

IDRO GROUP

Air treatment: biofiltration



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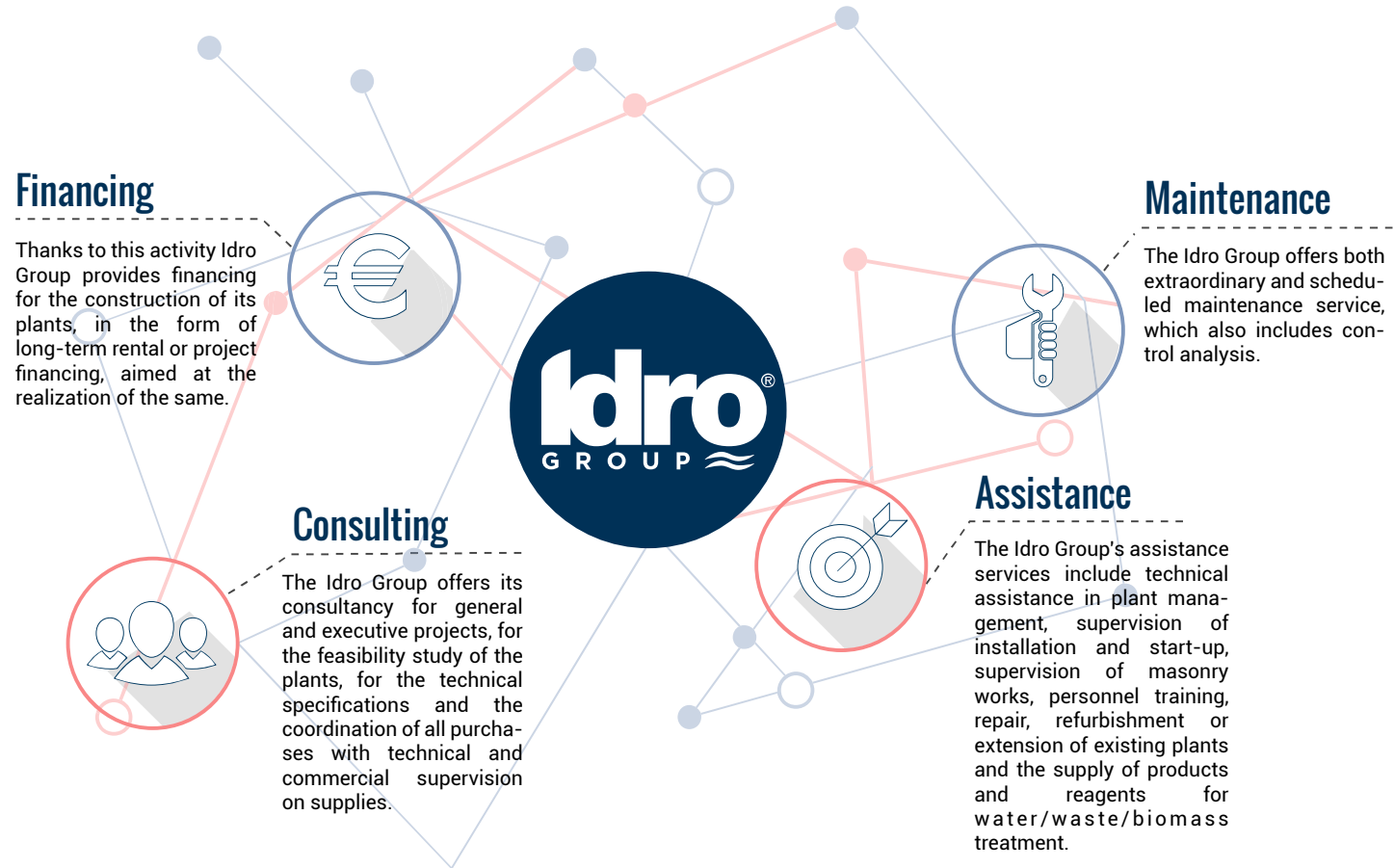


Expertise & technologies at the service of the environment

Idro Group has more than **40 years old experience** and is specialized in the design and construction of water treatment plants and clean energy production. By applying innovative technologies Idro Group develops: mobile and containerized plants, systems for water purification, civil and industrial wastewater treatment and reuse, **air deodorization plants** and plants for biogas and biomethane production.



OUR SERVICES



AIR TREATMENT: INNOVATION IN BIOFILTRATION

IDRO Group offers systems that guarantee excellent deodorization results **in the simplest natural and economic way**. The biofilter is the most natural system for air purifying.

In air purification systems through chemical adsorption towers for instance, the polluted air is transferred into either the water or activated carbons which are then themselves purified or disposed of as special waste.

In biofiltration, the hazardous substances get degraded to non-toxic compounds such as carbon dioxide and water by aerobic bacterial flora which lies on special supporting beds: the **BIOPOR** or the **BIOMAT**.



