

Leaders in pump innovation



The year 2017 marks a key milestone for APE Pumps as it celebrates its 65th year in business, underscoring its design, manufacturing and project management capabilities.

From its inception in 1952, APE Pumps has been an innovator in the field of fluid transfer solutions across applications and industries that include water utilities, mining, petrochemical, pulp and paper, ports and harbours, and the power station sector – a comprehensive skill set that is aligned with its sister company, Mather+Platt, which traces its own heritage back to England in 1845. Both companies are owned by WPIL Limited, based in India, which has manufacturing operations in its home country, as well as the United Kingdom, Thailand, Australia and Italy. “APE Pumps has succeeded because, from inception, we’ve always focused on our employees,” says Peter Robinson, managing director of APE and Mather+Platt South Africa.

“Our training and development focus is one of the main reasons we’re market leaders today.” APE and Mather+Platt serve specific markets with purpose-built pump solutions. Since 1952, APE has rolled out

a series of product innovations that are the direct result of constant industry engagement. “Our customers appreciate this because our research and development focus and downstream products are designed and manufactured based on their requirements and experiences. This is especially the case when it comes to purpose-built customisations and retrofits, which are some of our specialities. We listen and deliver because we have a vested interest in our client’s business,” says Robinson.

Malawi bulk water upgrade

Two turnkey projects (entailing design, supply and installation) were recently completed in Malawi for the Blantyre Water Board (BWB) and serve as excellent examples of ‘out-of-the-box’ solutions. These were led by APE’s Projects Division, established in 1998 and currently graded as a 7 ME contractor by the Construction Industry Development Board. Core areas for the Projects Division include the supply and installation works of pumps, motors, electrical switchgear, transformers, valves and spares for mechanical, electrical and civil works.

The first project in Malawi entailed the completion of rehabilitation and renewal works at BWB’s Walker’s Ferry raw water intake and high-lift pumping station, while

the second entailed the upgrading of the Chileka booster pump station. Both are vital installations in terms of ensuring Blantyre’s water security. Combined, these contracts were valued at around R200 million, with the Chileka project awarded in April 2013 and Walker’s Ferry in October 2013. All works were completed by August 2015 and the defects liability period concluded in September 2016.

At Walker’s Ferry, situated alongside the Shire River some 60 km from Blantyre, water is pumped through a water treatment plant to two high-lift pump stations. After transferring to the purification plant, two further pump stations, each housing three operational pumps in parallel (depending on water level requirements) and one on standby, transfer the water NB 750 m³/h and 500 m head to Chileka over a distance of around 26 km.

From there, pipelines carry the water a further 13 km to feed reservoirs to supply the city of Blantyre. These two pipelines were also refurbished during the project works. The scope of works at Walker’s Ferry was extensive. Critical infrastructure works included the supply and installation of common header delivery pipes (800 NB), and the installation and commissioning of six new raw water pump sets,

APE PRODUCT MILESTONES SINCE 1952

1952

APE Pumps enters the market under the name Sangus

1953

Sangus range of submersible pumps

1965

APE split-case range from 50 mm to 450 mm

1970

APE Nimbus end-suction 80 mm to 300 mm range

1974

APE range of end-suction pumps from 32 mm to 150 mm

1977

Introduction of the Byron Jackson petrochemical range

1979

APE vertical turbine range of pumps from 150 mm to 1100 mm

each with a capacity of 1 350 m³/h and a head of 35 m. At Chileka, the scope included the installation of eight new 750 m³/h in-house manufactured pump sets, including connection pipework to the new suction and delivery headers.

“On both projects, we pooled the collective experience of APE, Mather+Platt and WPIL to deliver an exceptional result on what was effectively a total refurbishment and replacement of all the major pump and valve elements, some dating back to the 1960s, plus transformers and switchgear, and all the associated concrete and allied housings,” says Richard Harper, project manager, APE. “Just to illustrate the scale, we installed the equivalent of 52 km of cabling.” The mechanical, electrical and civil works were carried out by the group. WPIL designed and manufactured the electrical components, with APE responsible for the mechanical and civil phases, and Mather+Platt for supplying the pumps. “Precise planning and excellent teamwork all came together despite very demanding deadlines. One of the conditions of the contract was to maintain uninterrupted water supply to the city of Blantyre during all stages of construction. The minimum threshold stipulated was a 70% supply at all times, which was consistently met and there wasn’t a single day without water during the entire course of the project.” That equates to between 2 700 m³/h and 3 000 m³/h throughout the approximately 18-month construction programme. At peak, APE had 189 people on-site.

Innovations

From the beginning, APE has embraced innovation and this is well demonstrated by its

The general manufacturing workshop



Optional polyurethane coatings on internal pump casings following detailed studies in this area and market demand for extended life

ongoing introduction of pump developments over the past 65 years. Externally, APE also works with specialist leaders to enhance its designs. This includes the recent offering of optional polyurethane coatings on its internal pump casings, following detailed studies in this area and market demand for extended life.

As Harper points out, these coatings reduce the friction factor, providing much more efficient flow characteristics, plus there is a reduction in electricity consumption due to the enhanced fluid movement.

Walker's Ferry new high lift pump station

Chileka high lift pump station refurbished

“Corrosion and rust prevention are always concerns for customers and, with these coatings, we can counter up to 62 aggressive chemicals and confidently offer better warranties,” says Harper.

Retrofits and the Pattern Shop

Whatever the age or date of installation, APE has the ability to design, fabricate and

1980

APE submersible range of dewatering pumps

1983

APE Robushi chemical process pumps

1985

APE Vac-Seal range of pumps

1997

Introduction of the new range of APE submersible pumps from 100 mm to 250 mm

2002

APE Byron Jackson range of petrochemical pumps, 8th edition

2007

PSV Holdings acquires Pump Division

2012

WPIL India acquires APE and Mather+Platt South Africa

APE's general workshop area

retrofit. Not an easy task, but one it can successfully deliver on thanks to its wooden pattern-maker expertise. In fact, APE is one of the few companies in South Africa that provides apprenticeship training in this field, and it's an essential one, especially when tackling retrofits on pumps that no longer have available design drawings to work from. This

is underscored by a recent example where there was a client requirement for the replacement of a Mather+Platt water pump model installed in the 1960s.

"The drawing and the pattern were no longer available since this is a pump model that was discontinued years ago with the advent of new technologies. In this specific example, the client's units were small multistage pumps that were succeeded in the market by the introduction of end-suction pumps," says Harper. However, these multistage pumps could not be replaced with a modern version because of the pipework layout at the client's facility.

So APE took a sample casting of one of the units and, from there, made a new pattern and a perfect replica of the 1960s version. A similar example entailed the refurbishment of two pumps for a major South African water utility. These pumps were installed some 40

“Sixty-five years in the field of precision engineering is an exceptional achievement. We've invested in our personnel and they're at the heart of our operation.”

years ago and were in need of an overhaul. They have now been refurbished with updated materials and come with a 20-year APE lifespan. The efficiency ratings achieved to date far exceed the originals.

"Standard, customised or retrofitted, APE has the solution for every fluid transfer industry, and we've been doing this for 65 years, backed by a multinational group that pioneered pump development during the peak of Great Britain's Industrial Revolution in the late 1800s. We're more than ready for the next 65 years, thanks to our concerted design and manufacturing, and our professional and committed team," adds Harper. **35**



www.apepumps.co.za