

Project Description

The ecological impacts generated by human activity in Antarctica have progressively intensified the potential environmental risks. We understand that it is inevitable that man colonizes nature, in fact, Argentina has 13 Antarctic bases today, which are highly polluting, use 100% fossil fuels, do not have good waste treatment, etc. Part of the project is to understand that we must aim to have fewer stations, but of higher quality, which do not harm the environment and have optimal living conditions for scientists and researchers.

We decided to undertake the search of the Argentinean Antarctic typology, which does not replicate a modern architecture as the new international bases, but takes charge of the pre-existence and bets on the completion of the existing base, as well as aims at a rigorous control of the territorial extension and its associated activities to protect the territory.

The Argentine Scientific Station of Marambio ignores many rules of the Madrid Protocol on the Protection of the Antarctic Environment. Today, Argentine Antarctic stations depend almost 100% on fossil fuels (Antarctic diesel). This not only generates CO2 emissions of 11 tons every 60 barrels, but also directly pollutes the territory through leaks. The substitution of this fuel by renewable energies favors the human presence in a territory that should naturally be a world natural reserve. It also considerably reduces the number of trips made from the continent (Argentina) to Antarctica.

Statements on Sustainability

Respectful coexistence with the territory

The ecological impacts generated by human activity in Antarctica have progressively intensified possible environmental risks, such as invasive species, pathogen transmission, soil destruction, altered behaviour of native fauna, CO2 emissions, accidents and fires, among others. We understand the inevitability of human colonising nature; therefore, we propose a respectful coexistence that aims at a rigorous control of the territorial extension and its associated activities.

It is our duty as architects to adapt to the climate situation and learn to provide an answer to both the research area and environmental issues.

Territorial Planning and Sanitation

The project is located in the Argentinean Scientific Marambio Station, which today ignores

numerous rules on the Madrid Protocol on Antarctic Environmental Protection. We are aware of the current economic situation of the country therefore we propose a sequence of stages, which allows the project to be sustainable in time. Initially, these stages will focus on cleaning up the territory, reusing existing structures and generating less impact. We believe that the key to conscious renovation is the preparation of the territory, prior to the incorporation of infrastructures.

Environmental sustainability

Nowadays the Argentine Antarctic Stations are almost 100% dependent on Fossil Fuels (Antarctic Diesel). These not only generate CO2 emissions of 11 tons every 60 barrels but also pollute directly to the territory through leaks, due to lack of protection and maintenance. The replacement of this fuel by renewable energies favours the human presence in a territory that should naturally be a world natural reserve. It also considerably reduces the number of trips made from the continent (Argentina) to Antarctica.

A new way of thinking about sustainable architecture

We believe that generating a construction system that the Argentine industry can carry out is key to the development of the project. That is why we turned to FAdeA, which is the Argentine aircraft factory dedicated to the design and manufacture of military aircraft. The economic viability is generated from industrial production and serial work. Four types of modules were designed for the system with which the entire scientific base is assembled. The prefabrication in the continent guarantees a minimum action in the Marambio station, since, due to the climate, it is very difficult to build in Antarctica. The module is resolved in 70% in the factory and in Marambio only assembly tasks will be carried out.

We believe that instead of harming the environment less, it is necessary to learn how we can participate in that environment, living harmoniously in the nature around us.

Our proposal for Marambio is not simply a technical, economic, ecological or social change: it has to go hand in hand with an underlying change in the way we think about ourselves, our relationships with others and with nature as a whole.