Focus on Solutions

Clear water for urban water features

MVV Mannheim opts for

professional solutions for perfect water

Public fountains need a lot of care and attention to keep them looking good and operating costs need to be reasonable too. The emblem of Mannheim, the water tower and its attractive water feature, are a great example of the success of the Bello Zon® chlorine dioxide systems.

The problem

MVV Mannheim, the operator of the water feature at the Mannheim water tower, was experiencing major problems with its water treatment. Over the past few years, the cleaning and disinfecting effect of hydrogen peroxide and an algicide hadn't managed to prevent algae growth in the system. Removal required an expensive process of manually adding chlorine granular, imposing tough health and safety requirements. Halfway through the season, all the water had to be replaced in an expensive, week-long interim cleaning process.

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Bello Zon® for clean water

The key data

- Water volume of 528,344 gallons
- Water area of 32,291 ft², totalling 328 ft in length
- Water circulation in the main circuit of 1,321 gpm and several fountain circuits of 550 gpm each, filter circuit of 220 gpm
- Cascades, water jet, fountain circuits up to 92 ft in height, colored fountain lighting

The partners

- MVV Energie AG
- TechnikCenter at IBA-Aqua-Pflege-Produkte GmbH
- ProMinent GmbH

The previous water treatment process

- Continuous metering of hydrogen peroxide
- Acid
- Algicide
- Manual and on-site addition of granular chlorine as required
- Sand filter for a small partial flow

The solution

In place of the previous disinfection process and to prevent the growth of algae, MVV opted to use chlorine dioxide being consistent with potable water legislation. A chlorine dioxide system Bello Zon® CDKc using the chlorite acid process was therefore installed. A chlorine-free chlorine dioxide solution is generated from a sodium chlorite solution using hydrochloric acid.

The benefits of using chlorine dioxide for automatic generation and metering, is that the operator only needs to simply replace the storage tanks of the two precursor solutions on a regular basis. Since the system is highly efficient, the hydrogen peroxide, algaecide and chlorine granulate biocides previously used can now be replaced with one single product, i.e. chlorine dioxide. The amount of chlorine dioxide that is used can be adjusted by the operator to suit the current weather conditions and therefore demand, which also saves money.

Chlorine dioxide system Bello Zon® CDKc

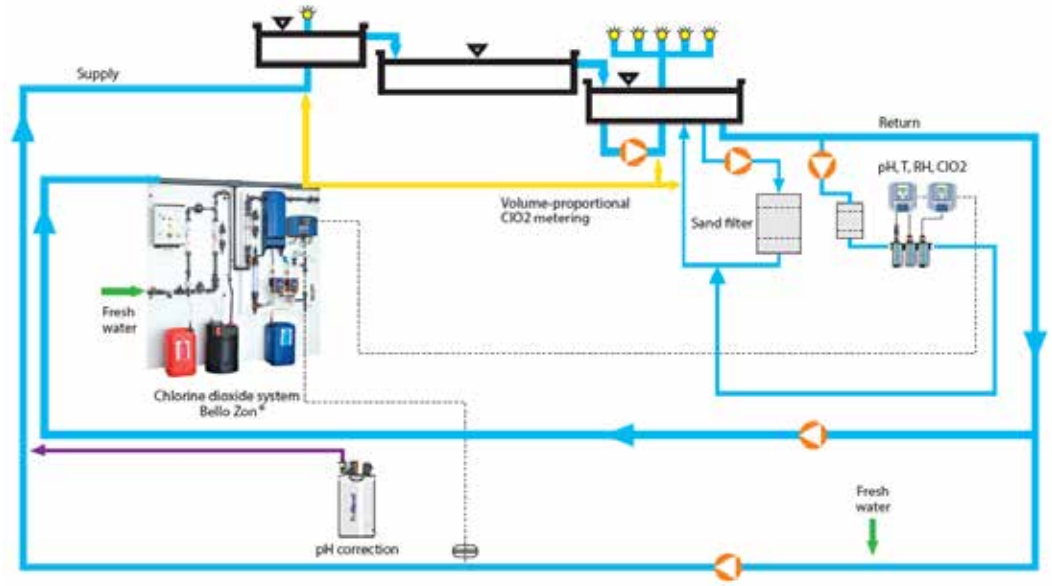

Illustration showing the entire setup

- The illustration shows the three basins with water jet, cascades, fountains and location of the Bello Zon chlorine dioxide unit

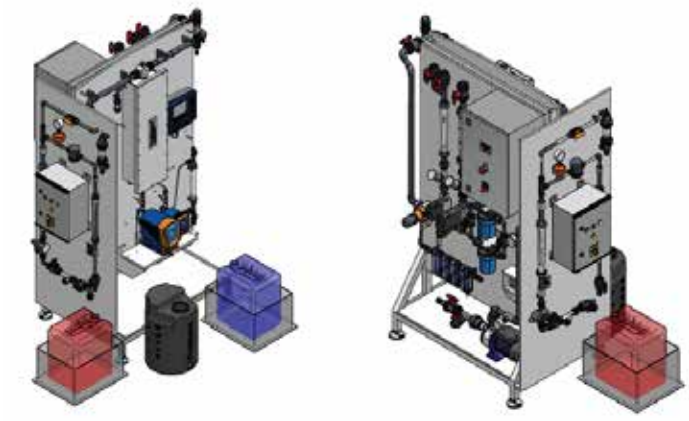

Illustration of sytem/drawing

- The system is very compact, comprising one frame with control and monitoring of addition points, making installation quick and easy. This saves the operator money and simplifies installation at the installation site.

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MVV Mannheim opts for chlorine dioxide systems Bello Zon® for clear water

The result

- Over the last few years, black or green growth was continually forming on the cascades, but it has disappeared since the introduction of Bello Zon®. Thanks to the Bello Zon® technology, the water is now much clearer and its sparkling clarity clearly distinguishes it from the fountains with conventional water treatment.
- The improved water quality is obvious to visitors too.
- Minimized consumption of chemicals - no chlorine granulate, algicide or hydrogen peroxide were used in the 2012 and 2013 seasons. This has also improved health and safety.
- Perfect quality management through integrated storage of the relevant operating parameters and measured values.
- Time and materials are saved, cutting costs.
- The investment costs are written off by the savings made in less than 3 years.
- Using Bello Zon® chlorine dioxide generally allows savings to be made on fountains with recirculation of around
- 440 gpm or more.

Customer statement

Dr. Jochen Ries, MVV Energie AG, Mannheim

"We have benefited greatly from using chlorine dioxide to treat the fountain water. The water quality is better than ever before, the amount we need to spend on maintaining the water features is greatly reduced and the costs of the investment will be written off in less than three years. The expert support provided by the TechnikCenter at IBA-Aqua-Pflege-Produkte GmbH and ProMinent GmbH also helped everything go smoothly."

The water tower is the emblem of Mannheim. Built in 1889 by the Stuttgart-based architect Gustav Halmhuber, who was also involved in building the Reichstag in Berlin. It ran until 2000 as the centerpiece of the city's central potable water supply. The water tower is 197 feet high, has a diameter of 62 feet and holds 528,344 gallons of water. A statue of Amphitrite, the wife of the god of the sea Poseidon, sits on the roof of the tower. The other decorations and figures on the small and large basins also follow this theme: Water is life and – especially for Mannheim – the basis for shipping and trade.

The water tower stands at the highest point in Friedrichsplatz. Home to the tower, garden, pools and neighboring festival hall and gallery, Friedrichsplatz is one of the most attractive Art Nouveau squares in Germany. At night, the brightly lit water features create a very special atmosphere.

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