



Enhanced Wastewater Treatment Solutions

# Case Study

## Audley End House and Gardens



**Audley End House** is a beautiful Jacobean mansion located in the rural area of Saffron Walden. The house is a very popular location for visitors and is cared for by English Heritage. There are numerous facilities available on site including two cafes, a picnic area, a museum, formal Victorian gardens and holiday cottages. The house is a regular venue for exhibitions, concerts and other events.

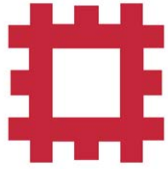
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# ENGLISH HERITAGE

ENHANCE  
REMOVE  
RECYCLE  
REDUCE  
SUSTAIN

This type of site produces **wastewater which fluctuates both in terms of strength and hydraulics**. Flows vary massively between, weekdays and weekends, as well as between winter and summer months. The onsite treatment facilities discharge into a subsidiary of the River Cam, which is **one of the most sensitive rivers in the region**.

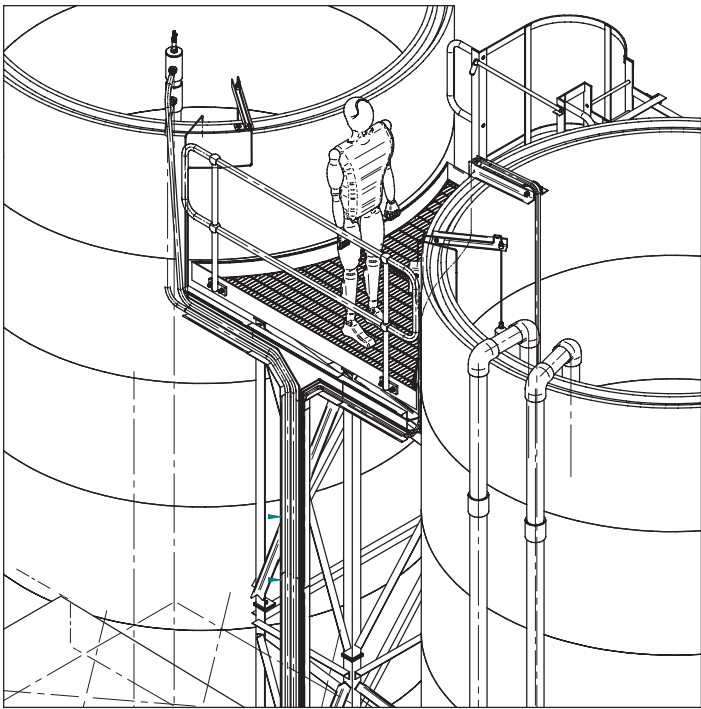
In addition to having a difficult influent to treat, the area available for the wastewater treatment system

is relatively small, meaning a treatment system offering a small footprint was essential.

The Plantwork Systems Pure SBR offered the best solution for the site, providing the flexibility of treatment required alongside a small footprint, low energy usage, odour free operation and a robust biological process capable of producing high quality effluent all year round.

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## DESIGN DATA

The Pure SBR was designed and constructed based on the following data:

Parameter	Level	Unit
Max Flow	24.3	m <sup>3</sup> / day
Max BOD	29.1	kg/day
Max Ammonia	3.08	kg/day

**Table 01:** Influent data

Parameter	Limit	Unit
BOD <sub>5</sub>	10	mg/l
NH <sub>4</sub> -N	2	mg/l
TSS	15	mg/l

**Table 02:** Discharge levels



The Pure SBR at Audley End House receives raw sewage in the Balance tank where it is kept aerated to prevent the sewage becoming septic and producing odour. Sewage arrives in the Balance tank via a pumping well (dependant on the site specific hydraulics, it is also possible to deliver flows to the tank via a gravity supply pipe).

The sewage is transferred to the Reactor in batches for biological treatment. At Audley End House, treatment is carried out using two treatment cycles per day. During periods of low flow, the control system switches operation to **Energy Saving Mode to reduce the power consumption** of the plant by more than 50%. In addition to ESM we have incorporated a Winter and Summer setting within the control program. This adjusts the equipment being used to perform treatment, as average flows reduce by up to 95% in the winter time.

Remote access enables full control of the plant from off site, and flow/energy data is continually logged via the server PC mounted in the Control Panel to enable plant optimisation. Should there be any issues with the plant, alarm codes are sent directly to the operator via e-mail (even in cases of power cuts).

**To find out more about Plantwork Systems products and processes, please visit our website or call us.**

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