

CLIMATE RESILIENT MAOTA FONO

As the construction of the new Maota Fono at Mulinu'u takes shape, there are many features that have been incorporated into the design to protect it from the environment.

The location of the project was the first consideration. The Mulinu'u peninsula is both historically and culturally significant to the Government and the people of Samoa. Traditionally this is the political arena of Samoa.

Mulinuu is a low lying coastal area that is the subject of potential storm surges and sea inundation. Extensive climate modelling of the area was undertaken by scientists from Australia's Commonwealth Scientific and Research Organisation, in conjunction with the South Pacific Regional Environmental Program and Professor John Hay. Professor Hay is an expert in Environmental Science, Policy and Management, with over 40 years of international work experience in academia, the private sector and government organisations.

This modelling was reviewed by the Samoa Bureau of Meteorology of the Ministry of Natural Resources and Environment (MNRE) and other project stakeholders and resulted in the building floor level being raised approximately 700 millimetres above that of the previous Maota Fono. It will provide protection against the combination of flooding from rain events, high tides, rising sea levels and storm surges over the life of the building.

During design of the Maota Fono, an independent Environmental Sustainable Development (ESD) consultant was engaged to work with the designers, to review the designs as they developed and provide recommendations.

The design incorporates many environmental features including high levels of thermal insulation to the roof, walls and floor, corrosive resistant materials and the clever use of shading and window positioning to reduce solar heat gain.

The airconditioning system caters for the estimated long term increase in daytime temperatures and the building is also designed to withstand earthquake and cyclonic events in accordance with the Samoa National Building Code and Australian Standards.

The incorporation of these features into the design and construction of the Maota Fono not only creates climate resilient infrastructure, it will also make the Maota Fono a comfortable space for the occupants.

Importantly, these features will also minimise the operational costs of the facility to the Government once the Maota Fono is in use. These costs include such things as energy and maintenance / repair requirements.

Incorporating these features into the design and construction of the project may cost a little bit more now, but the savings in operational costs is expected to outweigh that cost over the life of the building, and thus

produce a building that is not a financial burden to the Government of Samoa.

KEY ENVIRONMENTAL FEATURES OF THE MAOTA FONO

Air-conditioning system designed for expected long term increase in day time temperatures.

Heat reflective metal roofing with thermal insulation.

Earthquake and cyclone design to Samoan and Australian Standards.

Rust resistant coatings to steel roof framing.

Floor level increased from 2.80 metres to 3.5 metres above Sea Level.

Minimal glass to East and West elevations to reduce heat gain.



High performance window glass with low solar heat gain.

Insulated external wall elements.

High strength concrete to minimise corrosion of reinforcement.

Thermal Break in concrete ground slab to reduce heat transfer from outside to inside of building.

Insulated concrete ground slab.

The Government of Samoa, with the generous support of the Commonwealth of Australia, is redeveloping the MaotaFono at Malae o Tiafau, Mulinu'u.