

# HUBER CarbonWin® System

*An Innovative Alternative to Primary Clarifiers*

Name \_\_\_\_\_  
Position \_\_\_\_\_  
HUBER SE



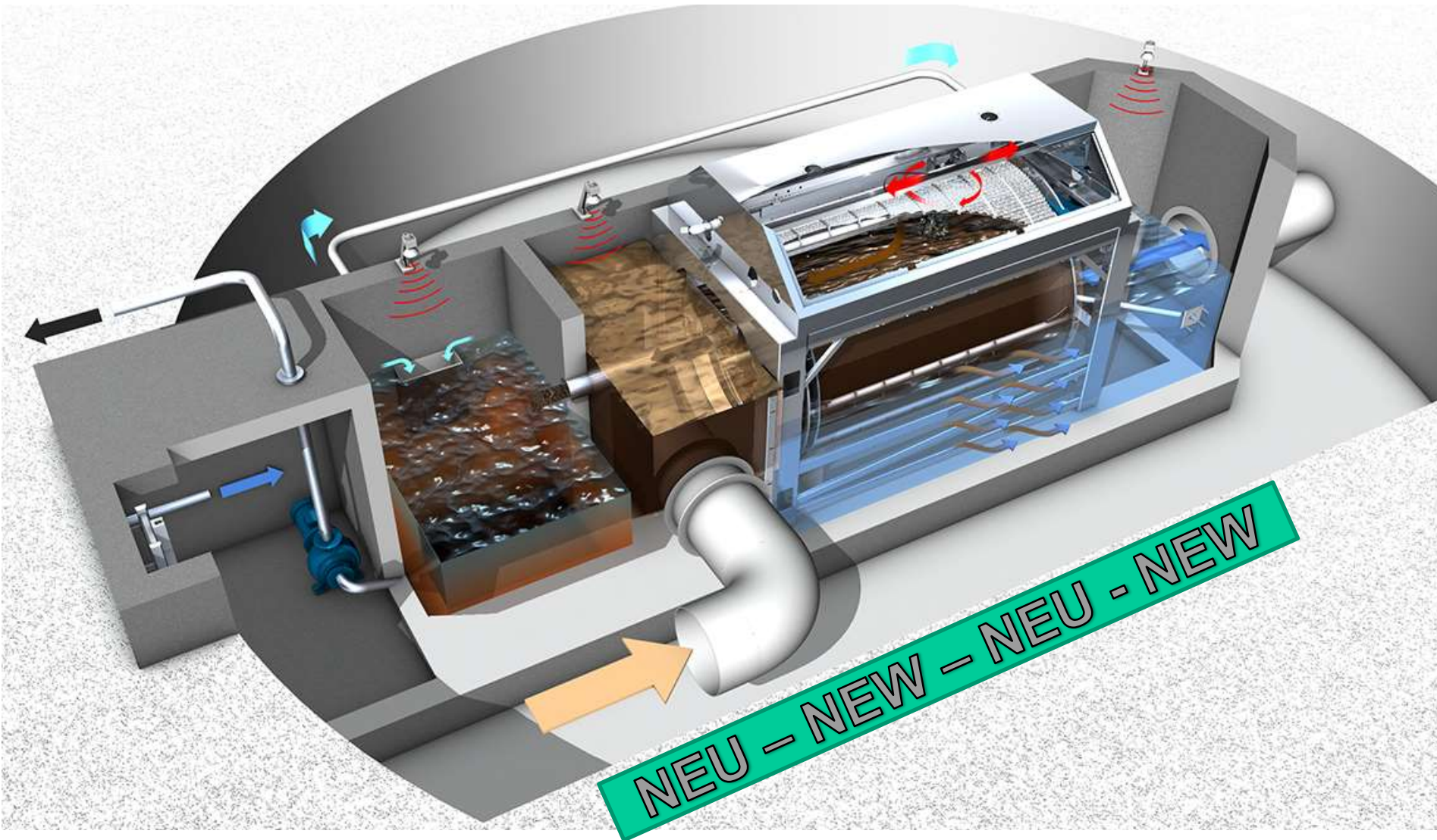
## General Agenda:

- Historical Approach
- Concept
- Technical Details with Facts & Figures
- Case Studies
- Question & Answer

