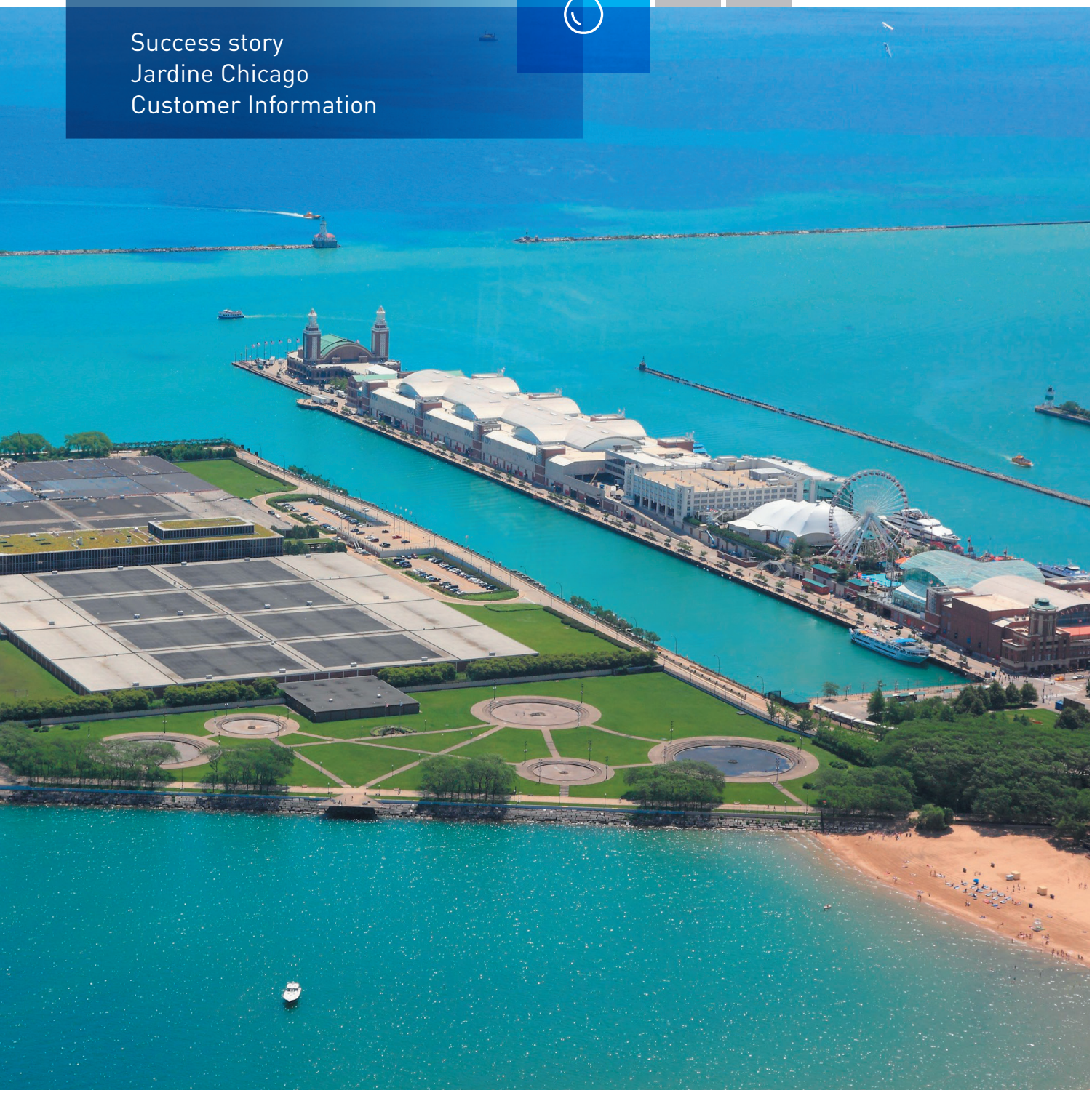
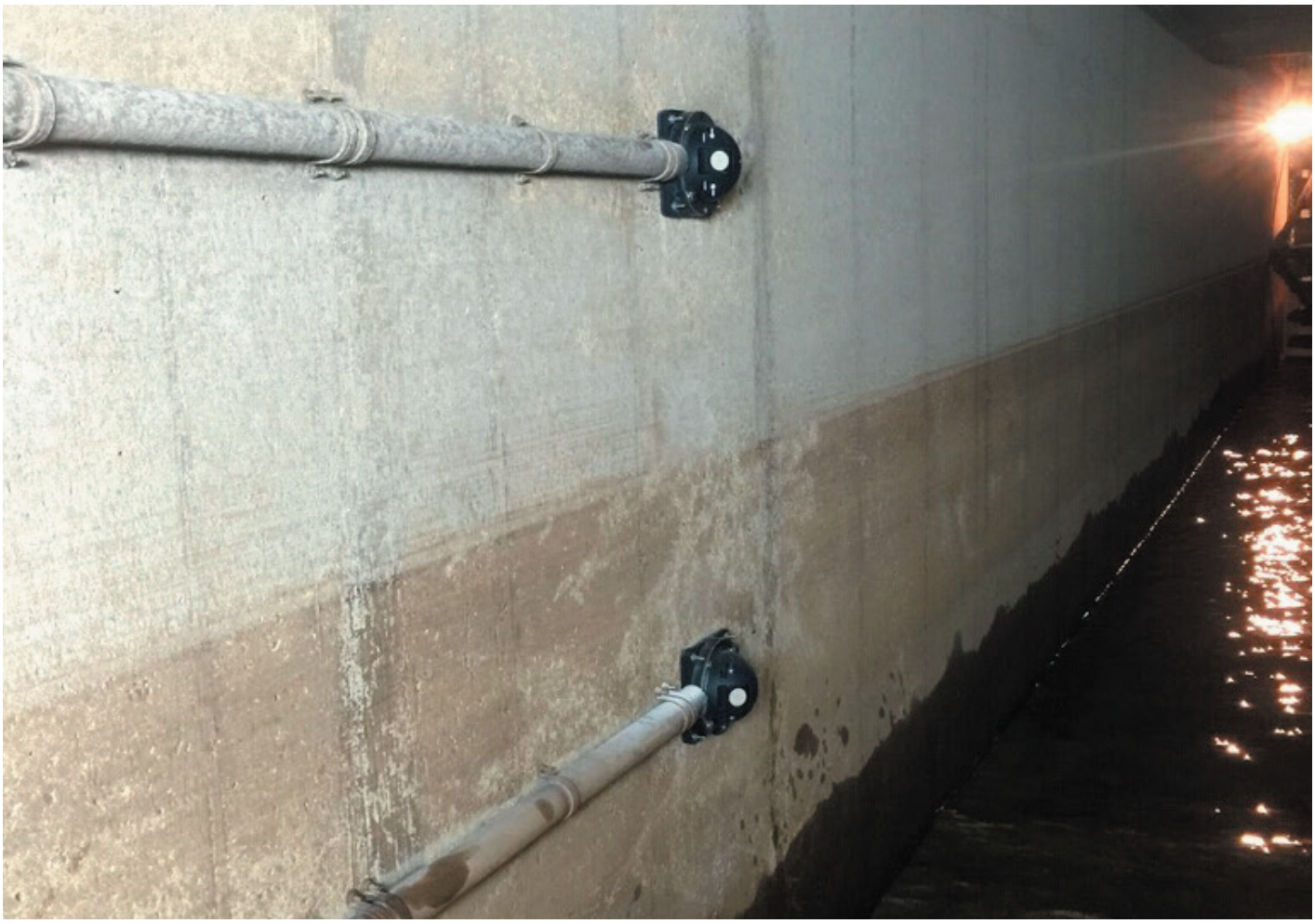
Kanalis: Optimizing Water Purification

