

Las Caletillas rock face on the TF-1 highway in Tenerife, Spain



Project details

Client: Island Council

Date: 2017

Country: Spain

Area of Activity: Specialised engineering

Main Activity:

Construction project to define the request for works proposals

Project for corrective and preventive measures for rock falls from the Las Caletillas rock face, Tenerife.

The TF-1 highway linking Santa Cruz de Tenerife with the airport area in the south and the beaches of Los Cristianos is one of the island's main transport routes and carries very intense traffic all year round. Throughout 2000 Prointec conducted a study of all the rock faces adjoining the roads on the island. This road was subsequently widened from two to three lanes, thus increasing the hazards and instabilities, and particularly during periods of rain.

The project involved a geotechnical characterisation of the terrain where the rockfalls occur and which ultimately affect the roadway in the north-southbound direction. The compound stability of the rock face adjoining the road was also assessed through a study of discontinuities and with computer programs, and the trajectories and bounce of the stones most likely to fall were simulated according to size and height.

The main milestones in the project were then defined for actions to improve and work on the rock face with a view to assuring the road traffic by minimising the risk:

- Levelling and clearing of the terrain and existing elements.
- Removal of loose material on the wall support and in the ditch.
- Stabilisation with a reinforced steel mesh, shotcrete, California drains, concrete wall, masonry wall and dynamic barriers.
- Replacement of road infrastructure elements.
- Signposting and road markings for roadworks and detours.

Due to the characteristics of the road traffic, the works must be done by night and with the closure of the lane to ensure the integrity of both the road users and the workers engaged in the work at all times. The section is located on a curve with very little space between the rock face and the road, so much of the work must be done from the top of the rock face, using specialists in working at height ("climbers").