

TECHNOLOGY HELPS SYDNEY WATER PRODUCE GREEN ENERGY FROM STP

CASE STUDY



Strainpress® technology is playing a small but vital part in helping Sydney Water achieve its goal of making a number of improvements at its Malabar Sewage Treatment Plant.

Among these improvements is the aim to upgrade the screenings collection, transfer and handling processes, the grit handling and transfer processes, the sludge digestion and the biosolids handling and transfer systems.

One of the major benefits will be an improvement in the quality of biosolids produced.

The Malabar STP, which processes nearly half of the city's sewage through its primary treatment processes, produces about 33,000 tonnes a year of nutrient-rich biosolids - a soil conditioner/fertiliser which is used extensively to improve the fertility and structure of

Item	Value
No. of Units	Three
Capacity per unit	50 m3/h
Sludge Type	Primary; 2.5 – 4.0%DS
Typical Removal Rates	1 – 3 L/m3 sludge processed

farming soils in New South Wales.

These biosolids can produce “green energy” in the form of biogas. Biogas can be used as a fuel; for any heating purpose; and in a gas engine to convert the energy in the gas into electricity and heat. *“To increase the performance and efficiency of anaerobic digesters that process the biosolids, Hydroflux Epco supplied the Malabar STP with three HUBER Strainpress® sludge screens,”* says John Koumoukelis, a Director of Hydroflux Epco. *“These Strainpress® sludge screens have been operating for six months and are successfully removing unwanted screenings such as plastics, fine rags, cotton buds from biosolids, before its processed in the anaerobic digesters. These materials would also block mixers, heat exchangers and sludge pumps that are installed within the digesters. These unwanted materials would otherwise accumulate within the digester, leading to a reduction in performance, maintenance headaches and a reduction in the amount of gas produced It increases the operating reliability of downstream sludge treatment systems, such as thickening, disinfection, stabilisation, dewatering, drying, and reduces maintenance requirements.*



Blocked Heat Exchanger, reduced efficiency

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“One of the major benefits of Strainpress® is that it prolongs the need to put a digester offline for cleaning by many years – so the three sludge screens will make a major contribution to minimizing the maintenance costs at the Malabar STP,” he adds.

As evidence of its effectiveness, there are more than 1,500 successful installations of the HUBERStrainpress® worldwide, with installations across most major Australian water authorities.

The Strainpress® sludge screen is a pressure-fed inline system for screening any type of sludge, including highly viscous and greasy waste.

It increases the operating reliability of downstream sludge treatment systems, such as thickening, disinfection, stabilisation, dewatering, drying, and reduces maintenance requirements

HOW THE STRAINPRESS® WORKS

The Strainpress® is a horizontal pipe-shaped coarse material separator which consists of inlet and screening zone, press zone, and a discharge section.

A pump presses the liquid through the screening zone and delivers it to further process steps or utilisation. The



Blocked Digester Mixer; Reduced Efficiency

liquid is under pressure.

The coarse material, which is retained on the screen surface, is stripped off by a coaxial screw and pushed through the press zone where the material is extensively dewatered and compacted.

The compacted material is pressed through a gap around a hydraulically operated pressure cone which closes part of the pipe end and builds up counter pressure.

The system does not need any wash water as backwashing of the screen is unnecessary.

The flow is under pressure as it streams through the Strainpress®, It is therefore easily possible to integrate the Strainpress® into the existing pipeline and automatic system.

STRAINPRESS® APPLICATIONS

The STRAINPRESS® can be used in a variety of applications including primary sludge, secondary sludge, mixed sludge, septic sludge, floating sludge, grease sludge, digested sludge, production wastewater and industrial sludge, and process water.

