

CUSTOMER:

Buxted Chicken

MAIN CONTRACTOR:

ACWA Services Ltd

INDUSTRY:

Effluent Treatment



DATE OF CONTRACT AWARD:

December 1998

CONTRACT VALUE:

£563,649.00

ACWA CONTRACT NO:

3532

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INTRODUCTION:

A four stage effluent treatment plant for the Suffolk processing plant of Buxted Chicken, enabling this major producer of fresh poultry products to meet the Environmental Agency's discharge consent for river disposal of wastewater.

Ever increasing amounts of wastewater had been putting severe pressure on the existing effluent treatment plant and was being operated extremely close to its intended limit, positive action was needed to upgrade or replace this existing effluent plant.

DESCRIPTION:

The project included the demolition of old sludge drying beds to make space available for the new construction work, and the complete refurbishment of the existing dissolved air flotation (DAF) plant.

The upgrading of the effluent treatment facility included the installation of a new rotary drum screen, balance tank, chemical dosing plant and activated sludge process – together with a number of packaged pumping facilities.

In operation wastewater passes through a 5mm mesh, rotary drum screen. A package intake pumping station, comprising two electro-submersible pumps, operating duty assist then transfers screened effluent to a glass coated balance tank. With a nominal capacity of 660m³, the covered balance tank incorporates a motor-driven mixer, ultrasonic level detector, pH monitoring system and high/low level float switches.

Effluent pumped from the balance tank to the dissolved air flotation tank is dosed in-pipe, as necessary, with ferric chloride (as a coagulant) and polyelectrolyte (to assist flocculation). The DAF plant removes grease by the attachment of microscopic air bubbles to suspended solids reducing specific gravity and causing them to rise to the surface of the tank, here they form a concentration which is skimmed off by scraper blades. As it leaves the DAF plant, effluent is again dosed in-pipe with caustic soda for pH adjustment and with phosphoric acid. The activated sludge process is an annular series of tanks comprising an inner and outer tank, the annulus thus formed is the aeration zone oxygenated