


Idro Case Study Booklet



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Drinking Water Treatment Plants

- Drinking Water Treatment Plant in Container (*brakish water*)
Gibuti
- Drinking Water Treatment Plant in Container with water bags production
Bergrade | Serbia (EUROPE AID)
- Containerized Drinking Water Units
Afugi | Mozambique
- Containerized Drinking Water Treatment Plant
Pristina | Kosovo
- Containerized Revers Osmosis Water Treatment Plant
Ethiopia | Addis Ababa
- Pilot Plant for drinking water from lake - SHICHAHAI LAKES RESTORATION PROJECT
Beijing | China

Drinking Water Treatment Plant in Container (*brackish water*)

Gibuti

Location:

Italian Military support base in GIBUTI.

Client:

Italian Buildings company

Project type:

Engineering, delivery on site, coordination of assembly operation, supervision and training on site at first start-up.

Water treatment plant:

Reverse Osmosis (RO) system complete with pressure pumps.

Raw water source:

Brackish water sources

Treated water quality:

Drinking water

Capacity range:

Design for flows 4 m³/h.

Drinking Water Treatment Plant 4 m³/h – Blue B Shelter RO system

The Blue B Shelter water treatment unit is designed to produce drinking water from well water sources including in remote areas with limited fresh water resources.

The Blue B Shelter is built inside standard size container(s) – 20', modified and recertified for sea and road transport.

This system is ideal to use in temporary or permanent settlements including workers camps, temporary or mobile exploration camps, village or missions.

The Blue B Shelter includes:

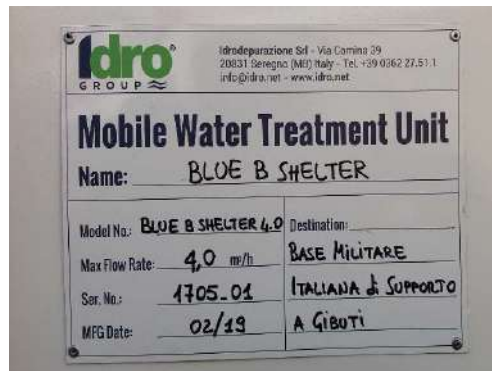
- pretreatment through sand, activated carbon and cartridge filters;
- automatic backwashing system;
- automatic cleaning in place (CIP) function;
- dedicated electrical control panel;

This system is robust and reliable and at the heart of the plant is reverse osmosis (RO) system complete with pressure pumps, energy recovery system, RO membranes specifically designed brackish water and remineralization.

All materials and pumps are corrosion resistant and systems are factory tested before dispatch to site.

Drinking Water Treatment Plant in Container (*brackish water*)

Gibuti



Reverse Osmosis (RO) system complete with pressure pumps for drinking water from well water

Drinking Water Treatment Plant in Container with water bags production

Bergrade – Serbia (EUROPE AID)

Location:

Bergrade - Serbia

Client:

European Union External Action
Public Utility Company Waterworks BELGRADE

Project type:

Containerized Drinking Treatment Plant with Generator trailer mounted Water treatment plants with installation and technical support.

Water treatment plants:

Drinking Water Treatment Plant Filter Station

Raw water source:

Various: ground water, rivers, lakes and sea water.

Treated water quality:

Drinking water meeting W.H.O. Drinking Water Guidelines.

Capacity:

150 m3/day of drinking water.

Drinking Water Treatment Plant in Container with water bags production Bergrade – Serbia (EUROPE AID)

Drinking Water Treatment Plant in container 150m3/h

This drinking water treatment plant is designed to produce drinking water from ground water, rivers, lakes and sea water.

WTP Filter Station able to produce 150 m3/day of safe drinking water .

The System includes :

- Containerized 20' Plants with n. 4 Manual Elevating Legs 10 Ton
- Diesel Generator trailer mounted
- Package Machine able to produce 3 mc/h = 60 mc/day of water bags in different size: 3 , 5, 10 liters

Drinking Water Treatment Plant in Container with water bags production

Bergrade – Serbia (EUROPE AID)



Drinking Water Treatment Plant in container with water bags production 150m3/h

Containerized Drinking Water Units

Afugi - Mozambique

Location:

Afugi – Mozambique

Client:

Renco Spa Italy

Project type:

Supply of n. 3 Drinking Water Treatment Plant Containerized with Technical support and commissioning

Water treatment plants:

N. 3 Water Treatment Plant complete

Raw water source:

Various, e.g. ground water, rivers, lakes and sea water.

Treated water quality:

Drinking water meeting W.H.O. Drinking Water Guidelines.

Capacity:

750 / 880 m³/day

Containerized Drinking Water Units 750 m³/day & 880 m³/day

Containerized Drinking Water Units 750 m³/day & 880 m³/day

Supply of N. 3 Water Treatment Plants for treat water coming from a well and is designed according to the water quality as per water analysis of the wells GW015-016-018 and no RO is needed:

- N. 2 with capacity of 750 m³/day
- N. 1 with capacity of 880 m³/day

The supply of Drinking Water Plant is a part of the final order for Accomodation Camp for a total 9500 Man Camp in Mozambico – Afugi.

Containerized Drinking Water Units

Afugi - Mozambique



Three (3) Drinking Water Treatment Plant Containerized
with Technical support and commissioning



Containerized Drinking Water Treatment Plant

Pristina - Kosovo

Location:

Pristina Kosovo

Client:

KFOR Multinational Special Unit
Regiment HQ MSU Carabinieri

Project type:

Turnkey project for the design, construction, installation and commissioning on site Pristina

Water treatment plants:

Drinking RO Water Treatment plant

Raw water source:

Water from Municipality

Treated water quality:

Drinking water under D.Lgs.vo 31/01 Italian Law

Capacity:

Flow rate 4 m3/day of drinking water

Containerized Drinking Water Treatment Plant

The RO WTPlant is contained inside a 20' container together with a 10' container used for the backwash tanks.

This RO Water treatment plant produces up to **4 mc/h of drinking water**.

The plant is complete with a pre-treatment unit necessary to reduce the pollutant load to the osmosis unit and a post-treatment unit useful for safety coverage before use.

The water produced complies with the limits dictated by Legislative Decree n. 31/01 Italian law currently in force for drinking water.

The plant was designed and delivered turnkey with installation, training and commissioning on site in Pristina at the KFOR base of Italian Carabinieri Regiment.

