

CASE STUDY REF: CS/2023/029

STORM WATER PUMPING STATION FOR SELANGOR STATE IRRIGATION AND DRAINAGE DEPARTMENT



Location:

The project is in Parit Merbau, Selangor State Malaysia, installed by the State Irrigation and Drainage department.

About the project:

Floods in Malaysia are one of the most common natural disasters affecting the country, which occurs nearly every year especially during the monsoon season between October to March. Selangor State is one of the most affected areas with water levels rising as high as 60 cm above ground level in recent years.

Selangor State Irrigation and Drainage Department developed a plan to connect creeks and drainage canals to allow water out of residential areas and pump it over the flood level into the river.

The concern was, however, that the floating debris, logs, algae, etc. would require expensive screening to allow blockages-free operation of the Pumping system. The space available between the river and the drainage creek was also limited.

The Solution!

Jash offered Archimedean Screw Pump technology as a solution to reduce the Screening requirements and also reduce the footprint of the pump station. Jash proposed Archimedean screw pump that was tailored to the site condition to fit within the given space.

Project Details	
Project	PARIT MERBAU STORM WATER PUMPS
Owner	SELANGOR STATE IRRIGATION AND DRAINAGE DEPARTMENT
EPC Contractor	M/s BINAAN DEWARAJAN
Tender No.	JPS/P/SEL/MK/15/2018
Supplier.	JASH ENGINEERING LTD

Product Details	
No of Pumps	3 nos
Static Head	5.57 mtrs
Pumping Capacity	1500 l/sec per pump
Motor Power	110 kW
Runner Diameter	2150 mm
Bladed Length	11590 mm



ARCHIMEDEAN SCREW PUMP:

Archimedean Screw Pump has wide space between its flights that can easily handle floating debris, algae etc. Hence fine screening is not required. Wide trash rakes are sufficient to prevent logs and larger items from entering the inlet bay. Archimedean Screw Turbines do not need sumps and can be operated in-line, from bed level. Hence, they consume less power than conventional pumps.

Order was placed on Jash by sub-contractor SamMccoy Manufacturing Sdn. Bhd. on 12th May 2020. Screw pumps with troughs and bearings were manufactured indigenously in Jash Indore facilities. Jash provided a compact system where the Gearbox and motors were assembled with the pump within the extended trough with protective aluminum housing. This eliminated the requirement of a pumphouse and hence reduced the civil work. Electrical distribution board and panel were housed in a small shed.

The whole Project was impacted due to COVID protocols and a number of lockdowns called by the Govt of India. Despite challenges related to the supply chain and resources, the delivery was completed within 9 months including the monsoon period of 3 months. Installation and commissioning activities were done through video conferencing as offshore travel was banned between different countries.

The plant was commissioned in September 2021 and has been operating since then. Having experienced the reliability of this technology, the Malaysian gov't has already shown its intent to install several Storm water pumping stations in areas commonly affected by floods.



For more details on Parit Merbau Storm Water Pumping Station, please follow the link given hereunder:
https://youtu.be/3lomN9FaYWo?si=7a_quSNmwAO21570

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