

# OCEAN KINETICS & ARCH HENDERSON TAKE ON ANTARCTIC CHALLENGE

Shetland & Aberdeen based marine engineering, diving & fabrication company Ocean Kinetics & consulting civil engineers Arch Henderson are to undertake what is thought to be the first underwater welding project of its kind inside the Antarctic Circle for the British Antarctic Survey (BAS).

The work, which will take place in one of the world's most severe climates, is to repair a damaged quay which is thought to have been hit by an iceberg at the Rothera Research Station.

Temperatures in Rothera can drop to  $-20^{\circ}\text{C}$  in the winter months with an average of 70 days gale force winds in any year. During the summer months, when the repair works will be carried out, the temperature varies between  $0^{\circ}\text{C}$  &  $5^{\circ}\text{C}$ .

Arch Henderson & Ocean Kinetics are working together to repair the quay side which is used by BAS to berth their vessels RRS James Clark Ross & RRS Ernest Shackleton during the summer months. A temporary repair is required in advance of the quay being reconstructed in approximately 4 years' time.

Arch Henderson, who are based in Aberdeen and have offices throughout Scotland & in the Falklands Islands, was commissioned by BAS to find a solution to repair the quay after a hole appeared on the quay deck which was found to be a consequence of a split in the corner of the quay sheet piles.

The repair method devised by Arch Henderson & Ocean Kinetics' consists of strapping chains around the corner which are tensioned against brackets welded to the sheet piles along with a considerable amount of underwater welding and steel plating work. Taking cognisance of the remote location & very limited local resources the chosen method requires a minimum of plant & can be easily adapted should the damage have worsened over the current winter period.

Michael Fox, Marine Projects Director for Ocean Kinetics, said: "We worked quickly to mobilise and meet the sailing deadline. In that time we fabricated and supplied all the materials needed for the contract and provided all the necessary diving equipment and plant to carry out the works."

"Taking into consideration the remoteness of the project location we had to send plenty of spare parts along with back up welding sets and generators. If something was to breakdown there it would take weeks, if not months, to ship in a replacement.

"We deployed the plant and dive equipment for the project on a ship on September 8 2015. However, we won't be on station until February to carry out the repair

works. We have been working with Arch Henderson for over 20 years & we have built up an excellent working relationship.”

“This is an exciting project for both companies and we think we might be the first company to carry out underwater welding in Antarctica.”

Arch Henderson, which was established in 1919, worked with Ocean Kinetics to design the solution to repair the quay.

Andy Martin, Partner with Arch Henderson, said: “We are pleased to be working with the British Antarctic Survey. At Arch Henderson we strive to create innovative & cost effective solutions for our clients. It is a very interesting project & our first opportunity to work in the Antarctic.”

Ocean Kinetics will be at Rothera for about 12 days. The station, which was established in 1975, is open throughout the year. In summer, the population peaks at just over 100 people. In the winter months, April to mid-October, a team of 22 continues to undertake scientific research and maintain the station infrastructure.