Containerized Drinking Water Treatment Plant

Pristina - Kosovo



Containerized Drinking Water Treatment Plant with Technical support and commissioning

Containerized Revers Osmosis Water Treatment Plant

Ethiopia – Addis Ababa

Location:

Ethiopia – Addis Ababa

Client:

Myseru General Trading PLC

Project type:

Supply of n. 1 Drinking Water Treatment Plant Reverse Osmosis for 5 stars hotel

Water treatment plants:

N. 1 RO Water Treatment Plant

Raw water source:

Various, e.g. ground water, rivers, lakes and sea water

Treated water quality:

Drinking water meeting W.H.O. Drinking Water Guidelines.

Capacity:

Flow rate 170 m3/day

Reverse Osmosis Containerized Drinking Water Units 4 m3/h

Supply of Reverse Osmosis Water Treatment Plant for five(5) stars hotel in Ethiopia Addis Ababa.

Drinking Water Treatment Plant in container 40' ISO standard with capacity of 170 m3/day.

Architectonic layout of the design has been defined so as to minimize the total impact of works.

The quality of the water treated meeting the W.H.O. Drinking Water Guidelines

Containerized Revers Osmosis Water Treatment Plant

Ethiopia – Addis Ababa



Containerized Reverse Osmosis Water Treatment Plant for five stars hotel in Ethiopia Addis Ababa

Pilot Plant for drinking water from lake - SHICHAHAI LAKES PROJECT

Beijing - China

Location:

Beijing, China

Client:

China's Ministry of Water Resources and Municipal authorities of Beijing.

Project type:

Pilot Plant designed to test different water treatment options together with a water circulation scheme, the treatments include:

- Flocculation
- Filtration
- Reverse Osmosis

Data was collected from the WTP to verify the best solution for the larger purification project.

Water treatment plants:

Drinking RO Water Treatment plant

Raw water source:

Shichahai Lakes, Beijing, China

Treated water quality:

Fresh water safe for human contact and natural eco systems

Capacity:

18 to 21.5 m3/hour with filters working in parallel + RO treatment

Pilot Plant for drinking water from lake

Under the umbrella of an Environmental Cooperation Program between China and Italy, this urban regeneration project is addressing the problem of water eutrophication and pollution in the Shichahai Lake system in Beijing.

The historic Shichahai Lakes required the restoration of fresh water circulation and the biological purification of the water. The project started with a detailed feasibility study and the selection of the most efficient solutions followed by the actual restoration of fresh water circulation in the lake, and the biological purification of the water.

For this purpose EMWG developed a water treatment plant (WTP) specifically designed to trial different purification options. The WTP included the following stages: water intake pumps, coagulation-flocculation, chlorine metering, sand filtration, dechlorination, cartridge filtration, reverse osmosis treatment and air injection. For months data was collected from both the system and the waters to determine exactly what treatment, or combination thereof, was most effective.

The successful pilot project determined the optimum combination of filtration, reverse osmosis treatment and water circulation required to restore the water quality both for the ecosystems relying on the water and the people enjoying leisure activities on and around the Shichahai lakes in Beijing's Forbidden City.

Pilot Plant for drinking water from lake - SHICHAHAI LAKES PROJECT

Beijing - China



Pilot Plant designed to test different water treatments

Reverse Osmosis Drinking Water Treatment Plant

Roma - Italy

Location:

Roma, Italy

Client:

Ministry of Defence – Naval team

Project type:

Supply of RO WTP Plant

Water treatment plants:

Reverse Osmosis (RO) brackish water desalination plants producing drinking water complete with pre-treatment on skid

Raw water source:

Brackish water

Treated water quality:

Drinking water

Capacity:

Producing
1 m³/h of drinking water

Reverse Osmosis for brackish water – 1m³/h of drinking water

For the treatment of brackish water with a high concentration of hydrocarbons, arsenic and selenium, a reverse osmosis system complete with pre-treatments, pre-assembled on skid, is proposed.

The system has been sized in such a way as to obtain approximately 1 m³ / h of drinking water, compared to a flow rate of water supplied equal to approximately 2 m³ / h (the quantity of water to be fed may vary in relation to the characteristics and composition of the feed water).

A final remineralizing filter is also provided for the correction of the pH and the restoration of the mineral characteristics of the water.

The activated carbon filter has been sized to ensure the removal of total polycyclic hydrocarbons and residual chlorine (due to the hypochlorite dosage for initial disinfection), both of which are harmful to reverse osmosis membranes.

The reverse osmosis treatment system aims to remove the substances dissolved in the water. The system involves the use of membranes that allow to completely eliminate polluting particles as well as viruses, bacteria and impurities in general. An initial cartridge filter is also provided to eliminate sand or other elements that cloud the water.

Reverse Osmosis Drinking Water Treatment Plant

Roma - Italy



Reverse Osmosis Water Treatment Plant - 1m³/h of drinking water

Industrial Water Treatment Plants

IDRO REUSE

- Industrial Water Treatment Plant | Osmosis plant
Filago (BG) - Italy
- Industrial Water Treatment Plant | Idro Reuse 120m3/day
Montecchio (VI) – Italy
- Industrial Water Treatment Plant | Idro Reuse 120m3/h
Comunnuovo (BG) - Italy

Industrial Water Treatment Plant – Osmosis plant

Filago (BG) - Italy

Location:

Filago (BG) Italia

Client:

Synthomer (BG)

Leading Company in the Chemical Industry and Aqueous Polymers

Project type:

Turnkey project for design, construction, installation and commissioning on site.

Water treatment plants:

Osmosis Water Treatment Plant

Raw water source:

Water from a well

Treated water quality:

Water suitable for reuse in groundwater or in the production cycle.

Osmosis Water Treatment Plant

This osmosis plant has been sized for a supply flow rate of 36 mc/h and a permeation efficiency of 70% which guarantees maximum water production at 25 mc/h.

The osmosis unit has been set up with a double pressurization pump to have a redundancy that guarantees immediate continuity of operation in the event of a failure of one of the machines.

To ensure a hardness value close to 0 in the treatment chain, a DUPLEX softening unit with n. 2 redundant columns downstream of the osmotic modules.

Finally, an intermediate passage tank has been prepared from which the osmotic water is released to the softening unit with double redundant pump.

The plant is able to achieve excellent levels of output water quality.

The waste water is also suitable for discharge into surface water but the ideal destination is still reuse in the plant where possible.

