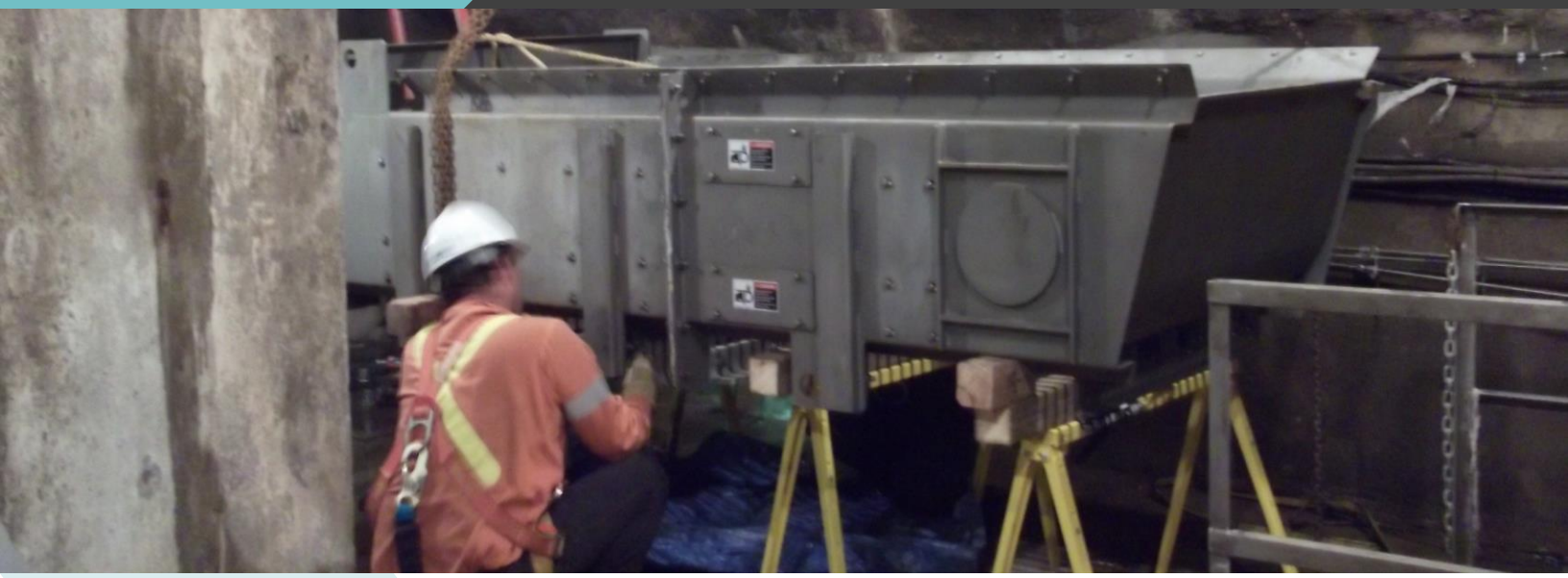
Headworks® INTERNATIONAL

CASE STUDY: Sudbury WWTP ONTARIO, CANADA



Headworks® Steps Up to the Challenge of Cavernous Screening

Customer: Sudbury WWTP
Industry: Municipal

Background

The City of Greater Sudbury is located 390 kilometers (242 miles) north of Toronto and is the seventh largest municipality (by area) in Canada. The rolling hills and uneven landscape of Northern Ontario required that the screens and Pump Station for the Sudbury Wastewater Treatment Plant be built 27 meters (90 feet) underground 50 years ago. Miners were contracted to carve through rock and ultimately built a cavern where the primary screening is still housed today.

Why Sudbury chose Headworks

The plant was experiencing a series of very unique challenges that stem from the location of the underground screen room. First and foremost, the two manual bar screens installed at the plant required cleaning as often as three times each day. A two man crew would have to travel underground to physically rake screenings off both screens. The screenings were then loaded into a wheelbarrow and taken up to ground level by elevator for disposal.

Additionally, the City of Greater Sudbury has experienced heavy rains as well as high flows during spring runoff of snowmelt. During some of these high flow events, heavy debris had plugged up the screens entirely, causing the screen room to flood up to 20 meters (65 feet) in depth. After the original construction of the pumping station, a submarine style door system was installed to seal off the screen room entirely during these flash flooding events.

