Integrated Systems

Monitoring of Municipal Wastewater Treatment





Objective
Process optimisation & environmental compliance

Parameters

- Ammonium
- Nitrate
- Ortho-Phosphate and Total Phosphorus
- pH
- Suspended Solids

Problem

In July 2021 heavy rainfall and flash floods completely destroyed the machinery, pumps, and electrical installations of a wastewater treatment plant in Germany. Some of the buildings and basins were so badly damaged that construction of new buildings had to be considered. The operator worked hard to get the biological treatment restored and urgently needed new instrumentation to monitor and optimise the treatment process.

Solution

The Hach® inhouse engineering team quickly designed a turnkey monitoring solution for the outlet of the biological treatment stage and the effluent of the plant. A 2 m x 4 m (WxD) weather and corrosion resistant AnaShell analytical shelter was chosen to provide sufficient space for sample filtration units, SC controllers, analysers and probes. Before delivery the entire shelter and its components underwent a factory acceptance test (FAT) for instant and sustainable operational reliability on site.

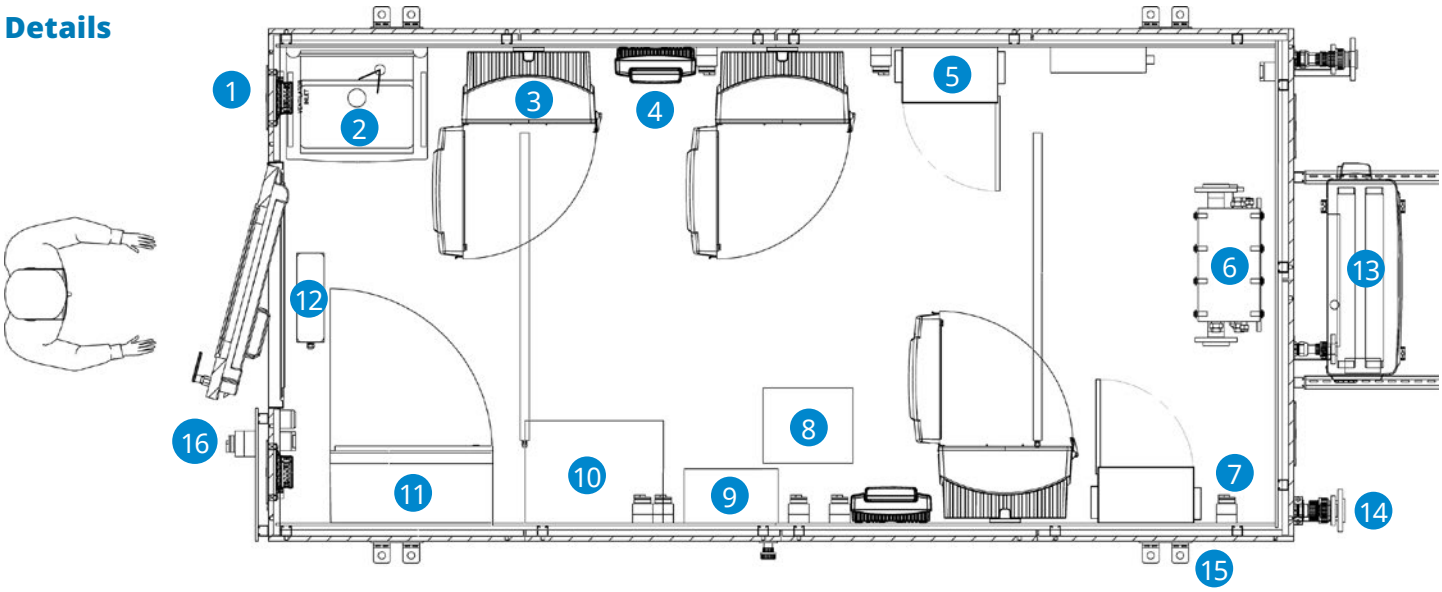
Benefits

The protected environment of the analytical shelter creates **stable, laboratory-like conditions** for the instruments to achieve high accuracy and uptime.

At a time when building materials and construction workers were scarce and expensive, the customer was able to have a new monitoring building:

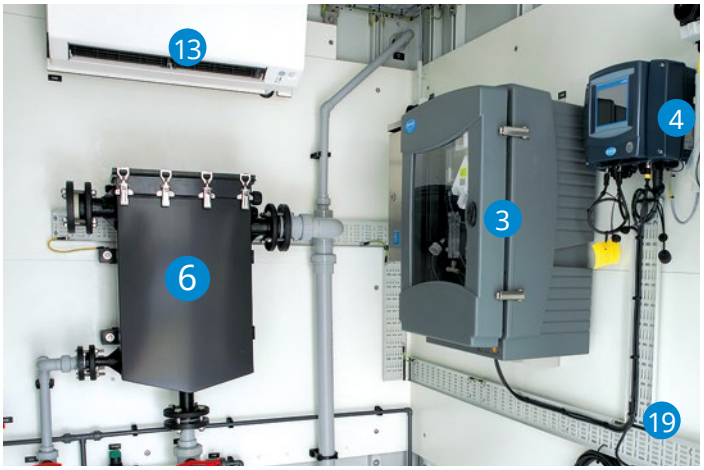
- at a **fixed cost**,
- in a very **short time**,
- **without added strain** on internal resources.

Details





1 Ventilation inlet
2 Sink for hand hygiene and cleaning of equipment
3 Analyser Ammonium (2 pcs), Phosphate
4 SC Controller (2 pcs)
5 Filtrax sample filtration unit (2 pcs)
6 Sample vessel with sensors
7 Individual maintenance switch per instrument
8 Flow unit with Nitrate sensor
9 Sigmatax sample preconditioning system
10 Analyser Total Phosphorus
11 Power distribution panel
12 Emergency light
13 Air conditioning unit
14 Sample inlet / outlet flanges, protected by stainless steel mounting brackets





15 Lifting / mounting brackets
16 Main power switch
17 Equipment grounding
18 Signal junction box
19 Durable chemical resistant HPL mounting plates and modular mounting profiles
20 Lightning protection