Industrial Water Treatment Plant – Osmosis plant

Filago (BG) - Italy



Reverse Osmosis Water Treatment Plant for chemical Industry



Industrial Water Treatment Plant – Idro Reuse 120m³/day

Montecchio (VI) - Italy

Location:

Montecchio M.re - Vicenza - Italy

Client:

Lowara S.r.l. a Single Member

Project type:

Design, construction, installation and commissioning of a containerized process water treatment plant from the company's production departments

Water treatment plants:

Ultrafiltration treatment plant + Containerized nanofiltration inside ISOLATED 20' and 40' containers

Raw water source:

Wastewater from the company's production departments

Treated water quality:

Water for technical use

Capacity:

Input range: 120 mc/day

Flow of treated water leaving and postponed to production: ca. 85 mc/day

Process water treatment and recovery plant from mechanical industry - 120 mc/day

The system is designed for the treatment and reuse of process wastewater coming from an electro pumps production plant.

To minimize the impact of the plant on the surrounding environment, the proposed design solution has been developed to reduce the areas, to minimize the management of the plant and the operating costs, also allowing a possible future expansion, maintaining the same type of treatment sections.

The type of process is a treatment of ultrafiltration followed by nanofiltration and supplemented by a chemical-physical for the recovery of the concentrates of the first stage.

This treatment system has been optimized from an engineering point of view, having maximum working stability and great ability to adapt to changes in quality and quantity on incoming pollutants, minimizing the volumes involved, in order to obtain a package installation.

The recovery rate is at an average of 65-70% of the incoming water and the concentrated drainage allows discharge with values contained within the limits of acceptability for discharge in public sewer.

The plant is also designed to work with difficult climatic conditions since the external temperature of the installation area varies from -10 ° C to + 40 ° C.

Industrial Water Treatment Plant – Idro Reuse 120m3/day

Montecchio (VI) - Italy



*Ultrafiltration and Nanofiltration treatment plant
in isolated 20' and 40' containers*

Industrial Water Treatment Plant – Idro Reuse 120m³/h

Comunnuovo (BG) - Italy

Location:

Comunnuovo (BG)

Client:

Heineken S.p.A

Project type:

Demineralization water from wells within the company and reuse water industrial processes.

Water treatment plants:

Demineralization treatment plant on columns with strong cationic and anionic resins, with interposed degassing column.

Raw water source:

Raw water from the wells inside the company's process

Treated water quality:

Demineralized water reusable for processes

Capacity:

Input range: 13 mc/hour

Regenerate cycle: 130 mc

Well water demineralization plant - Capacity 13 mc/h – Cyclic 130 mc

Well water treatment plant for technical use.

The system is designed to demineralize water from wells within the company and reuse water industrial processes.

To minimize the impact of the plant on the surrounding environment, the proposed design solution has been developed to reduce the occupying area, to improve the management of the plant, to minimize operating costs, also allowing a possible future expansion, maintaining the same type of treatment sections.

The type of process is a demineralization treatment with strong cationic and anionic resins, with interposed degassing column, for feeding smoke pipe boilers. This treatment system has been optimized from an engineering point of view, having maximum working stability and great ability to adapt to changes in quality and quantity on incoming pollutants, minimizing the volumes involved, in order to obtain a compact installation.

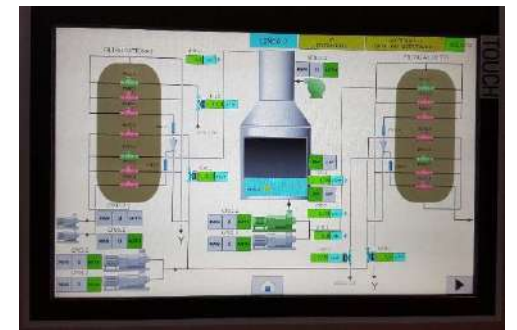
The system is also designed for the completely automatic operation of the various phases of filtration, regeneration and recirculation of the water produced, depending on the variability of the flow rates required by the boilers.

Industrial Water Treatment Plant – Idro Reuse 120m³/h

Comunnuovo (BG) - Italy



Well water demineralization plant Capacity 13 mc/h – Cyclic 130 mc



Ballast Water Treatment Plants

- Worldwide

Ballast Water Treatment System – on skid

Worldwide

Application:

Marine Worldwide network.

Type approved by revised IMO-G8 standard and the U.S. Coast Guard (USCG).

Client:

Leading global provider and engineering solutions.

Project type:

Treatment Installations for Water Ballast ready-assembled and mounted on skid with all necessary.

Water treatment plants:

All type of water: fresh, brackish and marine water

Treated water quality:

IMO-G8 standard regulated waters

Capacity:

Design and configured for flows of 32 to 300 m3/h.

Water Ballast System

A ballast tank is a compartment within a boat, ship or other floating structure that holds water, which is used as ballast to provide stability for a vessel.

Ballast water taken into a tank from one body of water and discharged in another body of water can introduce invasive species of aquatic life: macro-invertebrates are transported by transoceanic and coastal vessels arriving in ports all over the world.

In order to avoid this environmental and economic damage all ships need to install an on-board ballast water treatment plant. Treats ship ballast water using a system of UV filtration and DISINFECTION which renders microorganisms innocuous and guarantee discharge levels within allowed limits.

The filtration system is delivered as a compact-module, where there is need to economize on space, ready-assembled and mounted on a skid with all necessary equipment and prefabricated pipework.

Approved by revised IMO-G8 standard and U.S. Coast Guard (ESCG), Water Ballast System is certified for ballast water treatment in all types of water: fresh, brackish and marine.

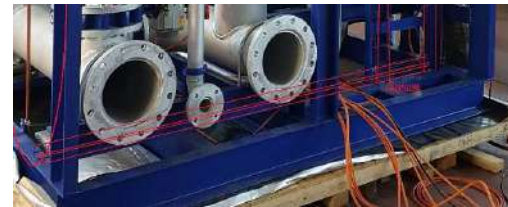
The following components are incorporate into the Ballast skid:

- Filter : the Filter is used during ballasting operations to block the intake of larger organisms and reduce sediment in the ballast water tanks.
- Reactor: Built in stainless steel comprises the enhanced UV treatment stage responsible for biological disinfection.
- Compact Cleaning in Place CIP unit: UV lamp performance is safeguarded by an automatic CIP cycle that removes UV-impairing fouling and scaling.

Drive Cabinet and Control Panel are integrated into a single electrical cabinet. The system is delivered as a compact-module easy to connect and is pre-tested before delivery.

