CASE STUDY

INTEGRATION CENTRE FOR ABANDONED CHILDREN

2018

Distributor	**Eco Agua America SAC**
Project	Installation of a watertight System O)) at an orphanage in Peru
Treatment Capacity	**12,000 L/Day**
Soil Analysis	**Impermeable**
System Surface Area	**207.3 m²**
Particularities of the Site	Operated by a non-profit organization in Peru, what was needed was a wastewater treatment system that doesn't require any maintenance or have breakable parts. Treatment results available upon request.

Septic tank

Installation of the Advanced Enviro))Septic pipes

Installation of the distribution boxes

BACKGROUND

This project is the installation of a watertight System O)) at a center for children and teenagers who live on the streets or who are in high risk situations and require rehabilitation. The system was designed to passivelyt treat and recover the wastewater. The treated wastewater is recovered and held in a holding tank to be used to irrigate green spaces. With no moving parts or filtering medium to replace or brealk, the watertight System O)) was the most cost-effective, long-lasting and efficient option.

PRIMARY TREATMENT

The System O)) is preceded by a primary treatment. Raw wastewater leaving the center is collected in a septic tank with an effective volume of 18,000 L. Inside the septic tank, the wastewater separates into layers as the fats float to the top and the solids sink to the bottom of the tank.

DISTRIBUTION

The effluent of the septic tank flows by gravity into a main distribution box that evenly distributes effluent to four other distribution boxes. Each of these four distribution boxes distributes wastewater evenly into five rows of Advanced Enviro))Septic pipes. The proper functioning of the System O)) depends on a uniform distribution of wastewater between the Advanced Enviro))Septic pipe rows. This is achieved with the help of equalizers installed inside the distribution box. These equalizers have weirs that are manually adjusted by a dial during the installation. These are the only moveable parts in the entire system. Once they are set during the installation, they don't need to be adjusted again. The treated effluent of the system is recovered and collected in a holding tank to be reused.

System O®

DBO INTERNATIONAL

ADVANCED SECONDARY TREATMENT

This watertight System O)) uses one cell of 20 rows ofAdvanced Enviro))Septic (AES). The wastewater flows along the lenght of the AES rows, where it is treated by bacteria living in the AES pipes and in the filter sand during the infiltration process

RECOVERY OF TREATED WATER

Underneath the System O)), there is a watertight membrane and a network of collection pipes. All of the water that is treated by the System O)) is recuperated by this network and directed towards a pumping station where it is then pumped into a recovered water holding tank. The water in this tank can then be used for irrigation.

ECONOMIC ADVANTAGES

By using a System O)), the client saves money in the long term. A System O)) costs roughly the same as a conventional system, but has a lifespan of over 30 years. Conventional installations can start to fail after 15 years even if they are treated well. The System O)) doesn't require maintenance and there isn't any filtering medium to replace or parts that can break. A non-profit organization like this doesn't necessarily have the money to replace a filtering medium or parts that can break on mechanical treatment systems.

ENVIRONMENTAL ADVANTAGES

Purification performance well below the country's standards:

- Less than 15mg/L of BOD5 (5-day biochemical oxygen demand)
- Less than 15 mg/L of suspended solids (SS)

The treatment process of a conven-tional installation occurs in the native soil, while System O)) treats the wastewater within the system, protecting the native soil.

Gravity fed distribution box

Holding tank for treated water

Treated wastewater

Wastewater treatment plant at the end of the installation

System O

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