

## Calculating stormflow in time frames

*The past decade the environmental surveillance has been significantly increased and the Danish industry have evolved to match this.*

The small municipality of Kerteminde is located on the north-east part of Fyn is an area having unique historical nature, mixing countryside with protected historical forests and a protected bay area.

In 2014 Kerteminde Forsyning decided to get a professional and stable solution, which would not only register any overflow, but also register the amount of each overflow compared to period of time.

In case of a significant overflow the plant wanted real-time warnings, not only to their SCADA system, but also directly to the municipality environmental watch as well as the environmental guard protecting the entire island.

Local Plant Operations Manager, Jan Rasmussen and Carsten Kock, EL-Punkt Fyn(external consultant), explains why they chose MJK Chatter equipment to do the surveillance of the popular tourist spot.

### The municipality was exited with the results

Carsten explains: "We did have some bumps on the road in the initial phase, but experience is the best teacher when you are creating an individual system. We gathered our partners on this project; Frontmatec, the designer of the SCADA software, MJK who have delivered equipment for many, many years for us and of course ourselves. Around the meeting table we managed to find the solution that is still running smoothly and delivering real-time data day in and day out.

MJK was very active in the process, they secured that the measurements and reports from every sewer well around the municipality, would work in System 2000 from Frontmatec. This way we get real-time information of our area, and warnings when attention is needed. This really excited the officials at the municipality"

MJK R&D developed the new function "Intensity". The function enables the Chatter device to calculate an overflow amount compared to time. The SCADA system and environmental guard will receive a warning if the decided maximum is reached.

Today, the Chatter devices are logging and reporting, not just the number of stormflow but also the volume of the stormflow. The Intensity function is now included in Chatter Link.



*Operation Manager Jan Rasmussen and Carsten Kock reviews Chatter data from one of the sewer wells.*

### Perfect View

In Kerteminde the sewer wells are equipped with Expert Hydrostatic level transmitter, connected to a Chatter logging device, which logs the data with an already decided time range.

Kerteminde waste water plant decided to receive updated values every 5 minutes, if an alarm is active, and once an hour when everything is normal. Hence the Chatter devices are powered via the well, instead of the build-in battery that normally will last for years.

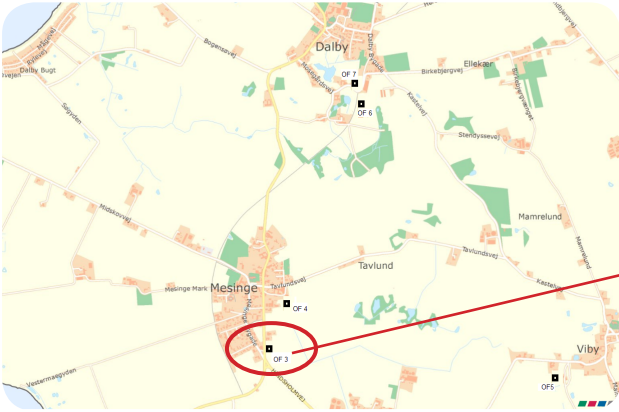
The information can stormflow or not, is read real-time on the screens in the control room of the plant. Besides the control room, Plant Operations Manager Jan Rasmussen decided to place a screen in the lunchroom. Jan explains, "When we are having lunch, we often end up talking about the state of the area. It is a lot easier to discuss any issue when you can visualize the area, and here you can see everything directly on the screen as well, and just like the control room."

### Fluctuations and Bottom Line

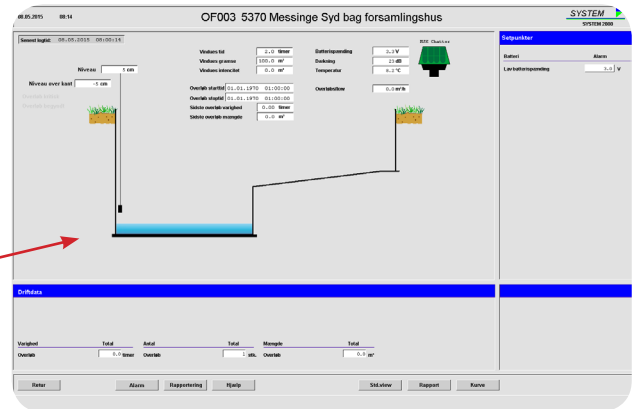
Kerteminde waste water plant has furthermore installed 6 rainAhead precision rain



*Carsten Kock showing the secured Chatter device behind the local community hall, the Chatter runs a monitoring routine every fifth minute. The Chatter device is powered via the sewer well.*



The map provides a zoomable overview of the installations throughout the municipality.



Detailed screenshot from the sewer well, the Chatter device provides the data.

(screendumps from Kertemide Forsyning SCADA, Frontmatec System 2000)

### Chatter Datalogger is used in various areas:

gauges on strategic places around the municipality. The rain gauges are connected to the Chatter devices; they add data showing if the area is having an overflow due to heavy rain fall. When heavy summer rain occurs it will often cause a short term overflow consisting mostly of rain water.

"This hasn't made running our plant either cheaper or more expensive. But consider the stability, the remote monitoring and logging, and that we are saving a lot of working hours compared to earlier. You know, we used to check the sewer wells physically and did so often to ensure that everything was working perfectly. The warnings for the environmental offices also used to be mailed manually from our control room, but now it's all automated. Today we are spending our working hours smarter, by working on our processes and maintenance instead of monitoring manually." Operations Manager Jan Rasmussen elaborates.

Logging is mandatory in Denmark in the summertime, but during the winter the plant didn't remove the Chatter devices, they all worked perfectly through the cold, moist and snowy wintertime.

Monitoring of rain flow in areas equipped with dual sewer system (rain and waste), and where overflow is experienced in case of heavy rainfall.

Detecting of groundwater entering the sewer system.

Battery powered logging and log transfer of level measurement and bearing in the nature and at borings.

Chatter communicates with several selected SCADA Systems e.g. System 2000, IGG5, IFIX and more

Storm flow logging. Activated by level-trigger or analog limit. Counts number and time of storm flows.

Contact MJK or your local dealer for more information on how Chatter will help securing the environment in your area [www.mjk.com](http://www.mjk.com)

**Kerteminde Setup**  
 Intensity is a new function in Chatter Link. The function will calculate amount in an ongoing timeframe. The signal used for the calculation is generated from a level transmitter or for example a rainAhead precision rain gauge. The timeframe is configured individually for the device and spans from 1 minute to 7.5 days. The reports are generated on a running basis. Kerteminde decided on calculating new figures every 5th minute, but the alarm is only activated in case of an overflow within the timeframe set in the configuration.  
**Equipment for one well in Kerteminde:**  
 1 pcs. Chatter incl. GSM/GPRS modem  
 1 pcs. Expert 3400 Hydrostatic Level Transmitter  
 Besides that, Kerteminde waste water plant is using information from rainAhead precision gauges.