Ballast Water Treatment System – on skid

Worldwide



Treatment Installations for Water Ballast ready-assembled and mounted on skid with all necessary

Compact & Mobile Drinking Water Treatment Units

- Drinking Water Treatment Plant on Skid (Food & Technical use)
Tengiz - Kazakhstan
- Modular Drinking Water Units for UN fields
Field Missions worldwide
- UNICEF Emergency Water Treatment Units
Worldwide
- “Lamella twins” for the Red Cross – Drinking water
Worldwide
- Reverse Osmosis Mobile Water Treatment plant – COMBI TRAILER SW
Dublin – Ireland
- Mobile Drinking Water Treatment plant
Colombo - Sri Lanka

Water Purifying Unit – Pisa Emergency Surgery BLUE ULTRA MINI 600 I/h

Pisa - Italy

Location:

Pisa

Client:

Emergency Surgical Unit Pisa - Italy

Project type:

Ultrafiltration and UV radiation without chemicals ideal for emergency intervention.

Water treatment plants:

N. 1 skid with Drinking Water Treatment with accessories located in a wooden-box

Raw water sources:

Fresh water sources such rivers, lakes, rain water and well water

Treated water quality:

Drinking Water 600 I/h

Capacity:

600 I/h

Drinking Water Treatment Plant Ultra Mini – 600 I/h

The Blue Ultra Mini is a compact mobile drinking water treatment unit ideal for use in a wide range of environments and treats fresh water sources such as rivers, lakes, rain water and well water.

The BLUE ULTRA MINI drinking water treatment unit operates without chemicals:

- the fresh/feed water is treated by stages of filters including ultrafiltration the removal of solid particles.
- the water is sterilized by ultraviolet (UV) radiation with no chemicals substances pouring. UV treatment doesn't change water chemistry.

The BLUE ULTRA MINI unit is user friendly and has eliminated chemical use without compromising performance.

The Unit might be equipped by:

- fuel generator
- a battery and solar panel to work anywhere , anytime

These feature make the unit ideal for remote or hard-to-get-to locations.

The water treatment unit and all accessories are packed together ready for immediate road, air &/or sea transport;

BLUE ULTRA MINI units are delivered “ready to start”;

Once on the ground components can be easily disconnected for easy handling by one or two people; Accessories are located in a box, which it can be put on the skid or transported by hand.

Water Purifying Unit – Pisa Emergency Surgery BLUE ULTRA MINI 600 l/h

Pisa - Italy



N. 1 skid with Drinking Water Treatment with accessories located in a wooden-box



Water Treatment Plant BLUE ULTRA MINI 200 l/h

Perù

Location:

Drinking Water for Perù

Client:

Leading company specialized in solutions, services and project and the generation of energy from renewable resources.

Project type:

Ultrafiltration and UV radiation without chemicals ideal for emergency intervention.

(natural disasters or in camps for displaced people)

Water treatment plants:

N. 1 skid with Drinking Water Treatment with accessories located in a wooden-box

Raw water sources:

Fresh water sources such rivers, lakes, rain water and well water

Treated water quality:

Drinking Water 600 l/h

Capacity:

Drinking Water 200 l/h

Drinking Water Treatment Plant Ultra Mini – 200 l/h

The Blue Ultra Mini is a compact mobile drinking water treatment unit ideal for use in a wide range of environments and treats fresh water sources such as rivers, lakes, rain water and well water.

The BLUE ULTRA MINI drinking water treatment unit operates without chemicals:

- the fresh/feed water is treated by stages of filters including ultrafiltration the removal of solid particles.
- the water is sterilized by ultraviolet (UV) radiation with no chemicals substances pouring. UV treatment doesn't change water chemistry.

The BLUE ULTRA MINI unit is user friendly and has eliminated chemical use without compromising performance.

The Unit might be equipped by:

- fuel generator
- a battery and solar panel to work anywhere , anytime

These feature make the unit ideal for remote or hard-to-get-to locations.

The water treatment unit and all accessories are packed together ready for immediate road, air &/or sea transport;

BLUE ULTRA MINI units are delivered "ready to start";

Once on the ground components can be easily disconnected for easy handling by one or two people; Accessories are located in a box, which it can be put on the skid or transported by hand.

The Blue Ultra Mini is supplied ready to use and treated water is available immediately or it can be sent to storage tank .

Water Treatment Plant BLUE ULTRA MINI 200 l/day

Perù



N. 1 skid with Drinking Water Treatment with accessories located in a wooden-box

Drinking Water Treatment Plant on Skid (Food & Technical use)

Tengiz - Kazakhstan

Location:

Tengiz - Kazakhstan

Client:

Oil & Gas Italian General Contractor

Project type:

Turnkey project for the design, construction, installation and commissioning of 2(two) lines of drinking treatment plant on skid.

Water treatment plants:

Two(2) Treatment lines complete with pumping station mounted on skid.

Raw water sources:

Water coming from Truck-Tank

Treated water quality:

Water for drinking/food use and Water for Technical use;

Capacity:

Water for Food use : 100 mc/h

Water for Technical use: 2,4 mc/h

Water Reserve : 13 mc/h

Drinking Water Treatment Plant for Food and Technical use coming from Tank

This Drinking Water Treatment Plant consists of 2(two) parallel treatment lines for water for Food use, sized for treat 100 mc/h (one of which is a reserve) and a treatment line for water for Technical use, sized for treat 2,4 mc/h

The 2(two) lines are powered by a Pumping Unit capable of guaranteeing the flow rates described above and of providing a head of 60 m.

The 2(two) treatment lines for Water for Food use are composed as follows:

- n. 1 self-cleaning filter for the removal of suspended solids
- n. 1 UV sterilizer for final disinfection of water from any bacterial load for food use

The treatment line for Water for Technical use is composed as follows:

- n. 1 cartridge filter
- n. 1 softener for reducing hardness (to preserve the heating system).

The plants are made on special skid to facilitate installation in the field, in particular:

- n. 1 skid for Technical water filter, softener and 2(two) pumping station;
- n. 1 skid for Recirculators, Chlororesiduometer and pumping station;
- n. 1 skid for Pumping Group predisposed with n. 3 delivery lines

Drinking Water Treatment Plant on Skid (Food & Technical use)

Tengiz - Kazakhstan



Two(2) Treatment lines complete with pumping station mounted on skid.



Modular Drinking Water Units for UN fields

Field Missions worldwide



Location:

Field Missions worldwide

Client:

UN Department of Field Services (DFS) through the UN Procurement Division (UNPD).

