WASTEWATER
REUSE

Central Manila
Wastewater Treatment Plant

A combination of compact and innovative technologies

Covering an area of 636 square kilometers, Metro Manila is the densely populated National Capital Region of the Philippines, comprising 16 cities and one municipality and hosting around 14 million residents.

Client objective

Maynilad, the main water supplier in the Philippines, is facing a major challenge. Indeed, a large part of the city of Manila, more than 70%, is not yet connected to a wastewater treatment facility. This results in the daily discharge of over 100,000 m^3 of untreated wastewater into Manila Bay. The situation is further exacerbated by the fact that Manila Bay is connected to Laguna Lake, a vital source of drinking water for millions of people. Given the historical, political, and commercial importance of these bodies of water, the government has made their sanitation a priority. Maynilad has also expressed its interest in integrating a treatment line that allows the reuse of purified water.

It is in this context that SUEZ won the contract in 2024 for the design and build of a new wastewater treatment plant with a capacity of **180,000 m^3/day** to treat the wastewater from the northern part of Manila in anticipation of future needs. The contract also includes the rehabilitation of the TONDO wastewater pumping station to comply with the latest local standards in force.

500 m^3/day
Partial reuse of treated water

Our solutions

Our solution integrates 5 major SUEZ innovations, which provide an effective response to the crucial challenge of wastewater management in Manila Bay:

- A primary treatment with 4 **Sedipac® Turbo 3D** lamellar settlers that allows increased biogas production and reduces the environmental footprint.
- 8 **Cyclor® Turbo**, a process of intensifying biological treatment, which combines performance, sobriety, and resilience.
- A tertiary treatment with 4 **Compakblue®** disk filters, to eliminate suspended matter and be able to deliver REUSE quality water.
- 2 **Drainis® Turbo**, a pre-thickening for biological sludge.
- 2 **Digelis® Simplex** stainless Verinox® steel metal digesters.

These compact and robust technologies represent the most suitable option for the space and budget constraints of this project, while minimizing the environmental footprint.

Benefits

Our design will ensure that the treated wastewater complies with the strict effluent regulations set by the Department of Environment and Natural Resources of the Philippines (DENR), standards comparable to those of the European Union.

Moreover, this facility will have a beneficial impact on Laguna Lake, which is a vital source of drinking water for millions of people in the region and which is connected to the bay by the Pasig River.
The solutions implemented are robust and resilient, they will maintain the integrity and quality of the facilities and reduce the environmental footprint through low energy consumption.

Differentiating factor

SUEZ has been able to stand out thanks to two key factors:

- We have met our client's requirements in terms of performance, adaptability, flexibility, and operability, by providing a detailed multi-criteria analysis to justify the selection of technologies.
- The durable and solid relationship with our client, established over the years by the local team, has played a decisive role. This trust has been consolidated by the innovative solutions that SUEZ constantly develops to meet the increasing demand for compact solutions, as well as by the remarkable performance demonstrated in the company's reference projects.

