

## 20 years of success for the Eden Project

Application market	Construction		
Market segment	Dewatering & Drainage		
Pumped medium	Water containing natural "loose leaf litter"		
Pump product	Bearing Frame		
Country	United Kingdom		

### Challenge

For more than 20 years the Eden Project in Bodelva, Cornwall has been impressing visitors with its flora, plant collections and rainforest features, establishing itself as a world-class entertainment and educational attraction. At the heart of Eden is the Rainforest Biome, the largest indoor rainforest in the world with impressive diversity. The forest features a waterfall, which is fed by the rainwater that falls on the Biome. This system is driven via the ponds and watercourses that run in a hydraulic circuit with medium pressure pumps delivering the flows to feed the head of the waterfall. These holding ponds contain a lot of natural "loose leaf litter" which could become entrained in the pump suction. Pumps with a proven solids handling capability were therefore required, as the water needs to be reliably circulated 24 hours a day.

### Solution

Hidrostal supplied three of their Screw Centrifugal Bearing Frame end suction Pumps in May 2000. The pumps are installed horizontally into a below ground dry well plant room with its own dedicated suction pipes into an adjacent oceanic lake feature. Two 80mm and one 100mm discharge pumps, driven by inverters, discharge into a common manifold that delivers flows up to the top of the waterfall before cascading back into the lake feature. All three pumps operate in a duty/assist/assist mode in the day whilst a single pump operates at night to prevent any stagnant water build up and eliminate any risk of Legionella.

### Benefits

Hidrostal pumps were the ideal solution for the project as each pump in the Hidrostal range incorporates the patented **low shear** single vane screw centrifugal impeller. The geometry of the impeller provides optimum hydraulic performance and very large open passages, ensuring that its ability to pass rags, fibers and other large objects is second to none. The engineering team at Eden are delighted with the reliability and longevity of the Hidrostal pumps, which have been in operation at the site for over 18 years and have never blocked or suffered a major breakdown. Kevin Bate, the Senior Site Engineering Manager for the Eden Project, confirms, *"The original Hidrostal pumps are still feeding our iconic waterfall in the Rainforest Biome. They are a testament to good pump design – simply brilliant pumps!"*

Quantity of units sold	2	1
Pump type	D080	D100
Motor data	15 kW with speed control (VFD)	30 kW with speed control (VFD)
Material combination	Cast iron pump body and wear parts with ductile iron impeller	
Duty point	Flow : up to 40 Litres per second Head : up to 20 meters overall	Flow : up to 80 Litres per second Head : up to 30 meters overall
In operation since	2000	