

Description of Princess Elisabeth Antarctica

1. A Zero Emission research station: solar and wind power

The sun and wind will supply the station with the energy it needs. Eight wind generators will be installed at the front and rear of the station, each producing 6kW of power. Altogether, this installation will produce 48kW of power.

The roof and outside walls of the station will have 109.5 m² of photovoltaic solar panels. In addition, a further 270 m² of panels will be placed on the rock next to the station. They will produce a total of 50.6kW. The power produced by the wind generators and solar panels will be stored in batteries placed at the heart of the station.

The station's main systems (plumbing, ventilation, bioreactor and the batteries necessary to store the electricity the base requires) will be located in the middle of the building's main floor. Heating for the building will be supplied by a system that brings together passive solar heating and co-generation, by recycling the thermal radiation emitted by the station's energy core, the computers, lighting and even the human presence.

2. A specially designed space insulated against extreme weather conditions

With a total surface area of 700 m², the Princess Elisabeth station has been designed to accommodate a maximum capacity of 20 people.

The building is fitted out over two levels. The first floor has a kitchen, a bathroom, a laboratory and a storage zone. The second floor has a shared living room, three bedrooms, an infirmary and offices, as well as a control room.

Finally, a garage will be built outside the base. It will house the vehicles (snow scooters, tractors) and the equipment.

To provide optimum insulation against the extreme cold of the Antarctic (-40°C), the station's outside walls are composed of 9 layers: stainless steel, a silicon-based waterproofing layer, glued-laminated spruce, etc. The window panels consist of a first layer of double glazing, an air space and a second layer of special double glazing.

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