

# CIVIL AND INDUSTRIAL WASTEWATER TREATMENT PLANTS



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*"Water is an essential resource for life and good health. The water scarcity and the deterioration of his characteristics could impede the international development. It urges everyone to be part of efforts to conserve and protect the resource"*

*(WHO, World Health Organization)*

Starting from the inlet quality of water, PERTECO can evaluate the optimal treatment in order to get an highly quality of outlet water that can be discharged according to local environmental rules.

**Thanks to the wastewater treatment, great attention is paid on the management of the available water resource.**



The treatment can be realized also with the purpose of reuse wastewater inside of the facilities which produce it. Examples of noble reuse of treated waters are: irrigation and reuse like process or cooling water in the productive activities.

Advanced water reuse can help industries and municipalities to reduce overall water consumption and wastewater discharges.

**We are sure that it possible to save water and costs by effluent reuse.**



Our company's "mission" is to help our Customers to treat the wastewater offering the more ecological and cheaper solution: starting from smart solutions to the latest technologies available on the market.

We pay particular attention on offering solutions able to minimize all the construction costs, reducing the necessary space till to limit cost of civil works.

The easier way to obtain this result is a strict collaboration with the Customer.



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Regarding **civil applications** PERTECO designs and supplies treatment plants for wastewaters produced by little communities, for example:

- Residential areas
- Schools
- Hotel & touristic resorts
- Swimming pools
- Touristic harbors
- Golf courts
- Temporary construction sites

The water treatments must satisfy particular necessities, such as: **easiness management with reduced maintenance**, suitability for **hydraulic and variable organic loading** functioning, **reduced odor and noise impact**, particularly in **touristic areas**.

All these aspects have also to take into consideration the visual impact of the plant, which has to be minimized as much as possible and harmonized with the surrounding area.

Thanks to a strict collaboration with important architectural companies, PERTECO is able to propose eco-integrated plant solutions which represent the state of art from the environmental point of view.



In **industrial applications** PERTECO designs and supplies treatment plants for wastewaters produced by productive processes of different type, with particular attention to the food processing and manufacturer sector such as:

- Food and beverage industries
- Slaughterhouses and meat processing
- Manufacturing industries
- Metallurgical industries
- Car washing plants

For these productive realities, PERTECO promotes the water **reuse**, thanks to the recovery technologies based on membrane filtration and reverse osmosis.

The foreseen treatments will be specific according to the final destination of the treated water.

All the plant realizations must satisfy the Customer's needs and must be **reliable and with lower management costs**.



Some examples of the more frequent applications proposed for civil and/or industrial wastewater are:

- **Compact wastewater treatment plants with membrane biological reactor (MBR):** they are the evolution of the traditional treatment which use activated sludge. This choice allows to design a compact plant with very high depurative performances. The MBR solution is particularly suitable in case of the Customer wants to reuse the water for irrigation or washing processes.
- **Compact wastewater treatment plants with moving bed biological reactor (MBBR):** they are a further compact solution with high depurative performances of biological treatment. The MBBR process employs a submerged ring media onto which micro organisms attach. They are also used for retrofits activate sludge plants to improve capacity and effluent quality.
- **Reverse osmosis plant:** they are based on the famous principle of the reverse osmosis, where the use of the high performances membranes with suitable pressure conditions, grant the elimination of the saline content in water. They find their most suitable employment in the industrial waters which have to reach high qualitative standards since they have to be reused inside productive site.

PERTECO supplies wastewater treatment plants according to the specific needs of the Customer, operating as follows :

- It evaluates the initial characteristics of the water, such as flowrate and chemical-physical composition as well as the site environmental conditions.
- It develops a feasibility study and finds one or more plant solutions suitable to obtain the final aim.
- It dimensions the plant giving particular attention to the relevant layout in order to grant the reduction of spaces.
- It suggests the best solution and optimizes the design in accordance with the Customer's requests.
- It manages the plant supervision during construction and start-up phases.
- It supplies the technical and maintenance training to the Customer's personnel.

**At the end we think that the Water Management have to be ecologically and economically efficient.**