

## Alcântara Wastewater Treatment

The Alcântara subsystem collects and treats urban wastewater from approximately 800 thousand households in Lisbon and its outskirts. This subsystem comprises the Alcântara Wastewater Treatment Plant (WWTP), eleven pumping stations and 22,4 km of interceptor system.

For the preliminary treatment, MULTIFLO and ACTIFLO technologies are used, the latter being only used under wet conditions, when the tributary flows exceed the capacity of the MULTIFLO lines ( $3.3 \text{ m}^3/\text{s}$ ). Subsequent biological treatment is carried out by bio filtration using BIOS TYR technology. The plant is equally equipped with a deodorizing system with the capacity to treat  $160,000 \text{ m}^3/\text{h}$  of polluted air. After biological treatment, the wastewater undergoes ultraviolet disinfection and is finally discharged on the Tagus river under safe environmental conditions.

This WWTP is considered one of the best environmental engineering works in Portugal and it even features in international guides to the best industrial architecture to be visited. The existence of this WWTP may, however, go by unnoticed. It is unique in its carefully planned suspended gardens, making it perfectly integrated in the urban landscape. This eco-design also protects the facilities from extreme sunlight, sudden downpours, and helps improve air quality and promote urban biodiversity.

Source: [AdP](#), [SIMTEJO](#)

**Suspended Gardens over the WWTP**



A surface area of over 3 hectares

**Archimedes' Screw**



Maximum lifting capacity of  $6,6 \text{ m}^3/\text{s}$

**Desanding / Degreasing System**



6 units with maximum overall flow of  $6,6 \text{ m}^3/\text{s}$

- Length: 30 m
- Width: 4,5 m
- Maximum depth: 4,5 m
- Transversal area:  $14,4 \text{ m}^2$
- Net storage volume:  $431,7 \text{ m}^3$
- Maximum hydraulic load:  $29,3 \text{ m}^3/\text{m}^2 \text{ h}$

**Ultraviolet Disinfection**



UV channels, using low pressure and high intensity lamps, with automatic mechanical and chemical cleaning