THE CLIENT
Sharp’s Brewery was founded in 1994 in Rock, Cornwall when enterprising brewer Bill Sharp set out on a mission: to make exceptional quality beer on the North Cornish Coast. With a small microbrew plant and an ambition to brew 500 pints per week to pay the mortgage, Sharp’s beer was born.

THE BACKGROUND
In order to expand production capacity, and reduce the impact on the environment, the Sharp’s brewery invested in an AECOMIX™-UASB wastewater treatment plant; becoming the first brewery in the South West of the United Kingdom to use this form of technology. Nijhuis was appointed as principal contractor. The system has been designed to treat average crude influent strengths of 8,750 mg/l COD and a volume of 300 m³/day.

INSTALLATION FACTS
- **Customer:** Sharps brewery
- **Industry:** Brewery
- **Location:** Rock, Cornwall, UK
- **Flow rate:** 300 m³/d

SCOPE OF SUPPLY
- **Contract type:** Design, build, operate, maintain
- **Added value services:** Design, project management and engineering, manufacturing, delivery, installation and commissioning
- **Solution:** Filter, flocculation-flotation, anaerobic UASB treatment plant, flash aeration
- **Intelligent services:** service contract
- **Start date:** 2013
CUSTOMER BENEFITS

1. Reducing liquid waste being sent to the local water treatment plant by 80%.
2. Expansion of production capacity.
3. Lower environmental footprint.
4. Turn wastewater into biogas to provide heat and power at the site.
5. Nijhuis application knowledge.

<table>
<thead>
<tr>
<th>Influent - Flow: 300 m³/d</th>
<th>Effluent levels</th>
<th>% Removal</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.750 COD, mg/l</td>
<td>1.082 COD, mg/l</td>
<td>+/- 90%</td>
</tr>
<tr>
<td>4.900 BOD, mg/L</td>
<td>379 BOD, mg/L</td>
<td>+/- 90%</td>
</tr>
<tr>
<td>550 TSS, mg/l</td>
<td>500 TSS, mg/l</td>
<td>+/- 10%</td>
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</tbody>
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1.353 m³ biogas per day

SOLUTION

The wastewater from the brewery undergoes a four stage treatment process, started with a curved screen, type NZB, to recover spent grains. The next technology, flocculation-flotation (DAF), provides basic treatment to the wastewater when the AECOMIX™-UASB is taken off line for routine maintenance. Additionally, suspended solids are removed before the AECOMIX™-UASB in order to improve performance and minimise risk of problems due to solids build up in the UASB.

The AECOMIX™-UASB uses anaerobic processes whilst forming a blanket of granular sludge which suspends in the tank. The wastewater flows up through the blanket and is processed by the anaerobic microorganisms. Biogas with a high concentration of methane is produced as a by-product. A flash aeration is installed to remove excess H₂S gas prior to discharge to the sewer.