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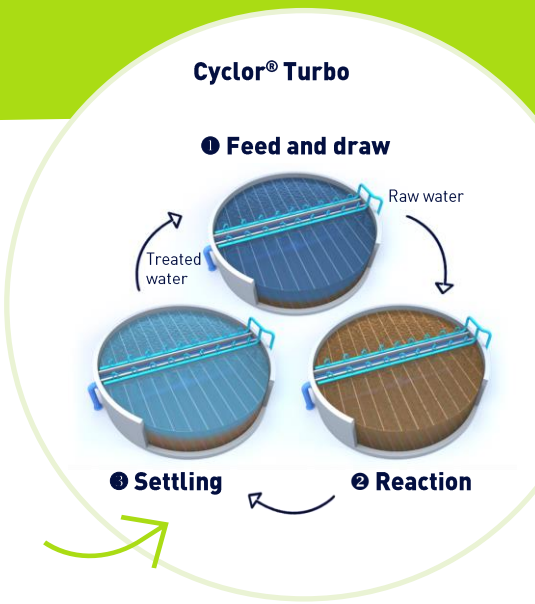
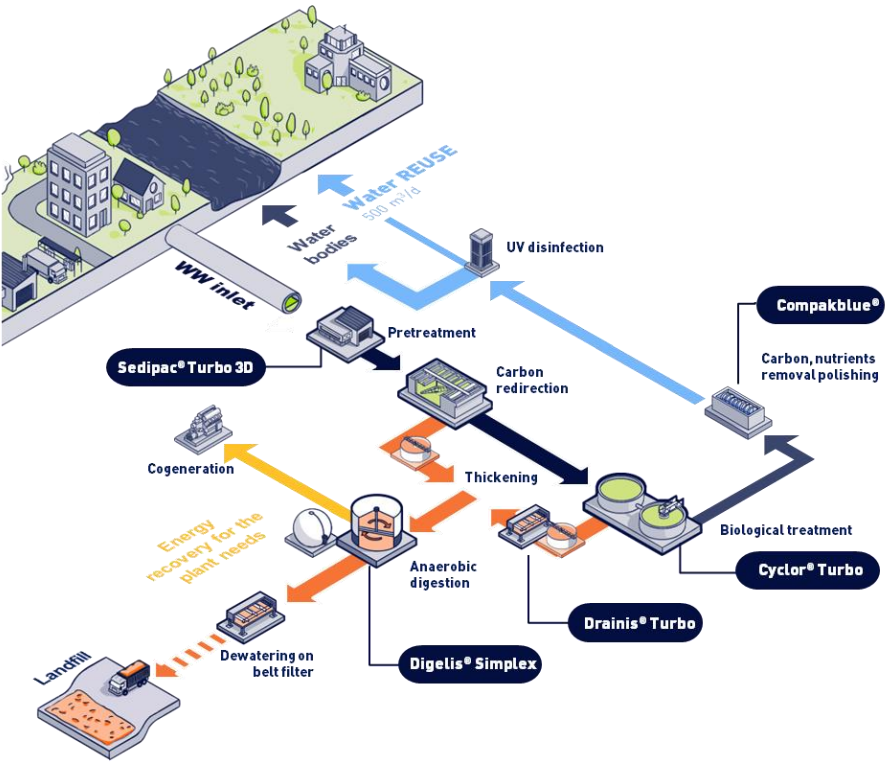
Central Manila Wastewater Treatment Plant



Treatment line in detail

WATER LINE

- **Primary treatment** with **Sedipac® Turbo 3D** lamellar settlers, installed after screening. This process operates at a high settling velocity and allows to combine in the same structure the functions of sand removal, degreasing and primary settling. This compact solution optimizes biogas production without the addition of reagents.
- **Biological treatment** with **Cyclor® Turbo** process, an advanced Sequenced Batch Reactor (SBR), operating in 3 main phases within each cell. This process combining enhanced hydraulic engineering and process intensification of activated sludge aims to:
  - ensure excellent effluent quality (carbon, nitrogen, phosphorus, suspended solids),
  - lower operating costs (less kWh, reagents, sludge),
  - reduce the environmental footprint (m², greenhouse gases).
- **Tertiary treatment** with **Compakblue®** disc filter, recommended for the reduction of suspended solids, particularly suitable for REUSE or discharge in sensitive areas. Its flexibility of integration, reliability and low energy consumption perfectly meet the objectives of this project.
- **Final disinfection by UV**.



SLUDGE LINE

- **Thickening sludge** with :
  - **Conventional gravitational thickening** for primary sludge,
  - **Drainis® Turbo** process is used for biological sludge. It is a pre-thickening workshop. It operates as a fast gravitational decanter, concentrating the sludge which allows to reduce the size of downstream mechanical equipment and to deliver a stable concentration, necessary for their good performance. Moreover, this process has the advantage of having low energy consumption.
- **Digestion** with metallic digesters **Digelis® Simplex** with integrated gasometer. The construction method without welding or bolts from Verinox® steel coil automatically assembled in spirals with an innovative folding system (patented Double-Seam Lipp) guarantees perfect reactor sealing over time and reduces construction time.

Compact version with integrated gasometer

Double-Seam Lipp system

TYPE OF CONTRACT	CONTRACT DURATION	CAPACITY OF THE PLANT	POPULATION SERVED
DB Design & Build	**2024-2027**	**180,000 m³/day**	**800,000 PE**

SUEZ Engineering & Construction
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