Success story
Jardine Chicago
Customer Information



Innovative measurement solutions
for valuable resources

GWF optimizes worldwide largest gravity water filtration plant



Installation of Kanalis sensors in the Jardine water purification plant

Project Facts

- **Client:**
  City of Chicago, Illinois, USA
- **Challenge:**
  Reliable and accurate monitoring of water level and flow velocity in partially or fully filled closed conduits
- **Solution:**
  – Installation of 15 Kanalis multi-path ultrasonic flow meters
  – High-resolution Intelligent Signal Processing
- **Value:**
  Acquiring 24/7 flow data optimizes the chemical feed process and minimizes operating costs

One billion gallons a day

The Jardine Water Purification Plant is the largest capacity gravity fed water filtration plant in the world, located north of Navy Pier in Chicago, Illinois, USA. It draws raw water from two of the city's water cribs far offshore in Lake Michigan and sends nearly one billion gallons (4 million m^3) of water per day to consumers in the north and central portions of the Chicagoland area. With such a vast volume of water to purify, the chemical treatment process must be as efficient and effective as possible.

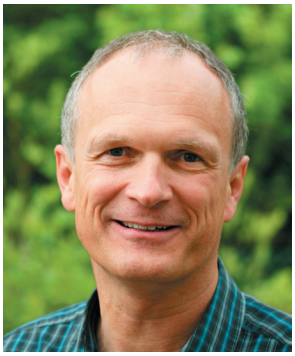
GWF has provided high-precision flow meter technology to upgrade the plant. Our experts installed and commissioned 15 time of flight systems, which are located in channels upstream of the disinfection.

The Kanalis systems control the chemical feed process, where vital additives for protection of piping systems and treatment of the drinking water are dosed.

Four Kanalis measurement transmitters

«We are proud that GWF flow meter technology will help the City of Chicago modernize their essential water infrastructure.»

Jürgen Skripalle, Senior VP, Fellow Acoustic Flow Measurement (AFM)



Dr.-Ing. Jürgen Skripalle
Senior VP, Fellow Acoustic Flow Measurement (AFM)

Kanalis System Details

Area of application	Open channels up to 20 m width
Measurement technology	Ultrasonic time of flight
Number of acoustic paths	1 to 10
Accuracy flow	Typically ± 2%, depending on number of paths

Installation of transducers inside the channel.

Making plant operation more effective

The City of Chicago trusts GWF to optimize their water filtration plant. Exact monitoring of water level and flow is essential in order to obtain full process control and efficiency.

Water levels and flow velocity profiles in the Jardine plant conduits can vary significantly. A flow meter must thus operate such that the closed conduits may be partially or fully filled and measurement accuracy is guaranteed at all times. **The Kanalis multi-path time of flight system is the ideal choice to tackle this challenge.** This system assumes no relation between level and flow and will correctly determine flow over the entire bi-directional measurement range. Due to GWF's own Intelligent Signal Processing (ISP™) Technology, the City of Chicago can expect an excellent resolution and accuracy of their measurement data.

Dr. Juergen Skripalle, Senior VP, Fellow Acoustic Flow Measurement (AFM), supervised the installation and commissioning of 15 multi-path Kanalis flow meter systems in Chicago. "*Our engineers and project partners ensured a smooth integration of our technology, enabling the Jardine plant to operate more efficiently,*" he says.

The Operators at Jardine will be able to accurately control their chemical feeds, both regulating the process and saving the plant money in usage of chemicals.

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