CASE STUDY

Uffington

Aerated saturated vertical flow: Municipal tertiary treatment

Project
Uffington, Thames Water

Location
Uffington, Oxfordshire

Project type
Design and construct

Wastewater type
Municipal, Tertiary

Completion date
April 2012

Treatment
Aerated Saturated Vertical Flow

Need

Uffington Waste Water Treatment Works (WwTW) is operated by Thames Water and serves a population of 700-800 in a rural situation. The WwTW comprised a Primary Settlement Tank, Filter Bed and Humus Tank. Due to its age and an increasing load from the village the works required chemical coagulant dosing to improve load removal through precipitation, settlement and filtration. The site was starting to breach consents occasionally and Thames Water was aware that discharge limits for the WwTW were likely to be tightened in the next few years. This would potentially require the need to upgrade the whole site. The cost of chemical dosing was also significant on what is a relatively small site.

Average flows were 174m^3/day with a maximum of 347 m^3/day, average loadings to the works are 45kg/d BOD and 6Kg/d Ammonia. The discharge from the filter and specified consents are given in the table below.

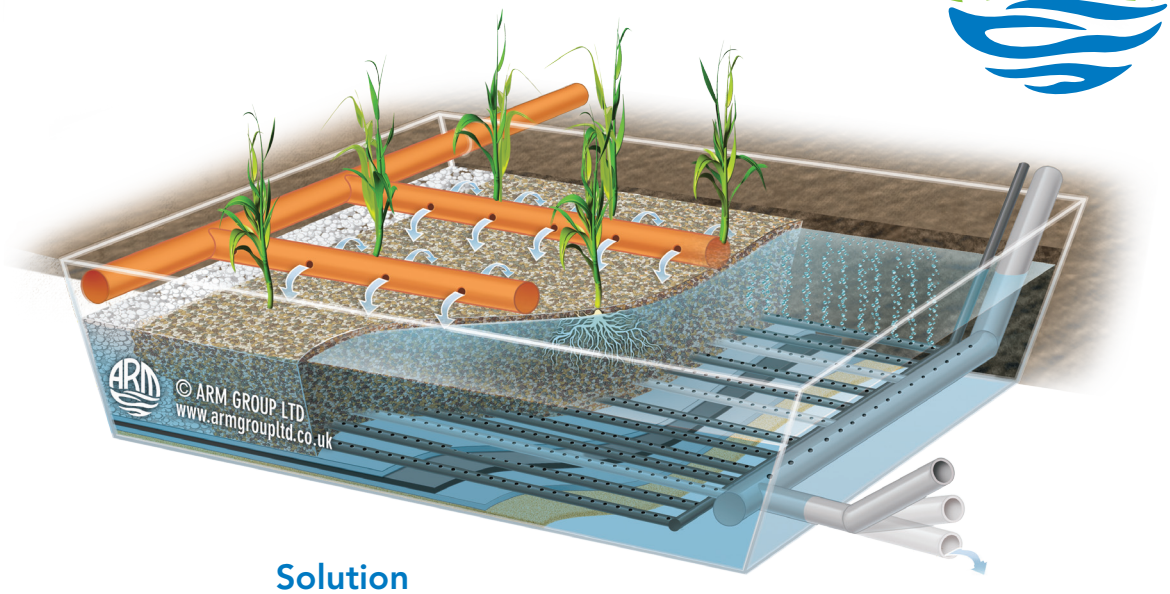
	DISCHARGE CONCENTRATION FROM HUMUS TANK	DISCHARGE CONSENT
BOD (mg/l)	18	20
Suspended solids (mg/l)	43	30
Ammonia (mg/l)	6.2	3

The BOD discharge was approaching consent whilst the solids and ammonia were in breach of consent.

natural wastewater treatment

CASE STUDY continued

Uffington



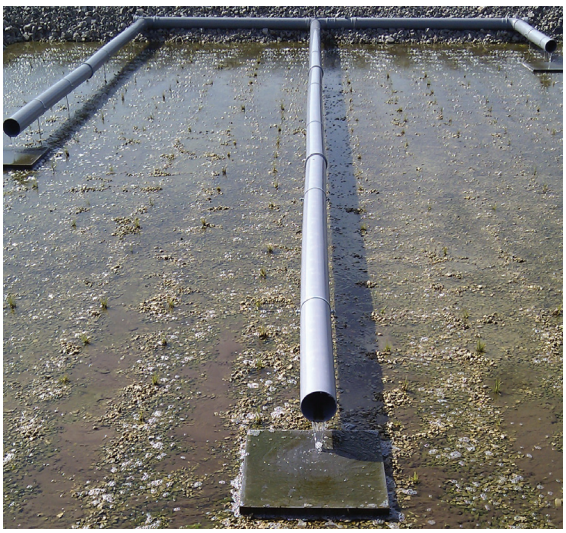
Solution

Rather than refurbish or replace the whole works ARM Ltd provided Thames Water with a long term solution through the design and installation of an Aerated Saturated Vertical Flow reed bed to operate as a tertiary final polishing system. The vertical flow orientation minimised the foot print of the required bed whilst the aeration provided enhanced microbial treatment to bring the BOD, suspended solids and ammonia site discharges comfortably into consent.

Two beds were installed, with a total footprint of 550m^2.

Benefits

The Forced Bed Aeration™ solution provided by ARM ltd saved Thames Water the capital costs of complete replacement or refurbishment of the works whilst providing them with a long term low maintenance, low carbon footprint solution which not only secures consents but blends into the rural location providing additional biodiversity and amenity.



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