

Case Study: Rakeflow™ Multi-Rake Mechanical Screen at Rudra Sagar Ujjain



Our installation of 4 Multi-rake Mechanical Screens, 5 Sluice Gates and Conveying System at storm discharge outlet at Rudra Sagar Lake

Ujjain District is the first largest city in Madhya Pradesh, India located at the Banks of the Shipra River. Ujjain is an ancient and historical city that is 5000 old. The famous Temple, Mahakaleshwar Jyotirlinga (Mahakal or Shiva temple) is located at the center of the city. The Mahakal Temple is one of the 12 Jyotirlingas in the country and attracts annual tourist footfall of 15-20mn. The Mahakal Temple also registers a massive footfall during the Simhasth Kumbh here which takes place every 12 years. The Kumbh in Ujjain was last held in 2016.

As part of the Government of India's plan to develop 100 smart Cities in India, the "Mahakal Lok" project was implemented in Ujjain with the intent to redevelop the area around the famous Mahakaleshwar Temple. The project involved the rejuvenation and conservation of Lake Rudra Sagar situated at the temple corridor. The ancient lake spread across 17 acres had almost vanished and just mud was left in it. This lake used to get inflow from storm water drains which used to carry floating wastes such as rags, paper, plastic, metal scrap, and wood, etc. accumulated in the drain paths during the year are discharged into the lake, Rudra Sagar. This hampered the Ujjain City Administration's efforts for lake rejuvenation which was an important part of the Mahakal Lok corridor project.

Problem

Ujjain receives an average annual rainfall of 950mm, mostly during 3 months of monsoon period. During heavy stormwater events, thousands of cubic meters of wastewater and stormwater would flow into Rudra Sagar Lake making it full of filth and dirt. Rudra Sagar lake had developed water hyacinth and the regular inflow of solid waste into the lake made it impossible for any lake rejuvenation activity to succeed.

Solution

To prevent & screen floating waste entering the lake from the stormwater drain, Adroit has designed, manufactured & commissioned four multi-rake screens for flow rate of 14.40 cum/sec. Each of these screen measure 2600mm in width and 5900mm in height with a bar spacing of 20mm. Each screen weighs nearly 3500 Kgs. All four screens are installed side by side in the channels with five sluice gates measuring 3000mmX2000mm to control & direct the flow of stormwater. The screening collected from the bar rack is discharged via chute onto a belt conveyor of length 19.0m which collects, and transports screened waste from all four screens to the waste outlet for further transportation to solid waste processing.



Manufactured Mechanical Screens at our factory



Mechanical Screen & other equipment installation at Rudra Sagar, Ujjain

Outcome

Rakeflow™ Multi-rake Screen is key technological equipment in rejuvenating the Rudra Sagar Lake and adding to the beauty of the magnificent Mahakal Lok corridor. The screening system prevents any floating waste including plastics, plants or any large waste to enter the lake. All the screened waste is taken out through a conveyor. Allowing fresh clean storm water inside Rudrasagar. Mahakal corridor is now ready to welcome all devotees.

Rudra Sagar Lake **before** execution of Mahakal Corridor Project



Rudra Sagar Lake **after** execution of Mahakal Corridor Project



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[Video 2: Rakeflow Multi-rake Mechanical Screens installed at Rudra Sagar, Ujjain](#)