Project type:

Five (5) year of supply contract and ten (10) year After Sales support contract

Water treatment plants:

Modular drinking water treatment systems consisting of:

- Module 1: for non saline water
- Module 2-SW: for sea water pretreated in Module 1
- Module 2-BW: for brackish water

Raw water source:

Various, e.g. ground water, rivers, lakes and sea water.

Treated water quality:

Drinking water

Capacity:

Module 1: 5 m3/hour
Module 2-SW: 2.5 m3/hour
Module 2-BW: 2.5 m3/hour

Idro supplies UN Field Missions with Modular Drinking Water Systems which are very easy to transport to site, ready for use.

At the heart of the supply are three kind of mobile units which produce drinking water, conforming to the internationally recognized WHO Drinking Water Guidelines, from conventional and non conventional water sources. The modules are as follows:

Module 1 is a stand-alone unit treating non saline water;

Module 2-SW connects to Module 1 creating a system treating sea water or brackish water with high salinity and/or turbidity;

Module 2-BW is a stand-alone unit for limpid brackish water (TDS <10,000).

The three modules are supplied with a custom designed trailer and come with a wide range of accessories and optional items such as water quality testing instruments, raw and treated water tanks and extra lengths of flexible piping.

In order to ensure the sustainability of the project, Idro also guaranteed spare parts, consumables, training and technical support for ten years.

Our technical support to UN Field Missions is ongoing and Idro works closely with head offices and field offices to meet specific needs in areas such as Sudan, Darfur, the Democratic Republic of the Congo, Somalia, Iraq, Haiti, Western Sahara, Mali; Afghanistan and the Ivory Coast

Modular Drinking Water Units for UN fields

Field Missions worldwide



*Modular drinking water treatment systems for
UN Missions*



UNICEF Emergency Water Treatment Units

Worldwide

Location:

Worldwide

Client:

UNICEF Supply Division, Copenhagen, Denmark

Project type:

Two (2) year renewable Long Term Arrangement (LTA) for Emergency Assistance and for regular UNICEF programmes.

Water treatment plant:

Mobile drinking water plant.

Raw water:

Fresh and brackish water

Treated water quality:

Drinking water

Capacity:

5 m³/hour (depending on the quality of the raw water).

People served:

5000 people per day

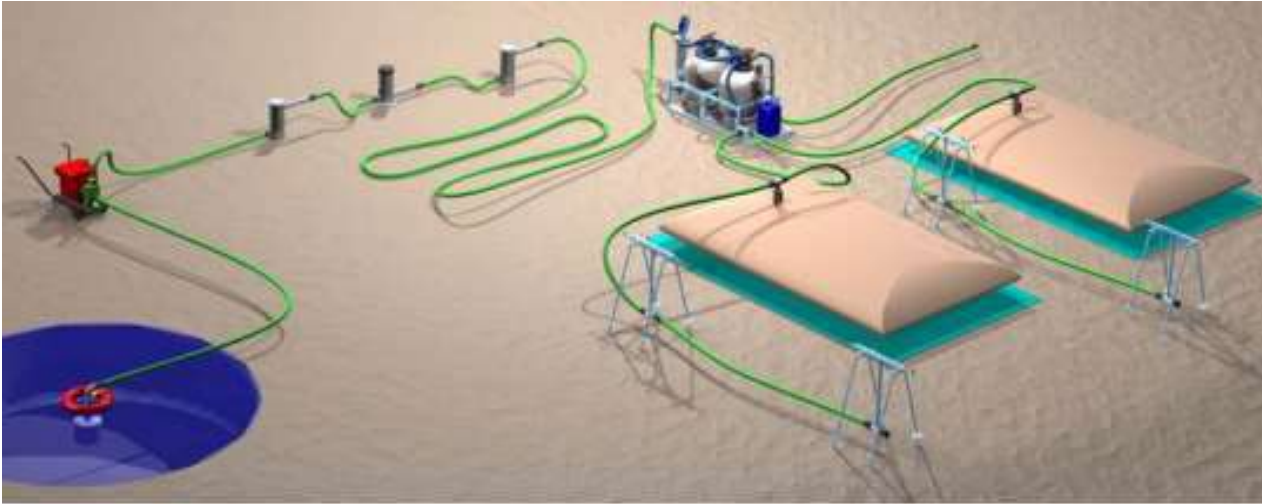
In the water sector UNICEF is one of the world's leading emergency relief agencies working to supply water treatment plants and water related equipment as quickly as possible to people without access to safe drinking water and sanitation.

Aiding UNICEF in this effort, Idro maintains a stock of EURO TWINS mobile water treatment units in our warehouse in the north of Italy and is able to deliver them to any Italian air or sea port within 48 hours of receiving a request from UNICEF.

Idro's in house logistics department ensures that goods are packed to international transport standards and works closely with UNICEF and their chosen freight forwarders to see that the goods are safely delivered on site asap. The EURO TWINS water treatment units include a diesel or petrol driven pump, all pipes, connections and multilingual instruction manuals. The units are also available with a wide range of accessories including trailers, pillow tanks (water bladders), tap stations, sedimentation units and drinking water jerry cans. Consisting primarily of a sand and an active carbon filter, these WTPs are designed to be easily transported to the raw water source, quickly set up, run for as long as required then moved to another site or safely returned to storage.

UNICEF Emergency Water Treatment Units

Worldwide



Mobile drinking water plant 5m³/h



“Lamella twins” for the Red Cross – Drinking water

Worldwide

Location:

Worldwide

Client:

The Italian Red Cross

Project type:

Supply of five (5) mobile drinking water treatment plants.

Water treatment plant:

LAMELLA TWINS” including flocculation, rapid sedimentation, slow sedimentation with a lamella settler, sand filtration, activated carbon filtration and chlorination treatment stages.

Treated water quality:

Drinking water

Capacity:

Production of 3-4 m³/hr of drinking water

People served:

5000 people per day

The Idro “LAMELLA TWINS” is a drinking water treatment plant specifically devised to treat elevated levels of turbidity up to 500 NTU (Nephelometric Turbidity Units).

The “LAMELLA TWINS” unit includes a water intake system able to draw from conventional or non conventional water sources such as rivers, lakes, shallow wells, reservoirs, harvested rainwater and groundwater and is designed to produce 3-4 m³/hour of safe drinking water conforming to W.H.O. guidelines. It is ideal for regions where the rainy season bring lots of water but stirs up rivers and dams etc making the water very turbid (cloudy or muddy).