## HUBER Experience in that Field:

- More than 4500 units of very fine screens installed worldwide
- Since January 1993 Fine Screening Applications available (Ro2 with 1 mm wedge wire sieve)
- Market leader for MBR Screening

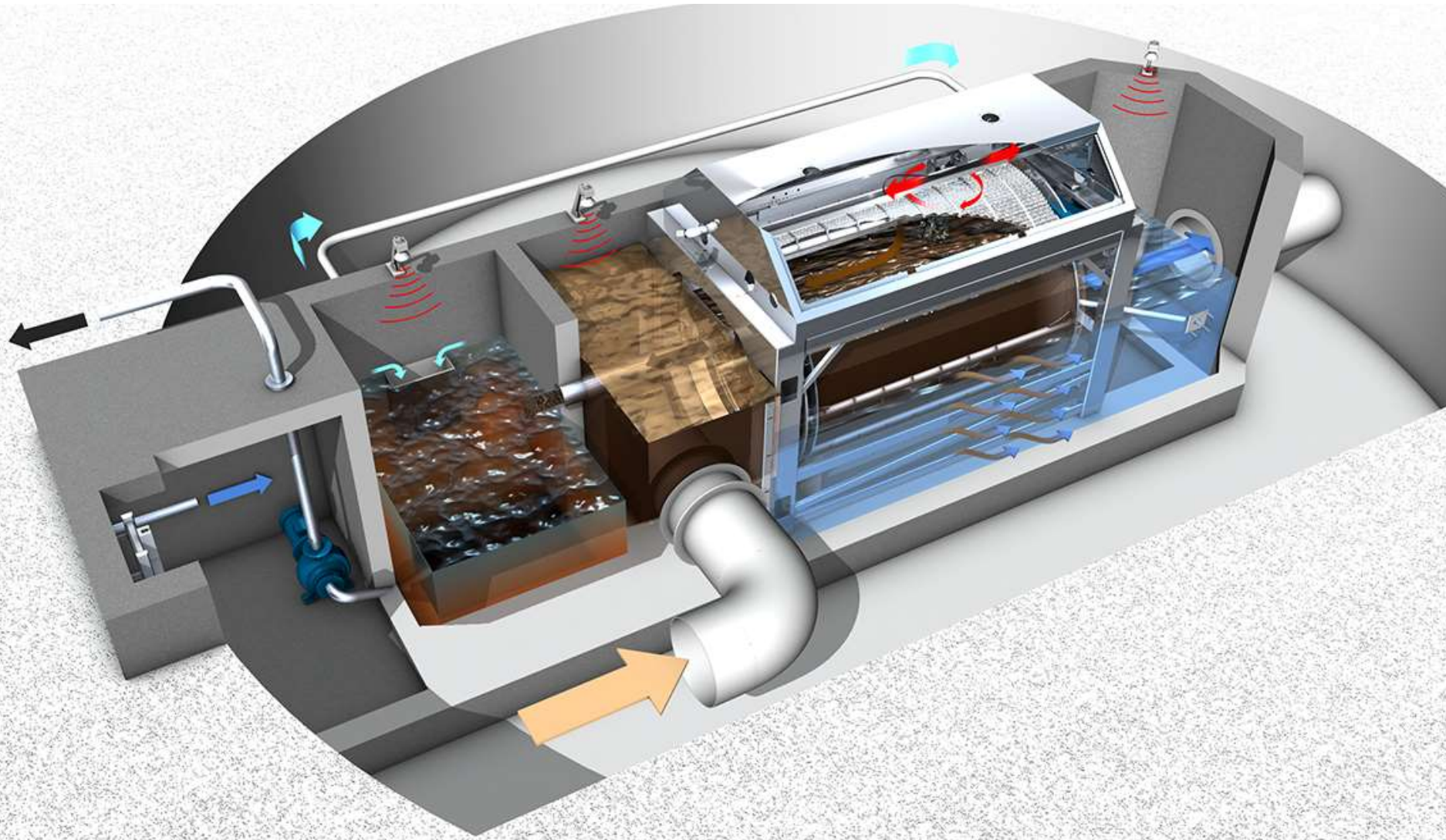




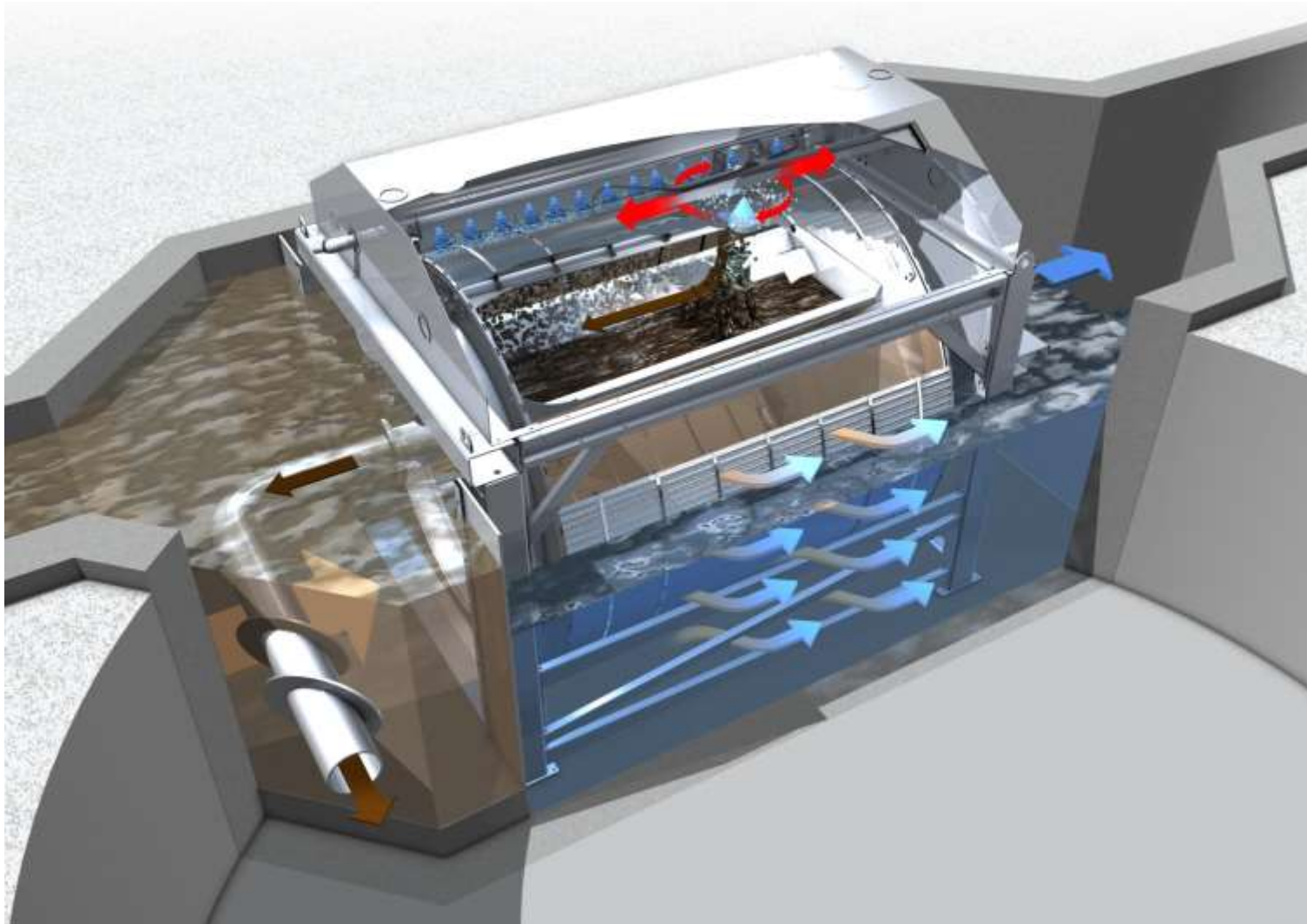


## **Why such an New Technology?**

- Population increase leading to overloaded Wastewater Treatment Plants
- Space limitation and increased cost of land
- Upgrade of WWTPs within existing boundaries
- Change from aerobic to anaerobic sludge process
- Wish for an increased gas yield for a better energy balance and management of the WWTPs



