preservation of the environment and aligned with the UN's Sustainable Development Goals (SDGs) 6 (Clear Water and Sanitation), 9 (Infrastructure and Industry Innovation), 12 (Responsible Consumption and Production) and 13 (Combating Climate Change).

The Aqua Project consists in four steps, which are:

(i) Water reuse, which includes the installation of a Rainwater Treatment Plants – ETAP (VIX and FLN) providing water for flushing toilets and for gardening; a Thermo Accumulation Tank (VIX) connected to the chillers of the air conditioning system capable of storing a total of 1005 m³ of water; a Reverse Osmosis equipment (FLN) for the reuse of treated effluent water to supply the cooling towers; a Drainage Water Treatment Station (VIX) in the study phase to use macro drainage water from the airport apron and runway; and the reuse of the test water from the fire engine (VIX).

(ii) Water consumption reduction, with the implementation of a device to reduce flow in urinals, new tap aerators and equipment to reduce activation time, and the continuous preventive and corrective maintenance of the water supply system.

(iii) Water consumption monitoring system, which makes it possible to measure water consumption from various consumer systems and act quickly in the event of changes in the consumption pattern. This system includes a daily reading of water meters to calculate consumption by sector; a checklist in Microsoft Forms for daily completion; and the implementation of a Dashboard in PowerBI for the data analysis.

Using this system in the first half of 2023 gave the airport a reduction in water consumption (liters/passenger) of 28% compared with the last year. Also, was verified an increase of 32% in the volumes of treated Rainwater, which has generated financial savings of R\$ 187.000,00.

Results and Benefits of the Project

The Aqua Project provided a reduction in water consumption (in liters/passenger) in the 1st half of 2023 by 28% compared to the same period in 2022, while an increase of 34% in the volume of rainwater treated in this period also generated financial savings of R\$187,000.00 since its implementation.

The optimizations are aligned with actions to combat climate change related to reducing GHG emissions. Lower water consumption leads to lower generation of sewage being treated in Treatment Stations, where, mainly in the biological stages, GHGs are emitted. Furthermore, the project is directly related to the UN's Sustainable Development Goals (SDGs), 6 (Drinking Water and Sanitation), especially in the context of the use of recycled water and the optimization of the water management system, 9 (infrastructure and industry innovation), 12 (Responsible Consumption and Production) and 13 (combating climate change).

From a social point of view, the project promoted beach cleaning and environmental education activities for public school students in communities surrounding the airports. The project indirectly impacts these, given that water consumption and the disposal of untreated effluent can affect the availability of drinking water for the population.

Finally, the BMS (Building Management System) tool supports the project's innovation, in which the VIX and FLN water systems are coupled, enabling real-time monitoring of the volume of water reservoirs and the activation of valves and other tools, avoiding waste by optimizing consumption. Furthermore, in VIX, there is a water heater, which saves water and energy when cooling the air conditioning system. At the same time, FLN has a Reverse Osmosis system being implemented, which will enable the use of water from the ETE in cooling towers.



Aeroporto de Vitória
Utilidades

RESERVATÓRIO ÁGUA POTÁVEL TPS-EIXO 0

Home Legenda

Tanques Água Potável -
Atico - Eixo 0
15000 Litros cada

Nível Min Normal

TANQUE 07

TANQUE 08

TANQUE 05

Nível Min Normal

BOMBA 01

BOMBA 02

BB-01

COMANDO

ESTADO

FALHA

HORIMETRO 538.5 hours

BB-02

COMANDO

ESTADO

FALHA

HORIMETRO 530.8 hours

**Parâmetros do Sistema
QFCE-002/REC-G**

Disjuntor Principal

Chave Seletora Remoto

Chave Seletora Local

Chave Seletora Boias

Reset de Falhas

Incêndio Elétrica Iluminação Sinalização HVAC

Johnson Controls