Gurit CASE STUDY

ANTARCTICA NEW ZEALAND'S SCOTT BASE:

DESIGNING FOR CHALLENGING CONDITIONS

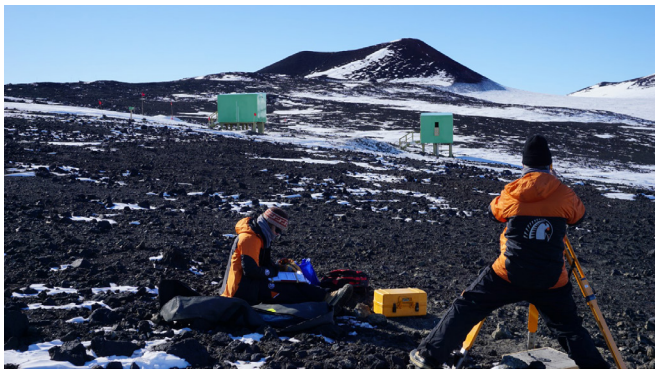
There is a network of observatories around the world, known as INTERMAGNET, that monitors the changes of the Earth's magnetic field over the long-term. Scott Base Geomagnetic Observatory operated by GNS Science in Antarctica is one of the most important geomagnetic observatories in the world due to its proximity to the South Pole. As well as supplying data for smartphone orientation, geomagnetic measurements from Scott Base are used for air and ship navigation, monitoring space weather, aurora forecasting, and modelling the Earth's geological and geophysical activity.

New Zealand's Scott Base is undergoing a major redevelopment. Antarctica New Zealand is replacing the aging infrastructure with a safe, fit-for-purpose, and sustainable research facility that will continue New Zealand's presence on the ice and science programme for 50+ years. Located 3800 km from its Antarctic gateway city, Christchurch, and exposed to 260 km/hour winds, and minus 60 degree temperatures, Scott Base requires robust and reliant systems that can deal with the extreme environment.

Gurit has been working alongside world-renowned Hugh Broughton Architects - who specialise in Antarctic and Arctic buildings - to deliver custom GRP cladding panels which will be used where the design of the new base calls for significant curvature to reduce wind loads and snow build-up. The GRP panels offer extreme levels of insulation designed to help the structure meet aggressive energy efficiency targets, and are made with a fire-retardant resin for improved safety. The installation of the new geomagnetic observatory was one of the first steps in the redevelopment project – the relocation of long-term science experiments located around the base to safer areas. It was critical that it was established in a magnetically quiet location and wouldn't be impacted by the rest of the base's new buildings, which will in part be made of steel.

The new geomagnetic huts were designed by Hugh Broughton Architects, WSP, and Steensen Varming and were built by New Zealand Structural Insulated Panels (NZSIP).

The huts feature Gurit structural foam core as a non-magnetic solution, which also helps meet insulation and weather tight integrity challenges.



GNS Science conducting surveys at the new geomagnetic huts