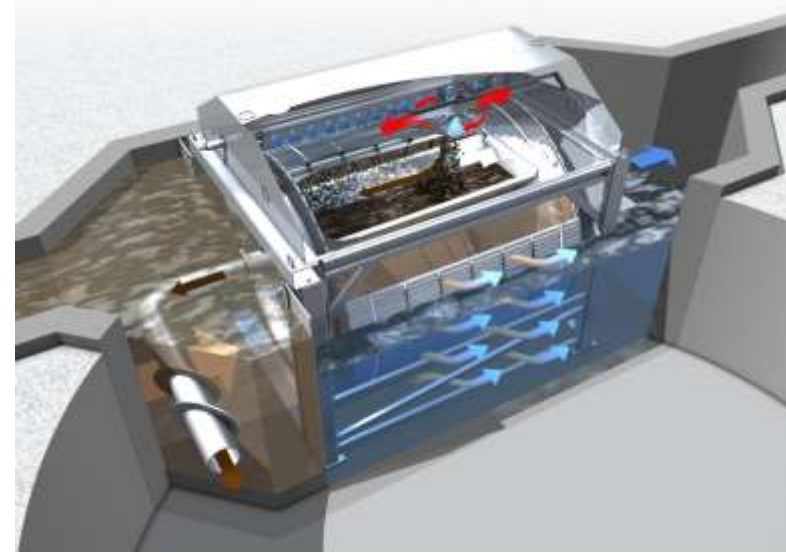
## Main Component: **HUBER Drum Screen LIQUID Mesh**





## Basic Technical Features

- Throughput up to ~280 l/s (for primary clarifier)
- Stainless Steel AISI 304 or 316
- Drum diameter 1300, 1600 and 2200
- Drum length up to 4000 mm
- Various screening options
- Channel or tank mounted

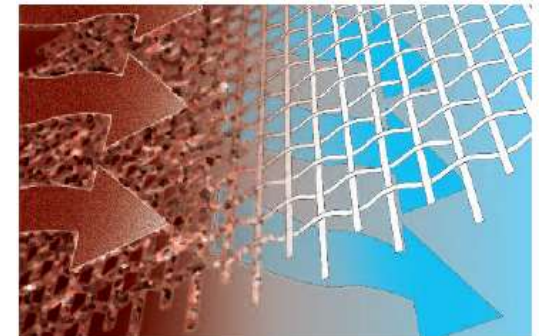
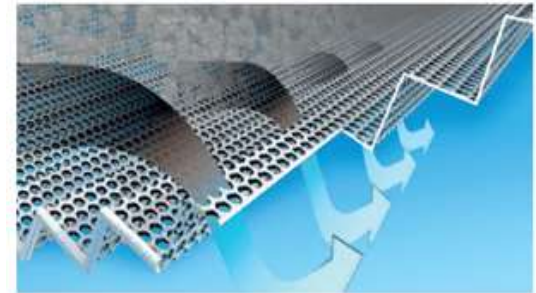
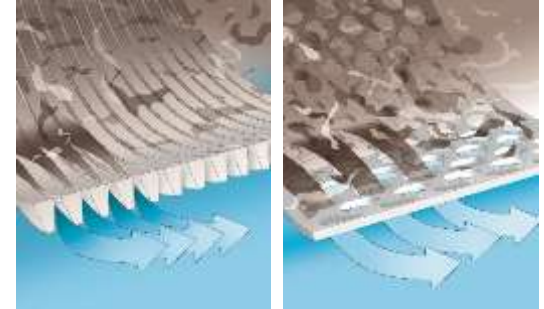