AIR TREATMENT: **BIOPOR** & **BIOMAT**

BIOPOR is a special filling material with the use of an inert and porous element which acts as a supporting basis to microorganisms. It is extremely resistant over time and doesn't allow the "classic" crushing phenomena.

BIOMAT is the wooden material and is designed to preserve the porous structure which delivers support to the microorganisms.

During air migration through the filtering pours structure of the supporting beds, the foul-smelling substances are destroyed by activity of bacteria.



THE NEW IDRO BIOFILTER ENSURES GREATER EFFICIENCY AND MAXIMUM DURATION

BIOFILTRATION: AN INNOVATIVE TECHNOLOGY

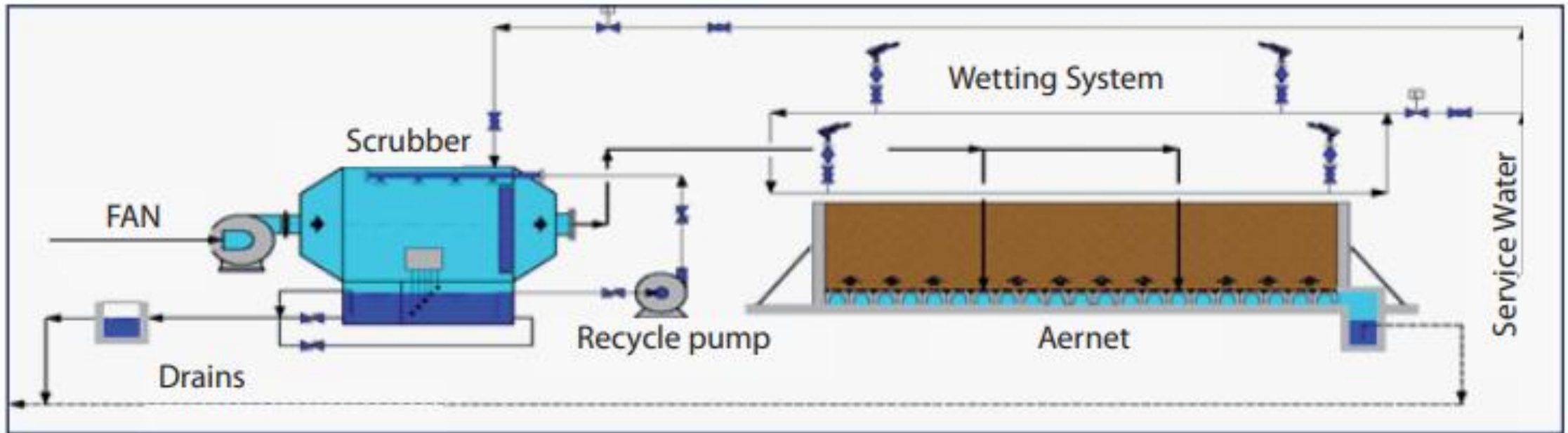
The air to be purified is first conducted through a **conditioning** and **pre-washing** scrubber where the proper environmental conditions for bacterial growth are created by removing coarse dirt and reaching a specific level of humidity.

The air is then sent into an expansion section created through a perforated floor made of reinforced modular concrete elements. These modular elements allow the air to be distributed throughout the entire surface of the foundation and equally to the filtering bed within which the biologically-active filling runs.



THE NEW IDRO BIOFILTER ENSURES GREATER EFFICIENCY AND MAXIMUM DURATION

BIOFILTRATION: AN INNOVATIVE TECHNOLOGY



THE FILTERING MATERIAL: **BIOPOR**

BIOPOR is an inert material with high porosity, it is of volcanic origin and it gets activated by a special bacteria mixture.

With zero water absorption rate it also shows total resistance to bacterial attack, therefore significantly reducing maintenance costs. As a matter of fact, BIOPOR does not require the standard recommended vegetal material replacement interval but it allows long-term maintenance time (more than 15 years).



THE NEW IDRO BIOFILTER ENSURES GREATER EFFICIENCY AND MAXIMUM DURATION

THE FILTERING MATERIAL: **BIOMAT**

BIOMAT is a wooden plant material of medium size. It is originated by clean and dilacerated wood and it also gets biologically activated by a special bacterial mixture.

The material has the property of having excellent porosity, low water absorption and outstanding resistance to bacterial attack even in circumstances of high temperature and humidity.



THE NEW IDRO BIOFILTER ENSURES GREATER EFFICIENCY AND MAXIMUM DURATION

THE FLOORING

The flooring is essential in order to obtain an optimal filtration process. It is made of plastic modular elements allowing the load-bearing concrete perforated platform of supporting heavy vehicles (actual load of 10,000 kg/sqm).

