GRAND RAPIDS WASTEWATER FACILITY CUTS COSTS AND BOOSTS EFFICIENCY WITH INNOVATIVE HUBER GRITWOLF® UPGRADE

BACKGROUND & CHALLENGES

The Grand Rapids Wastewater Treatment Facility is located in west central Michigan (USA). It serves approximately 265,000 people and treats on average 45 million gallons per day (MGD) of wastewater prior to entering the city’s namesake and most precious resource, the Grand River.
Its headworks consisted of four antiquated aerated grit treatment basins with chain & flight grit collector systems. Maintenance and operating costs were high and labor intensive, and they knew more advanced technologies were available that could capture even finer particles that aerated tanks could not.
Although Vortex systems were considered as a replacement, cost estimates for the equipment and construction of new tanks was concerning. Thinking “outside the box” the consultant presented a plate settling, horizontal flow technology that would:

•Allow the reuse of existing basins,
•improve the efficiency of the units,
•significantly reduce project costs.

That technology was the HUBER GritWolf® advanced grit removal system.

SOLUTION PROVIDED BY HUBER TECHNOLOGY, INC.

Through a collaborative effort between the city’s consulting engineer, Hubbell, Roth and Clark (HRC) and HUBER, final designs addressed challenges such as raising the tank floor, sloping the side walls, auger and trough embedment into the floor, adding baffles to narrow the tanks and more.

PROJECT DATA

Client: Grand Rapids Wastewater Treatment Plant

Location: Grand Rapids, Michigan, USA

Project Type: Grit Removal

HUBER Technology, Inc. GritWolf® and RoSF4 Grit Washer

Completion Date: June 2024

The GritWolf is designed to provide the highest removal of fine grit from wastewater flows with the smallest footprint and minimal depth required of any technology. Using a combination of two proven processes: aerated grit settling tanks and lamella plate settlers, it removes fog as well as grit. Fine grit settling and retention is enhanced by sloped lamella modules to provide greater surface settling area. Fine bubble aeration in the first chamber lifts floatable particles to the surface that are removed via a FOG skimming system. The settled grit is delivered by a horizontal screw conveyor and evenly dosed to the grit removal pump. The grit pump delivers the grit to a HUBER Grit Washer for final washing, classifying and transport to the dumpster.

IMPLEMENTATION & EXECUTION

Although the original headworks had four aerated grit treatment basins, the city initially purchased one GritWolf Size 7, one grit removal pump, and one RoSF4 Grit Washer. Installed in 2022, this served as a full-scale pilot to build confidence in the technology as HUBER only had a few installations at the time.

Following this successful pilot and adherence to the performance guarantee, the city moved forward with the purchase and construction of three additional GritWolf units, three grit removal pumps and an additional RoSF4 Grit Washer. Independent, third-party testing of the pilot unit proved a removal percentage of 95% of grit particles greater than 105 microns.

RESULTS & BENEFITS:

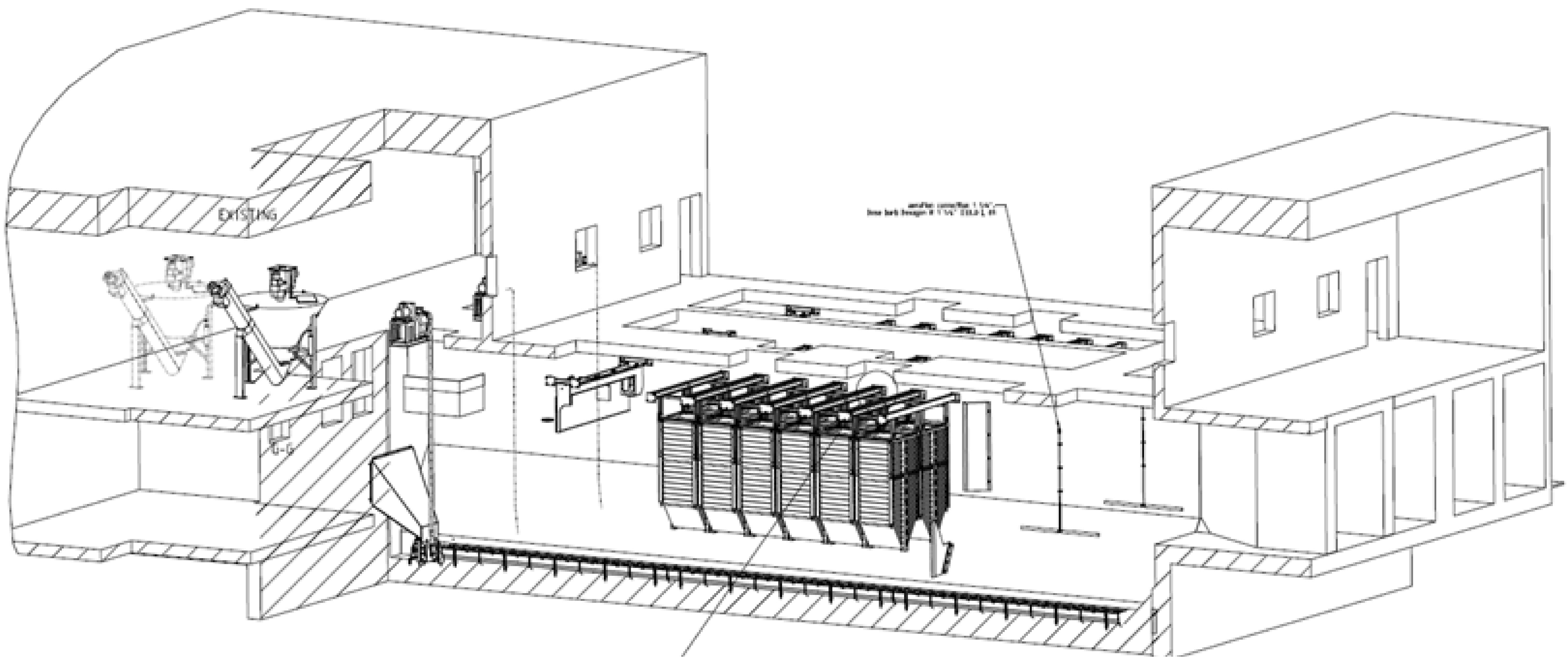
Performance Improvements:

✅ 95% removal of grit particles greater than 105 microns.
✅ Removed grit washed to less than 5% organics and 10% water

Operational & Environmental Gains:
✅ Efficiency even during peak periods with no reduced capture.
✅ Fit within existing footprint.
✅ Simplicity for personnel due to only one moving part.

CONCLUSION

HUBER was happy to collaborate with the consulting engineers and the city on the design, which helped to build confidence in this new technology, which had only a few installations. We are proud that the full-scale pilot proved our system would deliver on expectations.



Grand Rapids, MI Installation drawing

ABOUT HUBER TECHNOLOGY, INC.

Headquartered in Denver, North Carolina, HUBER Technology, Inc. operates a 206,000-square-foot state-of-the-art facility that houses offices, training centers, and advanced manufacturing capabilities. This enables us to design, produce, and deliver a wide range of wastewater treatment equipment, from dewatering screw press systems, headworks screens, grit handling, septage receiving, tertiary filtration and equipment and drying of biosolids equipment for use in the water and wastewater industry.

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For more information about the HUBER Grit Trap GritWolf® please scan the QR code