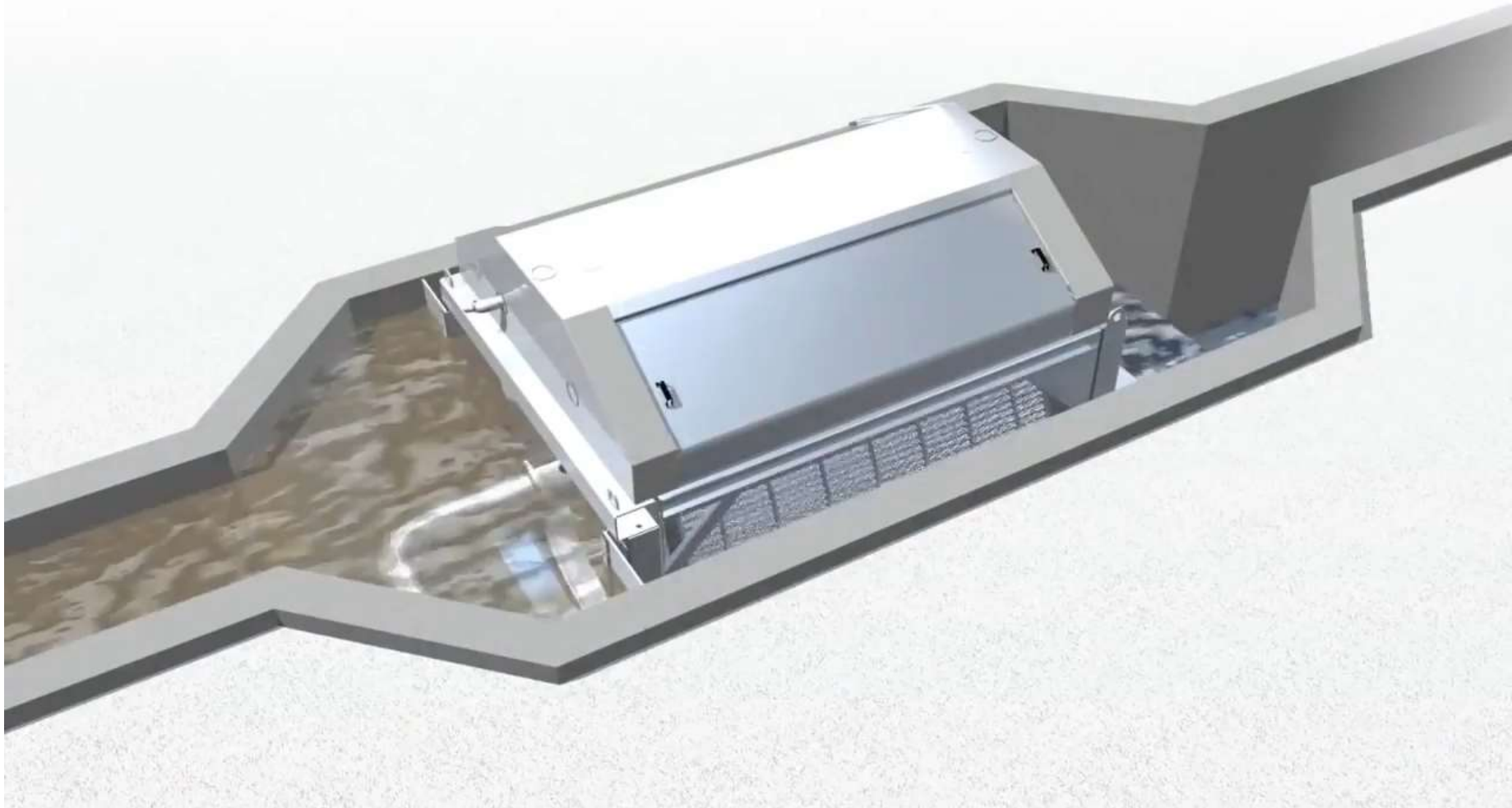
## Basic Technical Features

### Screening Options:

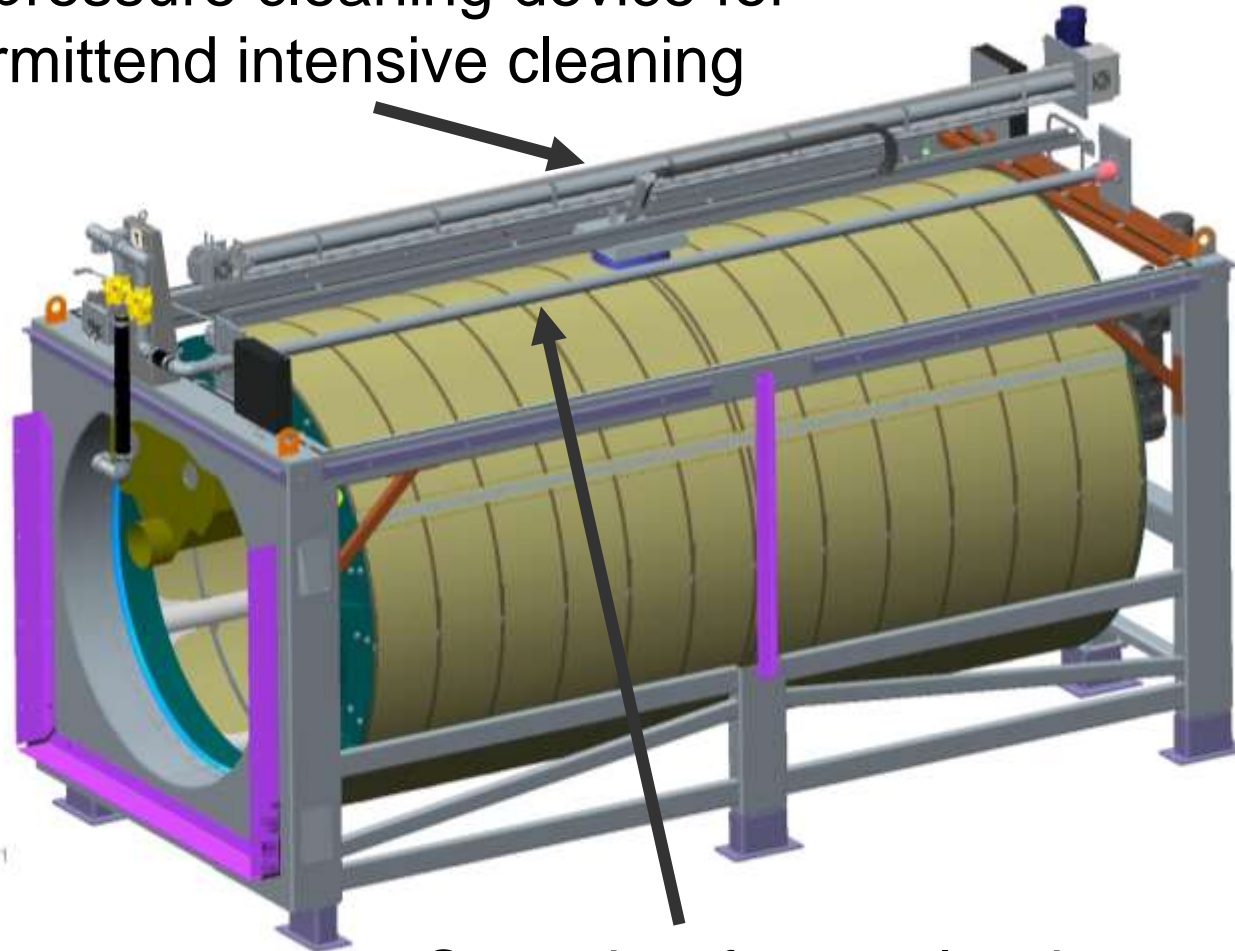
- Wedge Wire: 0.5 / 1 / 2 / 3 mm
- Perforation: 1.5 / 2 / 3 mm
- Star shape perforation: 1.0 / 1.5 / 2 mm
- Plain woven mesh: 0.14 – 1 mm



