



Bedford Pumps fulfill flood mitigation project for Indonesia

Bedford Pumps have designed, manufactured, and commissioned the largest submersible pumps in Southeast Asia as part of the Jakarta Urgent Flood Mitigation Project.

The multimillion-pound landmark scheme provided two pumping stations, Kamal and Sentiong, with the capacity to withdraw water from drains in subsidised areas where gravity is no longer sufficient, to protect the flood prone city.

The government backed £94M project, to safeguard land and life, was wholly dependent upon the eight, 700 kW, submersible axial flow, fish friendly pumps installed. Each pump passes 10,000 litres per second at 5m head with enhanced solids handling capabilities up to 450mm.

The unique design of the pumps provides enhanced solids handling capabilities, guaranteed to pass objects up to 450mm diameter. This is not limited to the size of the impeller but also the positioning of the diffuser, which is set back to avoid longer solids becoming trapped.

The contoured aerofoil-section guide vanes which support the inner motor chamber are profiled to minimise damage to any fish in the media and to enhance the solids handling capabilities of the hydraulic passages. This is imperative in Jakarta due to the excessive amounts of waste, including vegetation and branches, found in their polluted waterways.

The installation provides vital flood protection to the 11.2m people residing in Jakarta, one of the most populous cities in the world.

As a general rule the high flow, low head characteristics of axial flow pumps present high efficiencies in land drainage applications; these pumps, however, recorded efficiencies during pump testing (both prior to shipment and after installation) which far exceeded market benchmarks.

Advantages also include:

- Motor cooling using 100% of the pumped water
- Low noise levels
- Condition monitoring
- No coupling power loss
- Ease of maintenance
- Market leading hydraulic efficiency
- Lowest total cost of ownership



Fig 1. Pump ready for shipment



Fig 2. Pump onsite for install



Fig 3. Pumps in operation

Kamal & Sentiong Pumping Stations

The station was officially opened last month in a prestigious inauguration ceremony officiated by the President of Indonesia. The new build station, the largest in Indonesia at 50 cumec capacity, houses five of the eight pumps supplied and protects seven districts of Jakarta from inundation.

Albert Hadiano, Export Sales General Manager of Mectron Engineering PTE Ltd comments:

“This project is a landmark installation into our region. Part of the Jakarta Flood Mitigation Project, the scheme is government backed and as a consequence has involved incredibly tight stipulations and deadlines.

Bedford Pumps have worked closely with our company at every stage of the project. There have been numerous site visits from ourselves and our customer into their two manufacturing units for inspection and build checks, as well as for the external independent witness tests to verify the performance of the pumps before they left the UK. Bedford Pumps have also sent representatives to Jakarta to help iron out some issues on site and for the final commissioning of the pumps.

We are delighted to confirm that the pumps in both stations are running smoothly, and independent testing on site provided real life verified data confirming that the pumps are running with even greater efficiencies than could be demonstrated on the original performance testing in the UK.

Their installation will act as a point of reference for the region and will help pave the way for greater unity between our companies and collaboration across further projects in Southeast Asia.”