Once it is in the system, the water passes through the following treatment stages: flocculation, rapid sedimentation, slow sedimentation with a lamella settler, sand filtration, activated carbon filtration, chlorination and storage. All the components required for the these treatment stages, and the plant operation in general, are

included in a compact, trailer mounted system designed to be easily transported to

different locations where safe drinking water is scarce or nonexistent. In addition

the unit is equipped with its own generator so it can run autonomously.

These Idro LAMELLA TWINS are at the service of the Italian Red Cross, part of

the International Red Cross and Red Crescent Societies

UNICEF Emergency Water Treatment Units

Worldwide



Mobile drinking water plant 5m³/h



Reverse Osmosis Mobile Water Treatment plant – COMBI TRAILER SW

Dublin - Ireland

Location:

Dublin Industrial Estate, Ireland

Client:

Inter Connect

Project type:

Turnkey project for the design, construction, installation and commissioning of one mobile water treatment plants.

Water treatment plants:

One(1) Reverse Osmosis (RO) plants producing drinking water.

Raw water source:

Sea water

Treated water quality:

Safe Drinking water as per WHO standards for human consumption

Capacity:

Flow rate 0,5 m3/day of drinking water.

Mobile Water Treatment Plant Reverse Osmosis (RO) “COMBI TRAILER SW”

Scope of mobile units proposed is the production of **safe drinking water** as per WHO standards for human consumption and general purposes, free of undesired salts, dangerous micro-organic compounds, heavy metals and other contaminants.

The design of the mobile and independent water treatment plants provides the ability to produce safe drinking water from seawater with TDS between 38,000 to 45,000 mg/l.

The system is supplied skid-mounted, completely enclosed in a “hard” metal canopy – of galvanized steel painted and the unit is mounted on a trailer (double shaft, four wheels) to allow high mobility of the system, even in rough terrain.

The design ensures a flow rate of 0,5 m3/day of drinking water according with the WHO standards.

The system is ready to use and easily transportable and come with a wide range of accessories and optional items such as water quality testing instruments, raw and treated water tanks and extra lengths of flexible piping.

Reverse Osmosis Mobile Water Treatment plant – COMBI TRAILER SW

Dublin - Ireland



Mobile drinking water plant 0,5m3/day



Mobile Drinking Water Treatment plant

Colombo - Sri Lanka

Location:

Dublin Industrial Estate, Ireland

Client:

Inter Connect

Project type:

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Mobile Drinking Water Treatment plant

Colombo - Sri Lanka



Mobile drinking water plant 50m3/day

Water Pumps Systems

- UNICEF Emergency Drainage Pump & Generator Sets
Worldwide
- Water Pump Stations for UN fields
Field Missions worldwide

UNICEF Emergency Drainage Pump & Generator Sets

Worldwide

Location:

Worldwide

Client:

UNICEF Supply Division, Copenhagen, Denmark

Project type:

Two (2) year renewable Long Term Arrangement (LTA) for Emergency Assistance and for regular UNICEF programmes.

Water treatment plant:

Submersible drainage grinder pump, and a diesel or petrol driven, air cooled generator and accessories.

Application:

Draining areas flooded with dirty, waters possibly containing large solids and suspended matter.

Raw water:

Heavily contaminated water with solids up to 50mm in diameter

Capacity:

Pump: 7m³/hr flow rate,
21.2 m TMH

Generator: KVA 7.3, kW 5.8
400V - 3 phase - 230V

UNICEF is one of the world's leading emergency relief agencies in the water sector working to supply water treatment plants and related equipment as quickly as possible to disaster affected areas where water, in all its forms, is involved.

Aiding UNICEF in this effort, Idro maintains a constant stock of heavy duty drainage pumps packaged with diesel or petrol driven generators and accessories including 30m of water delivery hose, 50m of support rope, 25m of extension cable, engine oil, generator trolley and multilingual instruction manuals.

Idro is able to deliver the pump+generator sets to any Italian air or sea port within 48 hours of receiving a request from UNICEF.

Idro's in house logistics department ensures that all equipment is packed to international transport standards and then works closely with UNICEF and their chosen freight forwarders to see that the goods are safely delivered on site asap.

Idro is proud to have carried out various consignments of these packaged pump+generator sets in the wake of the various devastating earthquakes. This equipment helps drain unwanted and stagnating water which can quickly become unhygienic and even dangerous in such disaster affected areas.

UNICEF Emergency Drainage Pump & Generator Sets

Worldwide



Submersible drainage grinder pump, and a diesel or petrol driven, air cooled generator and accessories



Water Pump Stations for UN fields

Field Missions worldwide



Location:

Field Missions worldwide

Client:

UN Department of Field Services (DFS) through the UN Procurement Division (UNPD).

Project type:

Five (5) years of supply contract and two (2) years After Sales support contract

Equipment:

A wide range of water pumps and accessories grouped as follow:

- Electric surface pumps;
- Booster pumps sets;
- Solar powered pump;
- Diesel driven pumps;
- Deep well pumps;
- Sludge pumps.

Raw water source:

Deep wells, ground, surface and sewage water.

Idro Group supplies a wide range of water pumps systems to UN field missions around the world.

Idro adds value to the products supplied by also providing customized electrical control panels, extra lengths of cable, splicing kits and other accessories.

Our technical support for mission staff is ongoing and Idro works closely with head offices and field offices to specify the right pumping solutions for their needs.

In addition, contributing to the sustainability of the project, Idro provides installation, operation and maintenance assistance as well as practical and theoretical training onsite, at our premises or in client facilities.

Promoting the use of alternative energy solutions, Idro has also developed a series of solar energy pumping kits tailored to the different field missions and delivered ready for quick installation.

Installation, operation and maintenance training is also available online and in onsite.

Through these contracts hundreds of water pumps have been delivered around the world to areas such as: Sudan, Darfur, the Democratic Republic of the Congo, Chad, Somalia, Iraq, Lebanon, East Timor, Haiti, Western Sahara and the Ivory Coast.