**PRIMARY CLARIFIER APPLICATION  
THE PLAIN WOVEN MESH IS  
MANDATORY**



High pressure cleaning device for  
intermittent intensive cleaning

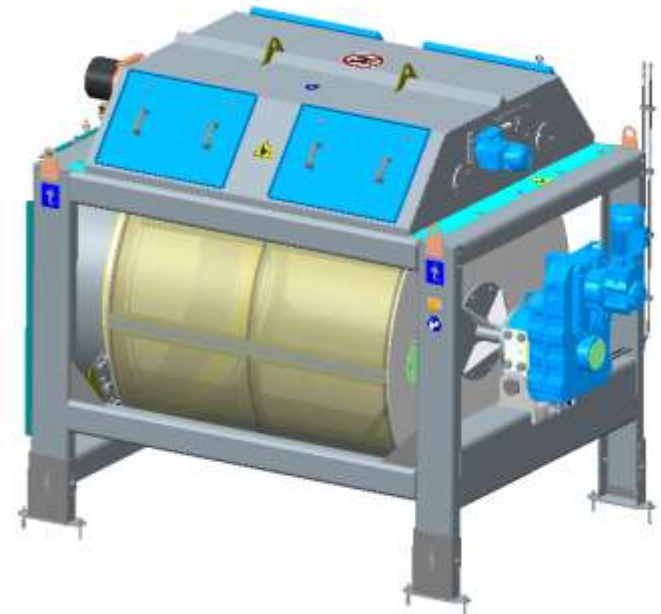
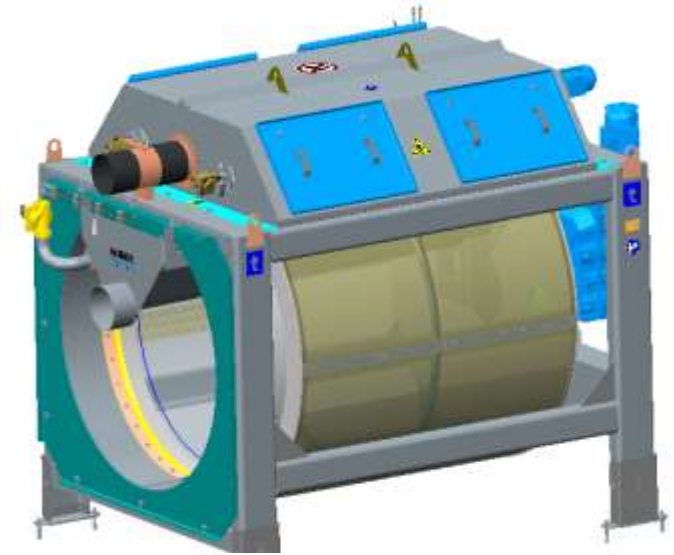


Spray bar for regular drum  
surface cleaning

Vereinl Darst auf Anfrage:DISPLAY\_ANSICHT1

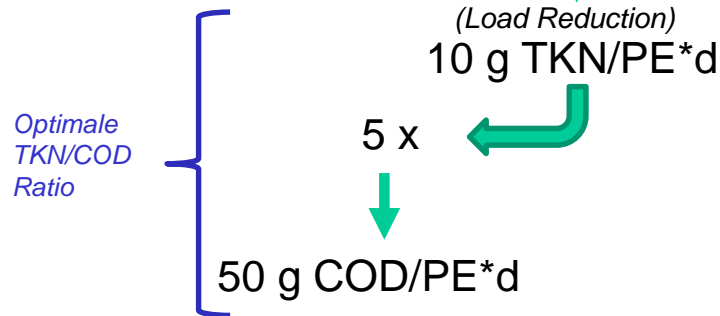


# HUBER DSL LIQUID – Technical Details





## Max. Feasible COD Reduction



For COD reduction of > 54%  $\rightarrow$  either use of polymer, smaller mesh openings or different technologies such as HuberRoDisc disc filter is necessary

**Functioning Denitrification with approx. 58 % COD removal via primary screening**

120 g COD / PE\*d – 50 g COD/E\*d  $\rightarrow$  70 g COD / PE\*d

\*11 g TKN/PE\*d -1 g removed by preliminary treatment



**Project:** *Staðfurt WWTP, Germany*

**Application:** *Replacement Primary Clarifier*

## Situation:

- **Plant Capacity** for 40,000 PE with a rain weather peak flow of 256 l/s
- **Two hydraulic streams**
- COD Inlet value for 46.000 PE, N inlet value for 27.000 PE
- Change from **aerobic to anaerobic sludge stabilization**

## Client / HUBER Approach:

- Side stream treatment of 100 l/s only
- Enabling the refurbishment of the biological streams and to operate on one stream only

