

CASE STUDY REF: 020

MISSISSIPPI FLOODWALL ORS PUMP STATION – ROLLER GATES



Location

Mississippi Floodwall ORS PS is located in St. Louis a city in the U.S. state of Missouri, on the western bank of the Mississippi River, which forms the state line between Illinois and Missouri.

Role of pump station

Project is having two sites at different location on bank of Mississippi river which are Mill creek pumping station and Baden pumping station. Located along the Mississippi River, these facilities are instrumental in protecting the St. Louis metropolitan area from flooding and regulating the city's nearly 3,000-mile-long storm sewer system.

Objective of project

Metropolitan St. Louis Sewer District's (MSD) aimed to upgrade key components of pumping station like aging flood control and storm sewer system. This challenging project included upgrades of two pump stations and an emergency flood control structure like roller gates and flap gates which are installed to protect city from flood and high water level in Mississippi river.

Scope and challenges in execution



Project Information

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| Project | Mississippi Floodwall ORS PS Rehabilitation |
| Owner | Metropolitan St. Louis Sewer District |
| Client | Municipal Equipment Company Inc. Alberici Constructions |
| Contractor | Penn Services LLC |
| Engineering Consultant | Black and Veatch |

Product Details

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| Type of gates | Roller type vertical lift gates |
| Size | 9' (2743 mm) x 16' (4877 mm) 9' (2743 mm) x 20' (6096 mm) |
| Quantity | 5 Nos. |
| MOC | Stainless Steel 316L |
| Operating arrangement | Hydraulically operated actuators |

Rodney Hunt was awarded for redesign, supply and installation of roller gates complete with embedments, sills, sealing surfaces, stems, stem guides and appurtenances as specified in scope and as required for a complete and proper operation of system when connected to the existing actuators and control system.

Major challenge during executing the project was minimum demolition of existing civil structure to facilitate contractor for ease in installation of gates with minimum erection time so that gates can be operational in quickest time frame. Rodney Hunt has carried out the same by providing highly customized product features looking to project specific requirement.



Design consideration of Rodney Hunt supplied Roller gates

Roller gates are specifically detailed for 100 year service life span with special design consideration inline with specification requirement. All roller on the gates are equipped with self lubricating bushes to achieve minimum maintenance during operation life span.

Gates were tested at site with leakage rates not exceeding 0.1 gpm/ft (1.25 lpm/mt.) of seating perimeter in full range of water head.

These gates were commissioned successfully in 2020 and are now fully operational as protective barrier against flood to save city during such unfavourable condition.



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