



Manacor STP, Spain Mammoth Rotors - 18 years of reliable operation

Situation

The wastewater treatment plant (WWTP) of the municipality of Manacor, in its configuration is the result of the work defined in the "Modified project for the execution of the extension and improvements to the Manacor (Mallorca) Wastewater Treatment Plant", from 1996. The works were executed between the years 1998 and 1999, so that the effective consumed life of the WWTP is 18 years.

Among the treatment processes of the WWTP of Manacor is the biological treatment, consisting of a 5.000m³ capacity looped carousel type tank, with surface aeration and agitation to degrade the carbonate matter and to biologically eliminate the nitrogen.

Here 4 Passavant® mammoth rotors MR 1000-7.5 and one submersible mixer are installed. The WWTP was designed for 5,000 m³/d (25,000 PE). If either the design flow rate has not been exceeded (in dry time), the actual current load is close to 30,000 PE in some months of the year. The consequences are increased energy consumption, the formation of bulking sludge and, at certain points, non-compliance with limit values of e. g. suspended solids.

This circumstance causes the authority and operator SAM Manacor to take action and modernise the plant.



Solution

The authority and operator SAM Manacor has developed a multi-stage action plan:

Step 1: Installation of a further submersible mixer, as already provided for in the planning

Step 2: Replacement of a first mammoth rotor for operation in reserve

Step 3: Replacement of the other installed mammoth rotors

Since the sewage treatment plant has only one biological tank, it is important that the equipment used for oxygen input is always functional. The first Passavant® mammoth rotor, equipped with a 37 kW drive, has already been replaced. Without the use of guide baffles the calculated oxygen transfer is ~56 kgO₂/(h*rotor). With the correct installation of guide baffles the oxygen transfer could be increased to ~67.5 kgO₂/(h*rotor). The operator SAM Manacor is convinced of the quality, durability and performance of the Passavant® mammoth rotors, which have been in operation for 18 years. The installed mammoth rotors are described as very reliable and low-maintenance and have proven to be a cost-effective solution over the years. Based on these characteristics and reliability, the authority has once again selected the Passavant® mammoth rotors from Aqseptence Group.

Technical Data

Passavant® Mammoth Rotor

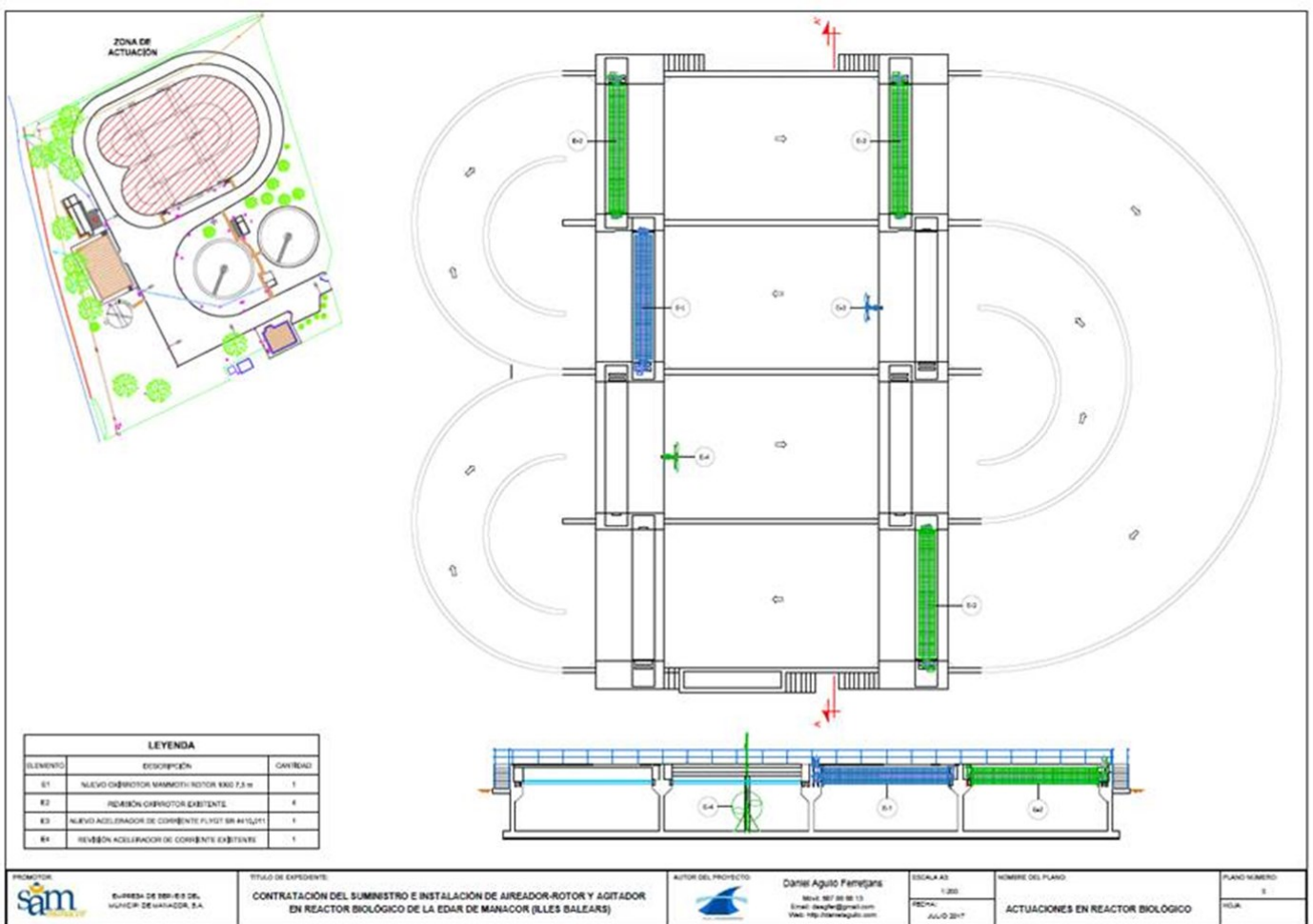
Type:	MR 1000-7.5
Year of Installation:	2019
Diameter of Rotor:	1000 mm
Length of Rotor:	7500 mm
Drive Unit:	37 kW
Material Blades:	GRP
	Installed under concrete bridge

3 x Passavant® Mammoth Rotor

Type:	MR 1000-7.5
Year of Installation:	2019
Diameter of Rotor:	1000 mm
Length of Rotor:	7500 mm
Drive Unit:	37 kW
Material Blades:	GRP
	Installed under concrete bridge

Design

The blue marked mammoth rotor was easily replaced.



Erection & Commissioning



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