

## THE PRINCESS ELISABETH STATION: A SHORT HISTORY

*"So far the whole project has been quite extreme – not extreme in a bad way but extreme in a good way. We are pushing the limits of technology as well as our own personal limits with this Antarctic station project. We are also trying to accomplish a great deal on a tight budget. No one has ever tried to do what we're doing before. We're venturing into new frontiers, and you have to be willing to go to extremes or deal with extreme situations in order to do this."*

Johan Berte, Project Manager of  
the Princess Elisabeth Station Project

### An ambitious project

Belgium has a long, distinguished history of exploration and scientific research in Antarctica. In 1898-99, Belgian Adrian de Gerlache's expedition aboard the Belgica was the first to overwinter in the Antarctic. During the International Geophysical Year 1957-58, de Gerlache's son, Gaston, set up the first Belgian Antarctic Station, King Baudouin, which operated successfully until 1967.

Building on this tradition, in 2004, the Belgian government commissioned the International Polar Foundation (IPF) to design and construct a new research base in Antarctica. The Princess Elisabeth station will become operational during the fourth International Polar Year (2007-08) and will support scientific research within the context of the IPY. Reflecting the public-private philosophy at the heart of the project, the maintenance costs of the station will be funded by the Belgian government, while funds for the design and building costs are being raised by the IPF through corporate sponsorship and public donations.

In accordance with the wishes of explorer and entrepreneur Alain Hubert, one of the three co-founders of the International Polar Foundation, and his colleagues at the IPF, the Princess Elisabeth will be the first Antarctic research station entirely designed and built as a "zero emission" structure. Materials and technologies have been selected in accordance with eco-construction principles that aim to reduce the environmental impact of the station. Wind and solar energy will provide renewable energy to the station.

The chosen site for the station is a small ridge running north to south 500 metres north of Utsteinen nunatak, and

only a few kilometres from the Sør Rondane Mountain Range. It lies in the middle of a 1,100 km gap between the Russian Novolazarevskaja station and the Japanese Syowa station, and not far from the old King Baudouin station: A region which, for a long time, has been without logistical and scientific infrastructure.

*"There are several reasons why the Utsteinen site was chosen for the Princess Elisabeth Station. The site's geographic location is ideal in that it offers a wide range of scientific opportunities, from the Eastern ice shelf to the nearby mountain range. The ridge was chosen because it is flat and bare of snow. This assures good stability when anchoring of the station. The way this ridge is situated enables the wind turbines to be set up perpendicular to the direction of the prevailing winds and supply a constant amount of wind power. Furthermore, the fact that the ridge is surrounded by light snow is convenient because it can be melted to provide the station with water."*

Dr Hugo Decler, Glaciologist from  
the Vrije Universiteit Brussel (VUB)

### Several years in preparation

Early designs for the Princess Elisabeth station were first drawn up in 2004.

In December 2004 a first surveying expedition selected a construction site for the new station. A topographic survey of the site was carried out and an Automatic Weather Station (AWS) with satellite data link was installed to collect precise meteorological data.

In November 2005 a second logistics and surveying expedition was launched to collect additional topographic and ice thickness measurements and to carry out necessary maintenance work on the AWS. An air and overland reconnaissance of Breid Bay on the Antarctic coast was also carried out to select a secure icebreaker mooring for the future unloading site for equipment and materials for constructing of the station, as well as to find a safe route inland to the chosen site.

During the 2006-07 austral summer, a third expedition took place to prepare the site and test the suitability of the overland route chosen the previous year. The expedition also received the first shipment of heavy transport



equipment and materials, and erected and tested the first wind turbines that will produce energy for the station.

## Construction Phase

Following the official inauguration of Princess Elisabeth station on the 5th of September 2007 in Brussels, it will be disassembled and sent to Antarctica. From here, the construction phase of the station will begin from November 2007 to February 2008.

In Phase 1 of the construction plan, a team will travel to the station site at Utsteinen to prepare the logistics and begin work on the foundations of the structure.

In Phase 2, a second team will set up a temporary coast base camp and unload the dismantled parts of the base and supplies from an icebreaker moored in Breid Bay, and transport them to an inland depot. After abandoning the coastal camp, the crew will start transporting all the equipment and materials to Utsteinen across the established overland route.

When all materials are on site, both teams will finish construction of the station. The overall construction time is planned to be 2 months (January and February 2008)