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Evaluation of case-based design principles in the design of Soche wastewater treatment plant, Blantyre, Malawi

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ABSTRACT

This paper evaluates case-based design principles in the design of Soche wastewater treatment works (WWTW) in the city of Blantyre, Malawi. According to the Case Study Manager in the ED-WAVE tool, a similar case to both dry season and wet season conditions of Soche plant is Municipal Case 6 in Greece. The raw material at Municipal Case 6 in Greece is raw municipal sewage where the typical wastewater parameters are BOD_5, and TSS. The treatment target is BOD_5, and TSS reduction. The study confirmed the practical use of case-based design principles in the design of wastewater treatment systems, where after encountering a new situation; already collected decision scenarios (cases) are invoked and modified in order to arrive at a particular design alternative. What is necessary, however, is to appropriately modify the case arrived at through the Case Study Manager in order to come up with a design appropriate to the local situation taking into account technical, socio-economic and environmental aspects.

Keywords: Aerobic biological treatment; Case-based design; Grit removal; Unit treatment processes; Wastewater treatment

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