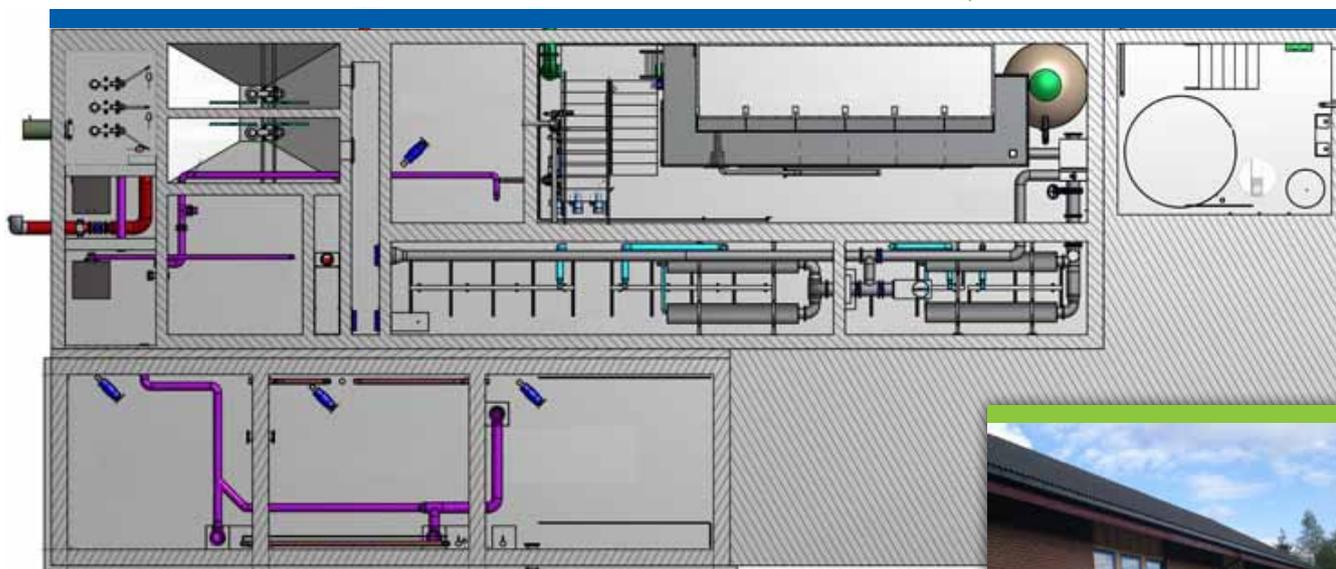


# MUNICIPAL

# HARESTUA, NORWAY

CFAS® technology

Project Name:	Harestua Wastewater Treatment Plant
Location:	Oppland County, Norway
Type of Plant:	Municipal - Retrofit
Technology Used:	Biowater CFAS®
Biomedia Used:	Biowater BWT-X®
Operational Since:	2011



## The Challenge

The Harestua STP plant was a traditional Norwegian STP with headworks (screen and sandtrap), primary settling, chemical precipitation of Phosphorous and a final clarifier. The municipality was upgrading to accommodate increased load and new requirements for BOD/COD removal. The plant had space constraints and wanted to use their existing tankage.

## The Design

Harestua decided on the Biowater CFAS® Combined Fixed Film Activated Sludge system. The CFAS® was chosen because Harestua could use their existing tankage and still meet and/or exceed treatment requirements for the plant. In addition, this process offered room for additional expansion in the future. The primary settling tanks were used for the biological CFAS® stage and the final clarifier was used for the Lamella and DAF as well as sludge storage.



### Achievements

A turnkey project was delivered. The Harestua contract was split into three different projects, M1, M2 & M3. M1 is all of the mechanical installations for the primary works, sludge dewatering and storage. The M2 project is the biological CFAS® stage and M3 is the lamella DAF with chemical precipitation of phosphorus.

PARAMETER	DESIGN LOAD - INLET		EFFLUENT REQUIREMENTS
	US	INTL.	
FLOW	0,507 MG/D	80 m <sup>3</sup> /h / 1920 m <sup>3</sup> /d	
BOD <sub>5</sub>	790 lbs/d	180 mg/l / 360 kg/d	< 25 mg/l / 70%
TP	12.9 lbs/d	9.29 mg/l	< 0,3 mg/l / 95%
TEMPERATURE	39°F	4°C	



*The basis of our CFAS® biofilm technology is the biological growth on polyethylene pieces called media or carriers. These surfaces provide a protective surface area for the biology to grow. The biofilm can handle extremely high loading conditions without any problems with clogging or shock.*

#### HEADQUARTERS

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*Biowater Technology is an innovative company with over forty years of experience in the Biological treatment field. Our focus is on saving energy and resource recovery, with water as our major resource.*