



Headworks Inc. MS® Bar Screen – Repeat Customers are Happy Customers

Introduction

In Iowa, the Des Moines Metropolitan Wastewater Reclamation Authority (DMWRA) works to enhance the environment by recycling wastewater from 17 metro area municipalities, counties and sewer districts. The WRA serves a population of over 500,000 and treats an average of 24.7 billion gallons of wastewater every year. When the WRA decided to replace two of their climber screens, they knew that not just any cookie cutter screen would do. The facility that houses the screens had limited space available so a very specific pair of screens would have to be custom designed and installed with the utmost accuracy, otherwise failure was imminent.

In 2010, the City of Des Moines enlisted Headworks® Inc. to build three MS® Bar Screens for their CSO facility which is designed to handle stormwater and wastewater of up to 390 million gallons a day (MGD).

Process

Headworks was on its way to completing the fabrication and delivering the screens on schedule when the city concluded that it needed to change its design to plan for hundred year flood levels. By the time Headworks was informed of the change in scope, these three massive screens each measuring approximately 39 feet (11.88 meters) in length and 8.8 feet (2.68 meters) in width were already in fabrication.

Customer: Des Moines WRA
Industry: Municipal

KEY FACTS

Two MS® Bar Screens in 2010

- **Design Flow:** 5.70 m³/s (130 MGD)
- **Bar Spacing:** 12.70 mm (0.5 in)
- **Screen Size:** 12.67 m long (41.58 ft)
2.69 m wide (8.84 ft)

Three MS® Bar Screens in 2013

- **Design Flow:** 2.85 m³/s (65 MGD)
- **Bar Spacing:** 9.53 mm (0.38 in)
- **Screen Size:** 13.54 m long (44.41 ft)
1.78 m wide (5.84 ft)

Naturally, Headworks accommodated the request of the City of Des Moines and its consulting engineer, HDR, Inc., by stopping all fabrication processes and sending its finest design team immediately back to the drawing board. The result was an increase to the length of the screens by 2 feet and 9 inches.

The screens were ultimately built to 41.58 feet (12.67 meters) long and 8.84 feet wide with ½ inch bar spacing (12.70 mm) and each screen is designed to handle a maximum flow of 130 MGD (5.70 m³/s).

Design

When the DMWRA learned of the outstanding service given by Headworks on the Des Moines CSO Plant, it wasn't long until another project was awarded to our team.

The existing Wastewater Reclamation Facility (WRF) in Des Moines needed replacement of two climber screens. These massive replacement screens were designed to be 44.24 feet (13.48 m) long, 5.84 feet (1.78 m) wide, with 0.38 inch (9.53 mm) bar spacing, and withstand up to 65 MGD (2.85 m³/s) per screen. The facility had a very specific layout and needed the screens to be custom made to precise dimensions to be successful.

Results

In April 2013, the contractor, Rick Lake Construction Group, worked with Headworks on the Des Moines WRA project entrusted us with another project for the phase two stage of the WRF project, this time to replace three more climber screens for the same WRF facility. These three screens are built to 44.41 feet

(13.54 m) in length, 5.84 feet (1.78 m) in width and have 0.38 inch (9.53 mm) bar spacing. These screens will also have a maximum flow of 65 MGD (2.85 m³/s) per screen.

We are proud to say that with these three screens in place, we will have replaced all five climber type screens in the Des Moines Wastewater Reclamation Facility.

We know that we are on the right track when customers come back to our team time and time again. We look forward to working with the City of Des Moines and cities around the world for years to come. Thank you to all of our loyal customers.



One of the MS® Bar Screens installed



The screens had to be installed in pieces due to height restrictions at the facility