Flooring requires very short installation time reaching extraordinary results of accuracy. The uniform distribution of air on the filter surface occurs due to presence of calibrated inlet nozzles. This way, the filter will always operate at full capacity as it was just installed.



THE NEW IDRO BIOFILTER ENSURES GREATER EFFICIENCY AND MAXIMUM DURATION

WHY CHOOSE AN IDRO GROUP BIOFILTRATION PLANT

LONG – LASTING

With **BIOPOR** material : no maintenance or replacement before 15 years from laying

MAXIMUM EFFECTIVENESS

The type and the arrangement of inlet holes air guarantee uniform diffusion.

RESISTANCE & EASY LAYING

Thanks to driveway heavy and modular flooring.

IDRO GROUP

Biofiltration plants:

realizations



Biofilter Deodorization - Valbe Servizi S.p.A

Località Mariano Comense – Municipal waste water treatment plant

Client Valbe Servizi S.p.A.

Project Deodorization plant

Air source Air from waste water treatment plant

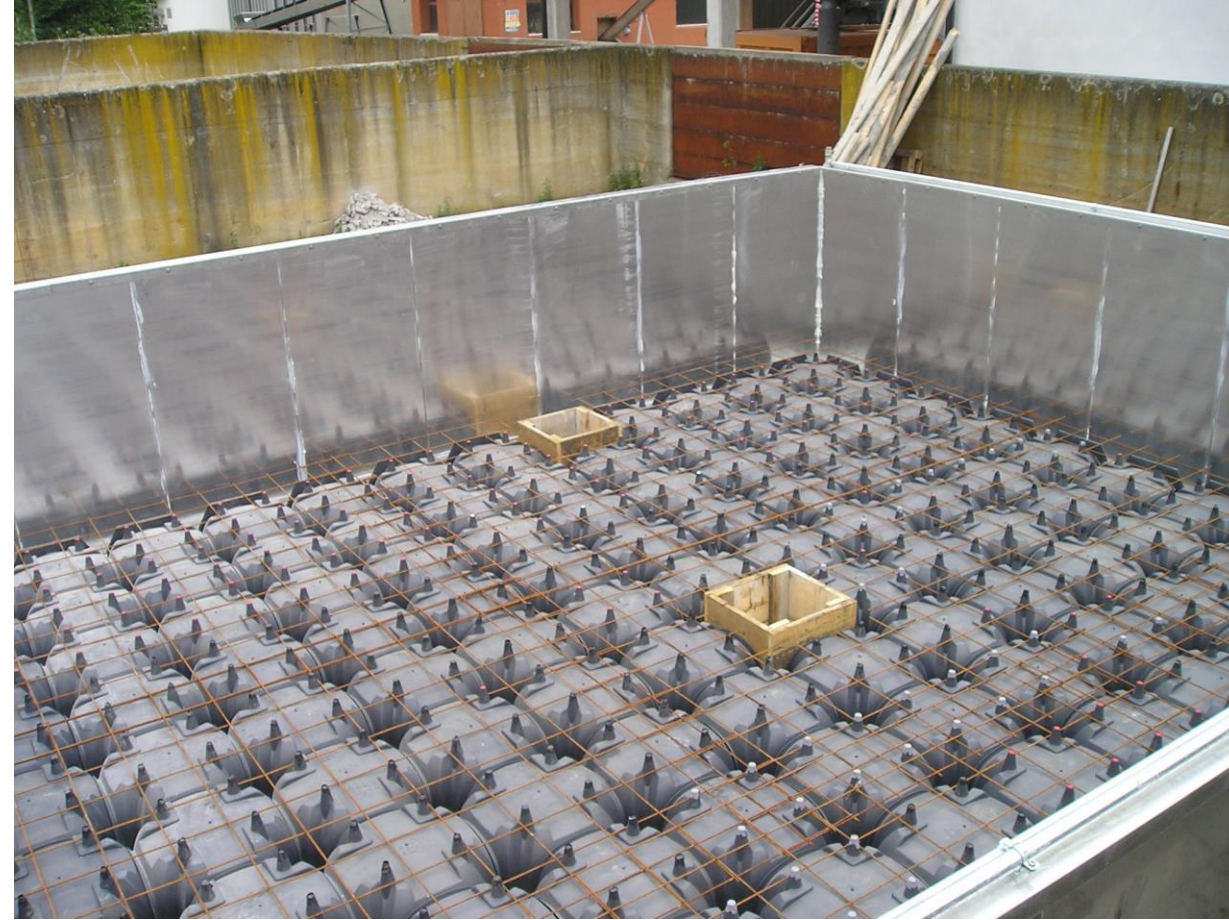
Treatment Biofiltration

Capacity 15.000 mc/h - area 132 mq



Biofiltration Plant 8000 mc/h

Biofiltration plants: **realizations**



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