UNICEF Emergency Drainage Pump & Generator Sets

Worldwide



*Modular drinking water treatment systems for
UN Missions*

WASTE Water Treatment Plant in Containers

- Waste Water Treatment Plant 200 PE – work camp
Tengiz – Kazakhstan
- Waste Water Treatment Plant MBR 750 PE
Linate Airport Milan – Italy
- Waste Water Treatment Plant GREEN MBR DEN – 1000 ae
Ghana
- Waste Water Treatment Plant MBBR Technology – 64 m3/day
Gibuti
- Waste Water Treatment Plant for OIL & GAS Industry
Burlinskij - West Kazakhstan Oblast
- Waste Water Treatment Plant GREEN MBR
Addis Ababa – Ethiopia
- Waste Water Treatment Plant GREEN MBR – 9500 ie
Mozambique

Waste Water Treatment Plant 200 PE – work camp

Tengiz - Kazakhstan

Location:

Tengiz – Kazakhstan

Client:

Bonatti SPA

Project type:

Turnkey project for the design, construction, installation and commissioning of 3 Containerized MBR system Waste Water Treatment Plants.

Water treatment plant:

MBR system Civil Waste Water Treatment Plant Containerized inside 40' INSULATED Containers

Raw water:

Civil Waste Water coming from work Camp

Treated water quality:

Water for Technical use

Capacity:

Equivalent Population:	200 PE
Daily Flow Rate:	40 mc/d
Water consumption:	200 l/PE/day

Civil Waste Water Treatment Plant

The system is designed for the treatment of the civil waste water produced by a base man camp for 200 equivalent population.

To reduce to the minimum the environmental impact of the plant on its surroundings the proposed design solution, in fact, has been developed to improve the insertion of the plant in the environment, to reduce the occupying area, to improve the management of the plant, to minimize operational costs, also allowing for an eventual future extension, maintaining the same type of treatment sections.

The type of process is an active sludge treatment, integrated with biological dephosphorization, supported by MBR filtration. Such treatment system has been optimized in an engineering point of view, having maximum working stability and great capacity to adapt to the variations of quality and quantity on inlet pollutants, minimizing the volumes involved, so as to obtain a package installation.

Each complete plant is realized, preassembled, to fit inside 40' ISO containers. The containers have manholes for easy inspection and maintenance.

The tanks of the various sections of the plant are rectangular, lightweight, sound, durable and corrosion resistant. All the design is done to minimize the joints between the tanks in order to reduce leakages.

The plant is, also, designed to face difficult weather conditions because the external temperature of installation zone varies from -22°C to 40°C.

Waste Water Treatment Plant 200 PE – work camp

Tengiz - Kazakhstan



*3 MBR system Civil Waste Water Treatment Plant Containerized
In 40' insulated Containers*

Waste Water Treatment Plant 200 PE – work camp

Tengiz - Kazakhstan



*MBR system Civil Waste Water Treatment Plant Containerized
In 40' insulated Containers*

Waste Water Treatment Plant MBR 750 PE

Linate Airport Milan - Italy

Location:

Air Force Engineer department – Linate Airport Milan - Italy

Client:

Italian Building Company

Project type:

Design, construction , delivery on site, supervision and training on site at first start-up

Water treatment plant:

Biological treatment plant with phosphorous removal and Ultrafiltration on MBR technology

Raw water:

Civil Waste Water

Treated water quality:

Water to be reused

Clean effluent contains no substances dangerous to the natural environment.

Capacity:

165 m3/day

Civil Waste Water Treatment Plant MBR – 750 PE

The system is designed for the treatment of civil waste water sized for a user of 750 equivalent inhabitants, according to the specific requests and respecting the concentrations for the discharge on soil regulated by Legislative Decree 152/06, table IV.

The biological plant is designed to treat 165 m3 / day and is placed inside 2 (two) demountable containers and a technical room.

The solution has been designed to meet the space and mobility needs requested by the customer, minimizing operating costs and also allowing the possible extension of the plant with treatment sections of the same type.

The type of process is an activated sludge treatment, integrated with biological and chemical dephosphorization with filtration on MBR membranes.

This system has been optimized to ensure constant operation.

The removal of phosphorus is carried out biologically and with the addition of chemicals. MBR membranes guarantee compliance with the required discharge limits (table IV) without the use of further post treatments

Inside the technical room there is the electrical panel equipped with a PLC and the control panel that can be controlled remotely thanks to the Smart Remote Monitoring System.

Waste Water Treatment Plant MBR 750 PE

Linate Airport Milan - Italy



MBR system
Civil Waste Water Treatment Plant Containerized



Waste Water Treatment Plant GREEN MBR DEN – 815 PE

Ghana

Location:

Ghana

Client:

Italian Building company

Project type:

Turnkey project for the design, construction of biological plant housed in N. 4 ISO containers 20'

Water treatment plants:

Biological plant with denitrification and phosphorous removal

Raw water source:

Civil waste water

Treated water quality:

Water for such tasks:
irrigation, washing vehicles and/or flushing of toilets

Capacity:

Daily flowrate: 122 m3/day
Population Equivalent: 815 PE

Waste Water Treatment Plant – GREEN MBR DEN

The Green MBR DEN is a containerized waste water treatment plant designed to optimize space during transport on site and reduce site works as the plants take up little space thanks to the Membrane Bio Reactor (MBR) technology employed.

In general the treatment stage in these MBR DEN system include: pretreatment – denitrification – biological oxidation – MBR membrane filtration and disinfection of the treated water.

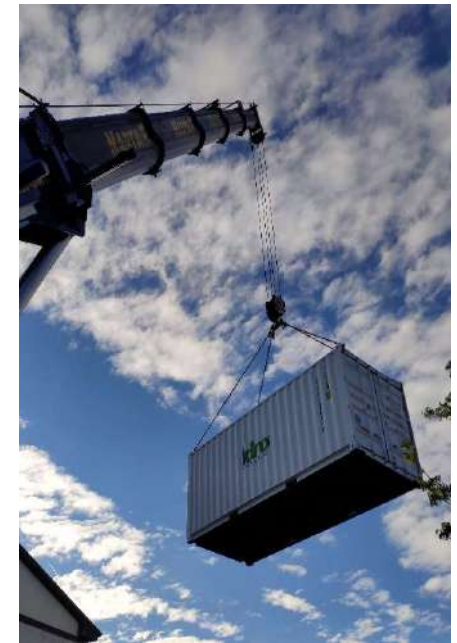
The Ultrafiltration process permits efficient filtration removing biomass and colloidal particles from the effluent and is also capable of operating with high concentrations of sludge.

MBR Technology permits a very high level of waste water purification meaning the water can be safely reused: flushing toilets, washing vehicles and irrigation green areas.