KEY FACTS

- **Number of Screens:** 2
- **Bar Spacing:** 30 mm (1.18 inch)
- **Channel Width:** 1.22m (4 ft)
- **Channel Depth:** 2.36 m (7.75 ft)
- **Flow Capacity Per Screen:** 204,750 m^3/day (54 MGD)
- **Angle of Installation:** 75°

As part of the design of the Sudbury WWTP Pumping Station Upgrades, a bar screen that would require less maintenance and featured a submersible motor to minimize the damage that occurs during these peak floods was required. R.V. Anderson Associates Limited had contacted several suppliers on behalf of the City but they declined to supply a solution for the challenging application before Headworks® Inc. stepped up to the plate.

Solution

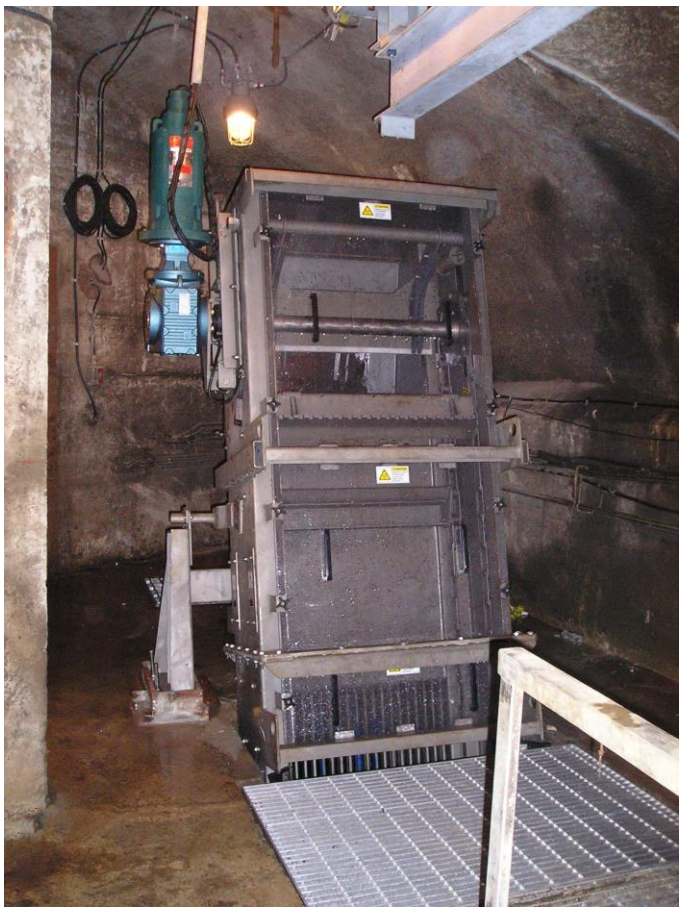
Headworks provided a motor for the MS® Bar Screen that could be completely submerged and would not require replacement after a flood. The screens were each designed to handle 204,750 m^3/day (54 MGD) of flow with 30 mm (1.18 inch) bar spacing and pivot out of the channel for ease of maintenance.

The final challenge Headworks faced was installation - since the plant was underground a crane could not lower the 5 meter (16.3 feet) long screens into the channel. So, each MS Bar Screen was shipped in three pieces and lowered down to the screen room via elevator and completely assembled on site.

Both screens were installed in the summer of 2011 and have required minimal attention since start up. When asked how the pair of MS Bar Screens has impacted the plant, Brad Johns, Water & Wastewater Services Facilities Engineer for the City of Greater Sudbury said, “During high flow conditions, the operators can now focus their efforts on operating the plant rather than having to worry about unplugging old bar screens and potential flooding of the screen room. The new screens have enhanced the Pump Station’s level of efficiency and dependability, while improving the safety for the operators during high flow events.”

The screens had to be brought down to the underground room in pieces and assembled on site

> *“During high flow conditions, the operators can now focus their efforts on operating the plant rather than having to worry about unplugging old bar screens and potential flooding of the screen room. The new screens have enhanced the Pump Station’s level of efficiency and dependability, while improving the safety for the operators during high flow events.”*
>
> *- Brad Johns, Water & Wastewater Services Facilities Engineer for the City of Greater Sudbury*



The first MS Bar Screen installed 27 meters (90 feet) underground!

Headworks International | 11000 Brittmoore Park Dr, Houston, TX 77041 USA
(713) 647 6667 | hw@headworksintl.com | www.headworksinternational.com