**Project:** *Staßfurt WWTP, Germany*



**Civil works for flow bypassing to the Drum Screen LIQUID**

**Project:** *Staßfurt WWTP, Germany*



**Installation Phase Drum Screen LIQUID Mesh: Project Staßfurt**



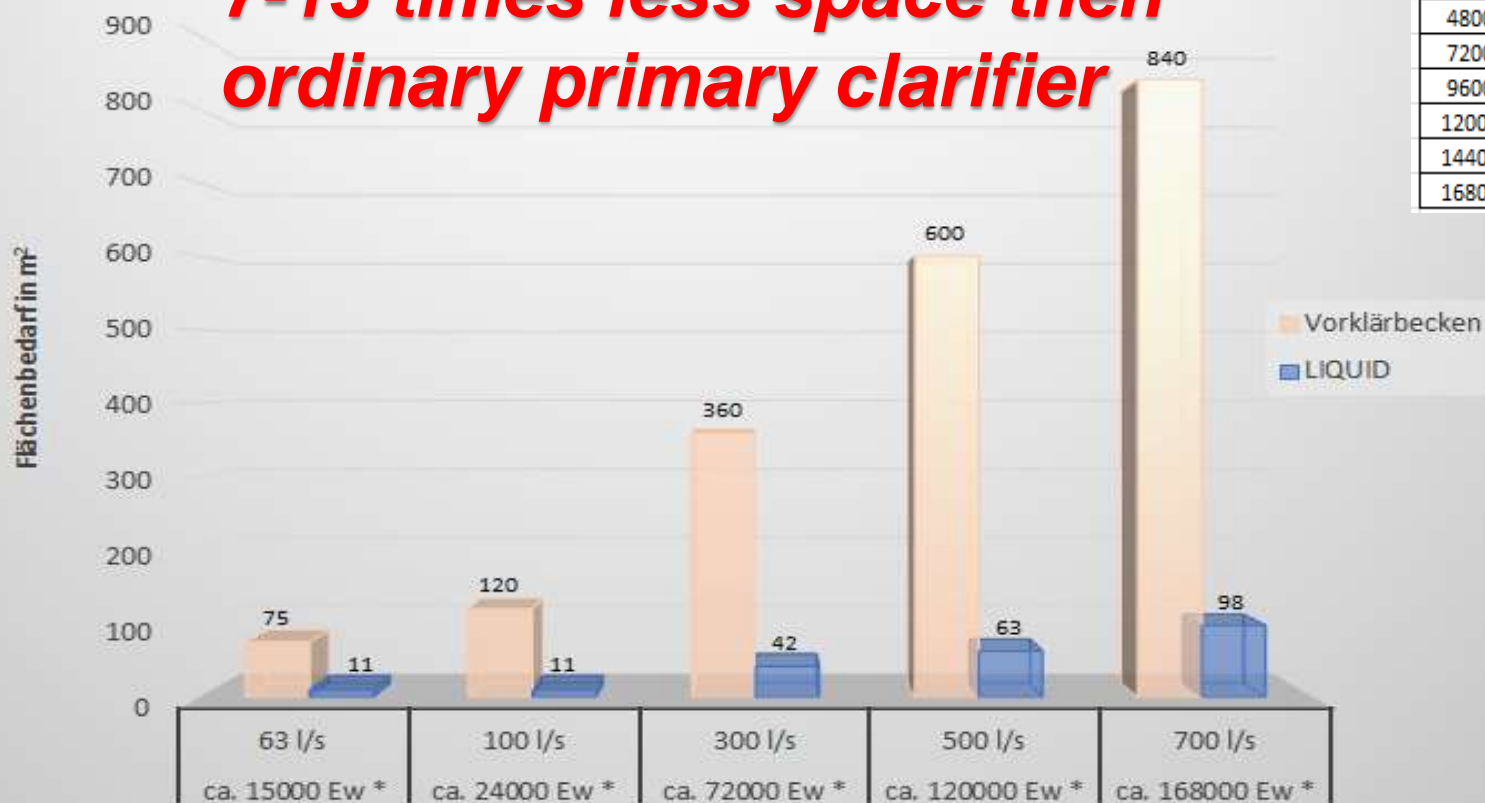
*Project: Staßfurt WWTP, Germany*



## Footprint

Oberfläche Vorklärbecken vs. Oberfläche LIQUID

**7-13 times less space than ordinary primary clarifier**



| PE     | Reduction factor |
|--------|------------------|
| 15000  | 7                |
| 24000  | 11               |
| 48000  | 10               |
| 72000  | 9                |
| 96000  | 13               |
| 120000 | 10               |
| 144000 | 10               |
| 168000 | 9                |

\* Spitzenstundenfluss bei Trockenwetter (ohne Fremdwasserzufluss und gewerbliches Abwasser)

## Operational Advantages (OPEX)

---vs. Primary Clarifier---

- **Reduction of COD / BOD** **30 - 40%**
- **Reduction of TSS** **50 - 70%**
- **Energy saving in aeration for Biology** **30 - 40%**
- **LIQUID Sludge with higher gas yield**
- Possible savings in volume for biology
- Reduced amount of excess sludge
- Better dewaterability of „Mixed Sludge“ vs pure Excess Sludge
- No more hairs & fibers in biological system



Thank you for your attention!