Waste Water Treatment Plant GREEN MBR DEN – 815 PE Ghana



GREEN MBR system
Civil Waste Water Treatment Plant Containerized



Waste Water Treatment Plant GREEN MBR DEN – 1000 ae

Ghana



GREEN MBR system
Civil Waste Water Treatment Plant Containerized

Waste Water Treatment Plant MBBR Technology – 64 m³/day

Gibuti

Location:

Italian Military support base in GIBUTI.

Client:

Italian Buildings company

Project type:

Engineering, coordination of assembly operation, supervision and training on site at first start-up.

Water treatment plant:

Biological plant with MBBR technology, sedimentation and lamella packs

Raw Water sources:

Civil waste water

Treated water quality:

Water for irrigation, washing vehicles and/or flushing of toilets

Capacity range:

Design for flows 64 mc/day

Waste Water Treatment Plant 64m³/day MBBR Technology

The Green MBBR Compact waste water treatment plant have been designed to treat 64 mc/day of civil water in order to guarantee the respect of the limits for discharge in surface water (D.lgs. 152/99).

Green MBBR system are ideal for further purifying water water that has passed trough a septic system and each is customezed according to the characteristics of the water to be treated.

The system include: pretreatment – biological oxidation using MBBR technology (Moving Bed Biological Reactor) – sedimentation with lamella packs and disinfection of the treated water.

At the heart of the system is a MBBR process that combines activated sludge and biofilm technologies.

Microorganisms grow on specially designed filling bodies whic are kept in suspension and constat movement. Over time excess biomass detached from the bodies and is removed

The combination of technologies employed in these plants means that they take up less space during transport and onsite and are easy to manage thus minimizing operational costs.

MBBR system permits a very high level of waste water purification. If not reused the clean effluent contains no substance dangerous to the natural environment.

Waste Water Treatment Plant MBBR Technology – 64 m³/day

Gibuti



*MBBR system
Civil Waste Water Treatment Plant Containerized*



Waste Water Treatment Plant for OIL & GAS Industry

Burlinskij - West Kazakhstan Oblast

Location:

Republic of Kazakhstan – West Kazakhstan Oblast – Burlinskij
Region – 090300 Aksai city

Client:

Investment Firms Industry , drilling & workover services

Project type:

Oil Separator Plant realized inside an N. 1 Insulated 40' High Cube
Container.

Water treatment plants:

Filtration Unit - Oil Separator Plant

Raw water source:

Rainy water with traces of oil and sand.

Treated water quality:

Reusing water

Capacity:

Flow Rate: 25 mc/h

Waste Water Treatment Plant with filtration unit & oil separator plant

The wastewater treatment plant includes:

- Section of accumulation, sand sedimentation and oil separation completed by a feeding pumps. The outlet water from this section should have less than 5 ppm of oil concentration and 5 ppm of solid.
- Section of filtration on sand and activated carbon unit placed in an insulated and heated container – included in the supply

The filtration unit is realized, preassembled, to fit inside 40' High Cube Container. The container has 4(four) doors for easy inspection and maintenance.

The plant is designed to face difficult weather conditions: from -20°C to 40°C.

To ensure that, the plant is insulated with inner sandwich panel of mineral wool 100 mm thickness and the technical room is equipped with heating-conditioning system.

The control panel is complete of a PLC unit with a Smart Monitoring System that allow to visualize the Panel of the WWTP and the working parameters directly from the browser, simply using an ID and password provided by us.

Waste Water Treatment Plant for OIL & GAS Industry

Burlinskij - West Kazakhstan Oblast



*Filtration Unit - Oil Separator Plant in container
for Rainy water with traced of oil and sand 25m3/h*



Waste Water Treatment Plant GREEN MBR

Addis Ababa – Ethiopia

Location:

Addis Ababa - Ethiopia

Client:

Myseru General Trading

Project type:

Turnkey project for the design, construction and installation of one(1) WWTP with Green MBR Technology

Water treatment plants:

Waste Water Treatment Plant with Green MBR Technology

Raw water source:

Civil water coming from five(5) stars Hotel in Addis Ababa Ethiopia

Treated water quality:

Water suitable for reuse: irrigation green areas, washing vehicles or similar reuse

Capacity:

150 mc/day

Waste Water Treatment – GREEN MBR Plant

The proposed design solution has been developed to improve the insertion of the plant in the environment, to reduce the occupying area, to improve the management of the plant, to minimize operational costs, also allowing for an possible future extension, maintaining the same type of treatment sections.

The architectonic layout of the design has been defined so as to minimize the total impact of the works.

The type of process is an active sludge treatment, integrated with biological dephosphorization, supported by MBR filtration.

Such treatment system has been optimized from an engineering point of view, having maximum working stability and great capacity to adapt to the variations of quality and quantity on inlet pollutants, minimizing the volumes involved, so as to obtain a package installation.

Waste Water Treatment Plant GREEN MBR

Addis Ababa – Ethiopia



GREEN MBR WWTP with MBR Technology

Waste Water Treatment Plant GREEN MBR – 9500 PE

Mozambique

Location:

Mozambique - Accomodation Camp for a total 9500 person

Client:

Italian Company leaders in project design and engineering in Oil&Gas and Energy Sector

Project type:

Turnkey project for the design, construction, installation and commissioning of four(4) Water Treatment plants

Water treatment plants:

N. 4 GREEN MBR WWTP with MBR Technology.

Raw water source:

Civil Waste Water for Camp Man

Treated water quality:

Reused water for Washing cars, irrigation or fire fighting

Capacity:

N. 4 WWTP of 500 mc/day each

Waste Water Treatment – GREEN MBR Plant 9500 PE

The WWTP is compact, modular and containerized, and will be implemented with the growth of the Camp.

The proposal of the N. 4 WWTP plants concerns the supply of WWTP plant with MBR technology for the treatment of civil waste water.

The proposed design solution has been developed to improve the insertion of the plant in the environment, to reduce the occupying area, to improve the management of the plant, to minimize operational costs, also allowing for an eventual future extension, maintaining the same type of treatment sections.

The architectonic layout of the design has been defined so as to minimize the total impact of the works.

The type of process is an active sludge treatment, integrated with biological dephosphatation, supported by MBR filtration. Such treatment system has been optimized in an engineering point of view, having maximum working stability and great capacity to adapt to the variations of quality and quantity on inlet pollutants, minimizing the volumes involved, so as to obtain a package installation. The water can be reused for washing cars, irrigation and fire-fighting.

Waste Water Treatment Plant GREEN MBR – 9500 ie

Mozambique



GREEN MBR WWTP with MBR Technology





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